

# Puget Sound Gateway Program

FY 2019 INFRA Grant Application | March 4, 2019



## Attachment 1 | PROJECT NARRATIVE

All Application Materials Available at [www.wsdot.wa.gov/projects/gateway](http://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 FASTLANE, FY 2017/18 INFRA) Puget Sound Gateway Program
Project Costs:	
<i>INFRA Request Amount</i>	\$ 89.7 million
<i>Estimated Federal Funding (excluding INFRA)</i>	\$ 8.0 million
<i>Estimated Non-Federal Funding</i>	\$ 1,853.6 million
<i>Future Eligible Project Cost</i>	\$ 1,897.1 million
<i>Previously Incurred Project Costs (through 1/31/2019)</i>	\$ 54.2 million
<i>Total Project Cost</i>	\$ 1,951.3 million
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?	\$ 1,897.1 million
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?	\$ 1,897.1 million
Approximately how much of the estimated future eligible project costs will be spent on components constituting railway-highway grade crossing or grade separation projects?	\$ 6.2 million
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 <sup>1</sup>
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

<sup>1</sup> <https://www.transportation.gov/buildamerica/infragrants/urbanized-area>

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# 1 Project Description

## 1.1 Project Summary

The Puget Sound regional highway system is incomplete. Today, international commerce and productivity wait while shippers, farmers, and goods sit in unnecessary congestion, risking avoidable collisions. Two historic connectivity gaps in the highway network exist because of a decades-long lack of national and state transportation system investment. That is now changing.

The Washington State Legislature and local governments have funded 95% of the [Puget Sound Gateway Program](#) (Gateway Program) to complete these critical network gaps. The [Washington State Department of Transportation](#) (WSDOT) is requesting \$89.7 million in INFRA grant funds to leverage \$1.86 billion in programmed funds for the Gateway Program. WSDOT needs federal help to close the Gateway Program's funding gap because state funds generated from a large gas tax increase, congestion pricing, and partnership agreements are fully allocated.

INFRA funding will allow WSDOT to complete 12 miles of highway construction in the Puget Sound region. The Gateway Program is 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. Both projects have completed environmental reviews and will be delivered through innovative Design-Build procurement with construction starting in 2019.

Together and individually, the two projects are cost-effective, supported by a diverse range of partners. Both projects will include innovative variable tolling and ITS technologies designed to support future V2X infrastructure for connected and automated vehicles.

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 a common transportation problem: severe traffic congestion within the Puget Sound region, a major gateway for U.S. trade transported by trucks to and from the Ports of Tacoma and Seattle, and to the [Seattle-Tacoma \(Sea-Tac\) International Airport](#) (see Sidebar). Delivered together as the Gateway Program, these corridor improvements produce greater connectivity and congestion relief than as separate projects. Bridging this highway gap will connect workers and goods to jobs and commerce in the Puget Sound region more efficiently than previously allowed.

### CONNECTING VITAL MARINE PORTS AND AIRPORTS, URBAN JOB CENTERS, AND RURAL PRODUCERS

The Puget Sound Gateway Program will:

- Complete missing network connections to the Ports of Tacoma and Seattle with variably tolled highways
- Connect the ports to agricultural and manufacturing producers in rural areas of eastern Washington and northern tier states
- Provide for direct access to Sea-Tac International Airport, better connecting the state's hub airport to I-5 and improving movement of air cargo
- Link these economic engines with the region's Kent, Sumner, and Puyallup valleys, home to the second-largest distribution center on the West Coast and the fourth largest in the country

## 1.2 Project Background

The Puget Sound Regional Council's (PSRC) [Transportation 2040: The 2040 Metropolitan Transportation Plan](#) prioritizes the Gateway Program as two key highway projects that will enhance freight mobility and solidify the Puget Sound region's strategic position as a critical gateway for international trade. Currently, the incomplete freeways dead-end and feed into local streets and arterials.

FIGURE 1-1. LOCATION MAP OF PUGET SOUND GATEWAY PROGRAM



**FIGURE 1-2. GATEWAY PROGRAM VIDEO**



In July 2015, the Washington State Legislature approved the [Connecting Washington Transportation Funding Package \(CWTFP\)](#), prioritizing the Gateway Program with \$1.86 billion in state, toll, and local investments, more than any other project in the 16-year, \$16 billion package. 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.”<sup>2</sup> The two Puget Sound Gateway corridor projects are linked functionally in that they, along with I-5, the West Coast’s economic and mobility backbone, link three economic engines — the Ports of Tacoma and Seattle, operating together as the [Northwest Seaport Alliance \(NWSA\)](#), and Sea-Tac International Airport — to key supply chains in the Pacific Northwest and rural producers in eastern Washington and beyond.

### 1.3 Regional and National Significance

The Gateway Program supports the national and regional economies. By providing direct freeway routes that reduce travel times and improve safety and reliability, the Gateway Program improves the movement of goods into and out of the NWSA and Sea-Tac International Airport. These ports generate business revenue to local and national firms providing vessel and cargo handling services at the air and marine terminals, which, in turn, provide employment and income to individuals, pay taxes to state and local governments, and support economic development.

The port facilities also support rural economies across the Pacific Northwest and northern tier states. 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 eight states and provides a vital link for global trade.

### 1.4 Addressing Transportation Challenges

In order to maximize the competitiveness of the U.S. and the Puget Sound air and marine facilities, reliable freight highway corridors leading to and from the NWSA and Sea-Tac International Airport are needed. Due to the incomplete segments of SR 167 and SR 509, freight traffic to and from the NWSA and Sea-Tac International Airport is currently forced to utilize congested roads and exit limited access highways to use local roadways to reach the ports. These new highway segments will provide direct access into and out of I-5 and these ports, thus greatly reducing heavy truck traffic on local streets.

I-5 is the key commute and economic corridor connecting the south and central Puget Sound regions and is the most heavily-used truck route in the region. I-5 carried more than 1.6 billion person-miles between Olympia and Federal Way in 2017 with an overall 16% increase in delay between 2015 and 2017.<sup>3</sup>

<sup>2</sup> [SB 5988](#), State of Washington 64th Legislature, 2015 Regular Session, p.8

<sup>3</sup> WSDOT, [2018 Corridor Capacity Report](#), p. 35.

**FIGURE 1-3. TRUCKS EXITING PORT OF TACOMA WAITING TO ACCESS I-5**



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.<sup>4</sup>

Recent studies have found that this traffic congestion in the Puget Sound costs commuters and truckers 34% in added travel time

and businesses \$49.8 million in lost productivity,<sup>5</sup> ranking Washington State amongst the top five states in the U.S. with six of the nation's top 100 freight bottlenecks.<sup>6</sup> This congestion has increased by 10% over the last eight years, causing businesses to lose over 30,000 hours a day in productivity.<sup>7</sup>

Indeed, the greater Seattle urban area is among the “worst traffic hotspots in America’s 25 most-congested cities,”<sup>8</sup> experiencing the highest traffic volumes in the State and the Pacific Northwest, with an increase of 6,600 average daily heavy trucks on I-5 from 2013 to 2016.<sup>9</sup> This makes the Seattle urban area the sixth worst traffic hotspot in the U.S. with drivers losing 138 hours and \$1,932 per year for a \$2.9 billion total cost of congestion in 2018.<sup>10</sup>

## 2 Project Location

The Gateway Program is located in the Pacific Northwest region in Washington’s 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> Congressional Districts. Figure 1-1 shows how it provides “last mile” and system network connections to I-5, the West Coast’s economic lifeline, along with a connection to Interstate 90 (I-90) via SR 18 or I-405, serving the northern tier states.

The Gateway Program is among Washington’s most critical multimodal freight assets. SR 167 and SR 509 serve to transport NWSA international container exports and imports to locations in Washington and beyond. Cargo moving through the two ports flows to or from 41 different states, with Midwest states accounting for 73% of import/export flows.<sup>11</sup>

### 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 the missing four miles of SR 167 between its current terminus at SR 161 (Meridian Avenue) and I-5, plus a new two-mile highway connecting I-5 to the Port of Tacoma. The Project is wholly within Pierce County in the cities of Tacoma, Fife, Milton, Edgewood, and Puyallup, is predominantly within the Puyallup Tribe of Indians’ reservation boundaries, and in 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 188<sup>th</sup> Street to I-5, a new interchange for accessing Sea-Tac International Airport from the south at 28<sup>th</sup>/24<sup>th</sup> Avenue

<sup>4</sup> WSDOT, [2016 Annual Traffic Report](#), p. 42.

<sup>5</sup> Tomtom Traffic Index, [Seattle](#).

<sup>6</sup> American Transportation Research Institute, [2019 Top 100 Truck Bottlenecks Brochure](#).

<sup>7</sup> Business Insider, [“Seattle Businesses Lose \\$49.8M Annually to Traffic,”](#) December 13, 2017.

<sup>8</sup> INRIX Research, [2018 Global Traffic Scorecard](#), p. 9.

<sup>9</sup> WSDOT, [2016 Annual Traffic Report](#), (MP 138.04, 11,000 increase in ADT, and 3% increase in truck percentages).

<sup>10</sup> INRIX Research, [2018 Global Traffic Scorecard](#), p. 9.

<sup>11</sup> Martin Associates, [Northwest Seaport Alliance Economic Impact Study](#), 2013.

South, 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.<sup>12</sup>

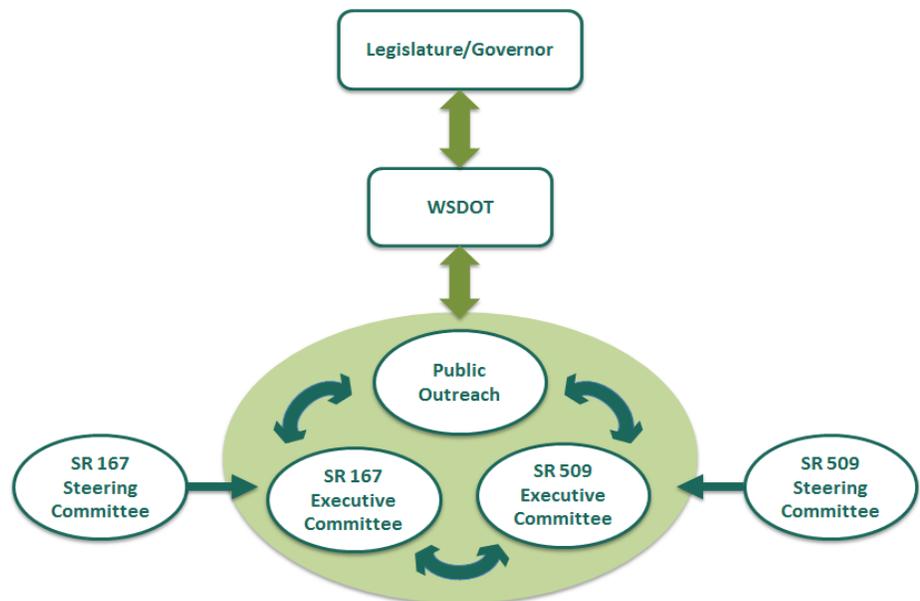
### 3 Project Parties

WSDOT (DUNS: 8088839950000) serves as the sponsoring agency and is responsible for delivery of the Gateway Program, which represents a broad, united coalition of funding partners and project stakeholders. This coalition of fourteen cities, two counties and two port districts has, over the past two decades, been instrumental in advancing the Gateway Program.

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 **Attachment 3 - Appendix B**. Local jurisdictions and businesses provided letters, in addition to Statewide and regional organizations, including Governor Jay Inslee, State Senate and House Transportation Committee Chairs, the Washington State Transportation Commission, the Washington Freight Mobility Strategic Investment Board, the Great Northern Corridor Coalition, the Washington State Tree Fruit Association, the Washington State Potato Commission, the Washington Trucking Association, and the NWSA.

The SR 167 and SR 509 Executive and Steering Committees partner with WSDOT to advise the agency on policy and design decisions. Figure 3-1 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 representatives from the business and freight community. Documents presented at Executive and Steering Committee meetings, as well as meeting summaries, are available on the SR 167 and SR 509 websites.

FIGURE 3-1. PUGET SOUND GATEWAY PROGRAM DECISION-MAKING PROCESS



<sup>12</sup> <https://www.transportation.gov/buildamerica/infra/grants/urbanized-area>

## 4 Grant Funds, Sources and Uses of Project Funds

The requested \$89.7 million in federal INFRA grant funds would comprise 4.7% of future eligible costs, closing the gap in the Gateway Program’s \$1.95 billion plan in year of expenditure (YOE) dollars (Table 4-1).

**TABLE 4-1. GATEWAY PROGRAM COST SUMMARY**

Cost Category	Previously Incurred Costs	Future Eligible Costs	Total (YOE\$)
Prelim. Engineering & Design	\$23.8 M	\$95.7 M	\$119.5 M
Right-of-Way	\$26.9 M	\$151.1 M	\$178.0 M
Construction	\$3.5 M	\$1,650.3 M	\$1,653.8 M
<b>TOTAL</b>	<b>\$54.2 M (3%)</b>	<b>\$1,897.1 M (97%)</b>	<b>\$1,951.3 M</b>

Combined with \$8 million in locally procured federal funding awarded by the PSRC, total federal funding including INFRA would total \$97.7 million or 5%, matching 95% in non-federal sources.

Through the CWTFP, the Legislature has provided WSDOT \$1.566 billion in new state funds, coupling this contribution to requirements that \$180 million come from leveraging future toll revenues and \$130 million take the form of local stakeholder contributions. A [Local Funding and Phasing Memorandum of Understanding](#) (MOU) executed in June 2018 stipulates that \$20 million of the \$130 million local contribution is to be sourced from a national competitive federal grant program and is included as part of the INFRA grant request. In addition, the program has received \$6.1 million in other existing state funds. In total, the Gateway Program has \$1.86 billion available for development and construction out of the \$1.95 billion program, leaving a funding gap of about \$90 million.

Receipt of a \$89.7 million INFRA grant would provide for the following beneficial outcomes:

- **Closes the funding gap** — 95% of the Gateway Program funding is in place, demonstrating that WSDOT and local partners have substantial “skin in the game,” completing these “missing link” projects.
- **Accelerates program delivery** — \$89.7 million in grant funds supplements the legislative fixed disbursement schedule for the \$1.566 billion in CWTFP state funds, allowing SR 509 to be operational three years earlier, and SR 167 to be operational two years earlier.
- **Promotes inflation cost savings** — The schedule acceleration, including early ROW purchases and the advancement of local and toll funding, generates construction cost inflation savings of over \$30 million, reducing an initial funding gap of \$120.4 million down to the grant request of \$89.7 million.
- **Requires only minimal federal assistance** — The requested \$89.7 million represents 92% of the federal dollars in the Gateway Program. Total requested federal funding, at 5%, is well below thresholds.

### 4.1 Previously Incurred Expenses

For purposes of this INFRA grant application, the period of previously incurred project costs is defined as from state fiscal year (FY) 2016<sup>13</sup> through December 31, 2018 (mid-FY 2019). FY 2016 marks the date at which the legislature’s CWTFP came into effect and provides a clear dividing line between the new combined Gateway Program delivery and the planning, environmental, and ROW acquisition activities that were previously completed separately by each corridor.

Between July 1, 2015 and December 31, 2018, Gateway Program expenditures totaled \$54.2 million, distributed as \$23.8 million for Preliminary Engineering (PE) activities, including the re-evaluation of previously-completed environmental reviews, \$26.9 million for right-of-way (ROW) acquisition, and \$3.5 million for construction (Figure 4-1).

<sup>13</sup> State fiscal year 2016 runs from July 1, 2015 through June 30, 2016.

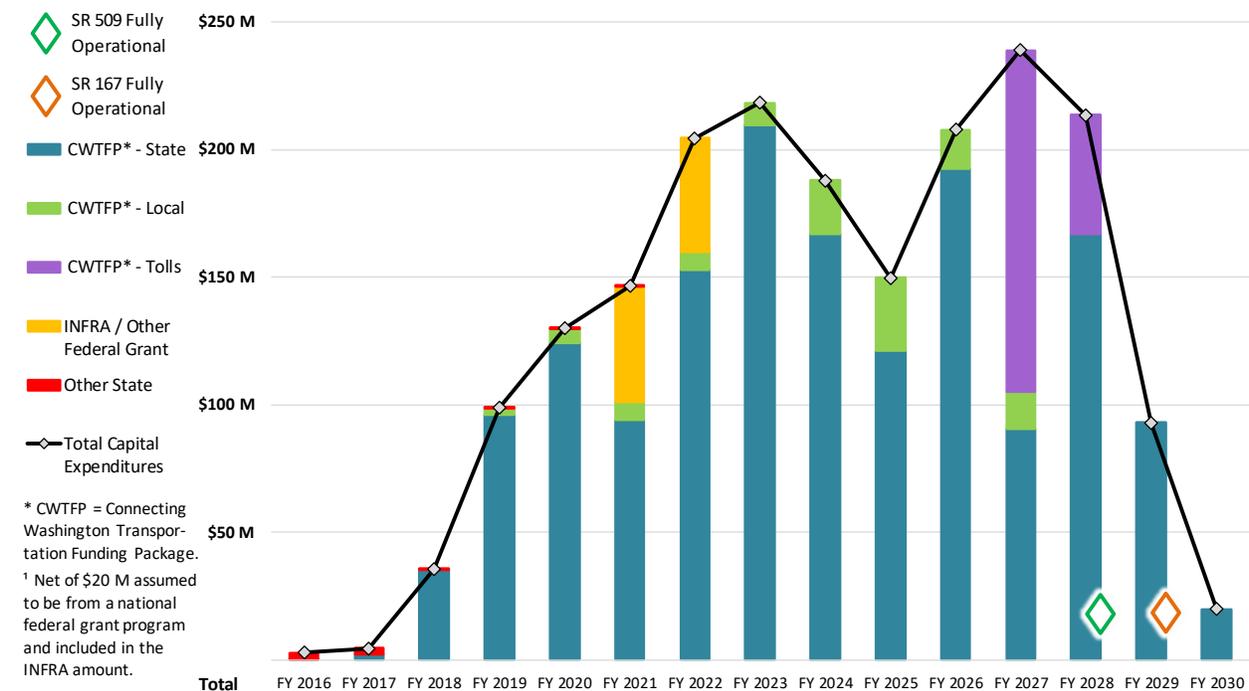
## 4.2 Future Eligible Costs

As shown in Figure 4-1, future eligible estimated costs for pre-construction and construction activities total \$1.951 billion in YOE dollars — which include contingencies for cost, schedule, and escalation risks — as \$120 million for PE, \$178 million for ROW acquisition, and \$1.654 billion for construction. Of the Program total, approximately 49% is for improvements on SR 509 and I-5, with the remaining 51% for SR 167.

## 4.3 Budget and Spending Plan

The Gateway Program has \$1.862 billion in secured funding sources with \$1.566 billion in CWTFP state funds available in fixed amounts for each two-year biennium through the biennium ending in FY 2031. WSDOT has optimized the phasing and cash flow shown in Figure 4-1, which summarizes the financial plan's projected annual sources and uses of funds for the \$1.951 billion Gateway Program, to accelerate construction and minimize the grant amount requested, subject to other funding constraints.

**FIGURE 4-1. PUGET SOUND GATEWAY PROGRAM PROJECTED SOURCES AND USES OF FUNDS (YOE DOLLARS)**



### SOURCES OF FUNDS

CWTFP* - State	\$1,565.5 M	0.2 M	2.1 M	35.3 M	95.9 M	124.5 M	94.2 M	152.8 M	209.4 M	166.7 M	121.4 M	192.6 M	90.4 M	167.1 M	92.9 M	20.0 M
CWTFP* - Local <sup>1</sup>	\$110.0 M	-	-	-	2.5 M	5.2 M	7.1 M	6.9 M	9.0 M	21.1 M	28.2 M	15.0 M	15.0 M	-	-	-
CWTFP* - Tolls	\$180.0 M	-	-	-	-	-	-	-	-	-	-	-	133.6 M	46.4 M	-	-
Other State	\$6.1 M	2.6 M	2.5 M	0.3 M	0.3 M	0.2 M	0.2 M	-	-	-	-	-	-	-	-	-
INFRA Grant	\$89.7 M	-	-	-	-	-	45.0 M	44.7 M	-	-	-	-	-	-	-	-
<b>Total Sources</b>	<b>\$1,951.3 M</b>	<b>2.8 M</b>	<b>4.7 M</b>	<b>35.6 M</b>	<b>98.7 M</b>	<b>129.8 M</b>	<b>146.5 M</b>	<b>204.4 M</b>	<b>218.4 M</b>	<b>187.8 M</b>	<b>149.6 M</b>	<b>207.6 M</b>	<b>238.9 M</b>	<b>213.6 M</b>	<b>92.9 M</b>	<b>20.0 M</b>

### USES OF FUNDS

Prelim. Eng.	\$119.5 M	2.7 M	4.5 M	11.7 M	14.1 M	24.9 M	10.7 M	5.7 M	14.4 M	13.6 M	7.1 M	2.1 M	2.1 M	2.1 M	3.6 M	-
Right-of-Way	\$178.0 M	0.1 M	0.1 M	20.3 M	84.6 M	62.7 M	10.2 M	-	-	-	-	-	-	-	-	-
Construction	\$1,653.8 M	0.0 M	0.1 M	3.6 M	-	42.2 M	125.6 M	198.7 M	203.9 M	174.1 M	142.5 M	205.5 M	236.8 M	211.4 M	89.2 M	20.0 M
<b>Total Uses</b>	<b>\$1,951.3 M</b>	<b>2.8 M</b>	<b>4.7 M</b>	<b>35.6 M</b>	<b>98.7 M</b>	<b>129.8 M</b>	<b>146.5 M</b>	<b>204.4 M</b>	<b>218.4 M</b>	<b>187.8 M</b>	<b>149.6 M</b>	<b>207.6 M</b>	<b>238.9 M</b>	<b>213.6 M</b>	<b>92.9 M</b>	<b>20.0 M</b>

## 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 million. The toll authorization bill is expected to be passed by the Legislature this year, with these highways becoming the

sixth and seventh tolled facilities in the state.<sup>14</sup> An updated toll traffic and revenue study was completed in 2018, which confirmed the feasibility of tolls to support the \$180 million identified by the Legislature. WSDOT has already completed two probabilistic risk-based reviews to verify accuracy and reasonableness of current costs and schedules and to identify project uncertainties. WSDOT's Cost Estimation Validation Process (CEVP)<sup>®</sup> 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.

## 5 Merit Criteria

### 5.1 Support for National and Regional Economic Vitality

The Gateway Program will complete two missing links that connect the state's two largest marine ports and largest airport with I-5, and ultimately, I-90, thereby relieving "last mile" congestion for the \$9 billion in annual freight exports arriving from eastern Washington and northern tier states (Figure 5-1).<sup>15</sup> The Gateway Program will also better serve key distribution centers in King and Pierce counties, relieving congestion on other roads.

The movement of cargo through the Puget Sound offers enormous economic benefit to the region and nation. Evidence of the state's position as the second-most trade-dependent state, with exports as a key driver of job growth and economic prosperity, include:

- Sea-Tac International Airport is the ninth busiest airport by passenger volume in North America and the fifth largest airport for international cargo on the West Coast (excluding Alaska), moving 432,315 metric tons (MT) of cargo in 2018, a 18% increase from 2016.<sup>16</sup>
- Sea-Tac exports a variety of goods harvested or manufactured in rural Washington State, including cherries (24,537 MT or 28% of all exports), seafood (9,775 MT or 11% of all exports), industrial machinery and computers (10,780 MT or 12% of all exports), aerospace components (3,062 MT or 3% of all exports), and electric machinery (6,465 MT or 7% of all exports).<sup>17</sup>
- Growth in air freight in the State of Washington is forecasted to increase by 1.9% annually from 2014 to 2034, reaching 746,281 MT by 2034, the majority of which passes through Sea-Tac.<sup>18</sup> In 2017, Sea-Tac handled 425,900 MT of goods shipped by plane.
- In 2016, the NWSA exported \$16.6 billion in goods harvested or manufactured in rural Washington State to international destinations. It is the fourth largest container gateway in the nation and second on the U.S. West Coast serving Asia and major distribution points in the Midwest, Ohio Valley, and East Coast.<sup>19</sup>

#### ECONOMIC IMPACT OF SEA-TAC INTERNATIONAL AIRPORT AND THE NORTHWEST SEAPORT ALLIANCE

##### *Northwest Seaport Alliance*

- Supports **48,000 direct, induced and indirect jobs**, nearly 19,000 (40%) of which are direct jobs generated by Port marine terminal activities
- Generates **\$4.3 B** in total economic impact
- Produces **\$380 M** in state/local taxes

##### *Sea-Tac International Airport*

- Supports **171,800 direct, induced, and indirect jobs**, 109,900 (64%) of which are direct jobs generated by the airport
- Generates **\$16.3 B** in regional economic impact, of which \$2.8 B is received as direct income by direct job holders
- Produces **\$565 M** in state/local taxes



In 2017 the NWSA handled over 210,000 tons of breakbulk cargo. Leading exports include heavy machinery from such manufacturers as John Deere and Caterpillar.



<sup>14</sup> Historically, the Legislature has authorized tolling a few years before tolling is needed.

<sup>15</sup> NWSA, [Delivering the Goods for Pacific Northwest Exporters](#), p. 3.

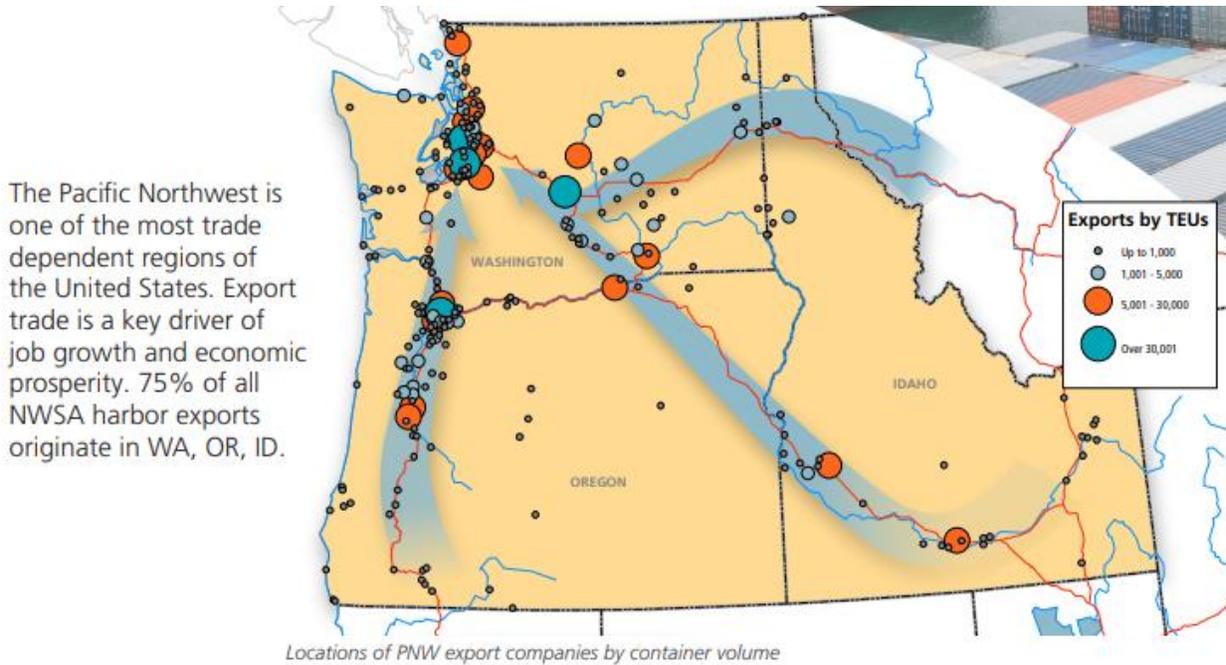
<sup>16</sup> Airports Council International, 2018 Annual World Airport Traffic Report, September 2018.

<sup>17</sup> <https://www.portseattle.org/page/cargo-statistics>

<sup>18</sup> WSDOT, [2017 Washington State Freight System Plan](#), December 2017 pp. 33-34.

<sup>19</sup> <https://www.nwseaportalliance.com/about> & <https://www.nwseaportalliance.com/faqs?answer=514#answer-514>

**FIGURE 5-1. FLOW OF EXPORTS FROM EASTERN WA AND NORTHERN TIER STATES TO NWSA**



Source: NWSA, [https://www.nwseaportalliance.com/sites/default/files/NWSA\\_ExportGateway.pdf](https://www.nwseaportalliance.com/sites/default/files/NWSA_ExportGateway.pdf)

### Benefit-Cost Analysis

The accompanying benefit-cost analysis shows the Gateway Program to be highly cost-effective, as shown in Table 5-1 and detailed in **Attachment 2 - Appendix A**. FY 2030, which represents both the final year of construction expenditures and the first full year of operational benefits, was set as the start year for both 20- and 30-year post-construction evaluation periods. At a 7% real discount rate, the Gateway Program achieves a benefit-cost ratio (BCR) of 3.59 under a 20-year post-completion evaluation period, with individual corridor BCRs of 3.18 for SR 509 and 3.79 for SR 167. The net benefits are even more robust under a 30-year post-completion evaluation period, which may be more appropriate for evaluating long-lived assets such as these two new roadway segments that complete each corridor. At 30 years, a higher growth rate in benefits gives SR 509 a higher BCR at 5.76, compared with 5.06 for SR 167; the Program's 30-year BCR is 5.32.

**TABLE 5-1. BENEFIT-COST ANALYSIS RESULTS (7% REAL DISCOUNT RATE, 20- AND 30-YEAR EVALUATION PERIODS)**

Case	20-Years (FYs 2030-49)		30-Years (FYs 2030-59)	
	Net Present Value (2017\$)	Benefit-Cost Ratio	Net Present Value (2017\$)	Benefit-Cost Ratio
SR 509 Completion Project	\$1.11 B	3.18	\$2.43 B	5.76
SR 167 Completion Project	\$1.44 B	3.79	\$2.10 B	5.06
<b>Program Total</b>	<b>\$2.66 B</b>	<b>3.59</b>	<b>\$4.45 B</b>	<b>5.32</b>

Source: WSP Analysis; corridor NPV values may not sum to program totals due to differences interpolation for the program analysis.

The greatest benefits are related to travel time savings and cost savings for drivers and passengers using SR 167, SR 509, I-5, and the adjacent regional road network. Benefits are also generated by reductions in vehicle-miles traveled for automobile and truck users, including reduced emissions, reduced vehicle operating costs, reduced vehicular crashes, and reduced pavement damage and noise impacts.

### ***Achieves significant reductions in traffic fatalities & serious injuries on the surface transportation system***

The overall safety benefits of the Gateway Program include estimated reductions in fatalities and injuries, as well as a reduction in other crash-related property damage costs resulting directly from the project. The Gateway Program will provide completed SR 167 and SR 509 limited access facilities that will attract a significant number of trips away from congested facilities with high numbers of conflict points. Drivers will experience safer conditions due to the lower level of congestion and the inherent safer environment of a limited access facility as compared to arterials with at-grade intersections.

Without the SR 167 Completion Project, trucks travelling to and from the Port of Tacoma and the distribution centers in the region and eastern Washington's agricultural region will continue to use local streets (North Meridian and River Road, Valley Avenue East and 54th Avenue East) to access the Port (Figure 5-2). Trucks are involved in 70% of all crashes in the vicinity of the Port of Tacoma, nearly twice the countywide average. Accident rates on Puyallup River Road, the current non-highway 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.<sup>20</sup>

**FIGURE 5-2. AUGUST 2018 CRASH SCENE AT RIVER ROAD (SR 167 LOCAL ROAD) AND PIONEER WAY**



Source: Tacoma Firefighters

A five-year analysis (2013-2017) found a total of 1,007 crashes on I-5 between Mileposts 136.05 to 138.80 near the SR 167 alignment, with the predominant accident type being rear end collisions (55%). These crashes are due to the close proximity of the I-5 southbound off-ramp terminal to the intersection of 54<sup>th</sup> Avenue and SR 99, coupled with the high volumes of traffic on both 54<sup>th</sup> Avenue and SR 99. The predominantly truck-filled queue on the southbound off-ramp backs up onto mainline I-5 nearly daily, causing many rear-end collisions because the other four lanes of traffic are moving at freeway speeds while the far-right lane is stopped. The SR 167 Completion Project will provide a new southbound off-ramp from I-5 that will serve as a direct connection onto the project's new Port of Tacoma access road allowing for a free flow of traffic from southbound I-5 onto the access road and to the Port of Tacoma.

From 2013 to 2017, a total of 289 accidents 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 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. 200<sup>th</sup> St., which experienced a total of 75 accidents between the I-5 interchange and 28<sup>th</sup> Avenue S. for the 2013-2017 analysis period.

### ***Eliminates bottlenecks in the freight supply chain***

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

<sup>20</sup> WSDOT, [SR 167 Puyallup to SR 509 Tier II FEIS](#), Introduction, p. 1-2.

area.<sup>21</sup> At this rate, truck traffic is increasing at a faster rate 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 have increased by 44% from 15,040 trucks in 2013 to 21,670 trucks in 2016.<sup>22</sup> This situation is expected to worsen due to a 35% projected rise in truck freight tonnage moved on the statewide roadway network from 281.2 million tons in 2015 to 379.4 million tons in 2035.<sup>23</sup>

Many warehousing and distribution facilities are moving farther from the central Puget Sound region to available land in neighboring counties. An estimated 44% of regional truck trips generated by the NWSA are destined for these warehouses and distribution centers in the SR 167 corridor.<sup>24</sup> By 2025, the warehouses in this region are expected to see an average daily increase of 3,210 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 (Figure 5-3). 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 9% by 2030.<sup>25</sup> 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 due to an event or incident.



- Transports 50% of their cargo via the NWSA, approx. 5,000 TEU/year
- Uses Kent valley facility for warehouse and distribution

**FIGURE 5-3. CONGESTION AT CURRENT SR 167 TERMINUS**



The SR 509 Completion Project will eliminate freight highway bottlenecks and accommodate a southern access point to Sea-Tac International Airport, which will ease congestion on I-5 and improve service between industrial districts that rely on the efficient movement of goods in the region. It will also decrease congestion on other north/south freeways and arterial corridors within the Project area, including SR 599, SR 518, SR 99 (International Boulevard) 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 that 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.<sup>26</sup>

<sup>21</sup> WSDOT, [SR 509: Corridor Completion/I-5/South Access Road FEIS](#), p. 1-12.

<sup>22</sup> WSDOT, [Gray Notebook #62](#), p. 40.

<sup>23</sup> WSDOT, 2017 Washington State Freight System Plan, p. 31.

<sup>24</sup> Berk & Associates, *An Economic Assessment of the SR 167 Extension Project*, April 2007, pp. 3, 24.

<sup>25</sup> *Ibid.*, p. 14.

<sup>26</sup> 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.

The Gateway Program, by including variable-priced, open road tolling, will provide sustainable capacity for efficient operations of all lanes of the new SR 167 and SR 509 segments, which will yield consistent and reliable travel times in both corridors.

**Ensure or restore the good condition of infrastructure that supports commerce & economic growth**

The Gateway Program provides new limited access highways where none currently exist. The SR 167 and SR 509 Completion Projects are specifically intended to support commerce and economic growth across the State of Washington. Washington is an economic gateway state, connecting U.S. and Asian markets, and Alaska to the lower 48 states. Imports to Washington support U.S. manufacturers and provide goods to consumers. Agricultural exports support family farms throughout the Pacific Northwest and Midwest.

The marine industry has long been key to the state economy, located in rural and urban communities around the Puget Sound, including NWSA, growing at 6.4% per year.<sup>27</sup> The industry generates 146,000 direct, indirect, and induced jobs, offering well-paid jobs that average \$70,800 annually and total over \$4.7 billion in wages. It contributes more than \$21.4 billion in gross business income and \$30 billion in economic activity.

The State of Washington’s \$49 billion agriculture and food-manufacturing sector is another cornerstone of its economy primarily in rural communities in eastern Washington.<sup>28</sup> The industry employs approximately 140,000 people and is an economic pillar of many rural communities. More than \$15.1 billion in food and agricultural products were exported through NWSA ports in 2013, the third largest total for any state in the U.S. The state’s apple industry accounts for 70% of U.S. production. Other top commodities include wheat, milk, and potatoes. These products are relatively low-value per ton commodities for which lower transportation costs would provide a relatively high value per ton benefit.

NWSA and Sea-Tac International Airport are the largest exporters of refrigerated cargo in the United States and are critical gateways for fruit, vegetables, and other perishable commodities to Asian and International markets:

- Largest exporter of apples (over 26,600 TEUs valued at over \$413 million)
- Primary exporter of Pacific Northwest cherries (totaling 24,543 MT in 2017)

Freight-dependent industries provide nearly half of all jobs in Washington.<sup>29</sup> They depend on an effective and efficient freight highway system but are currently hindered by congestion and lack of alternatives to I-5 to reach the NWSA facilities and Sea-Tac International Airport. Table 5-2 displays total U.S. exports that moved through the NWSA and Sea-Tac in 2015. Over 75% of these exports were transported from U.S. origins by truck. While most volumes originated from Washington, other origin states include Oregon, California, Minnesota, Idaho, Nebraska, and Iowa.

**TABLE 5-2. U.S. TRADE THROUGH THE SEATTLE REGION BY MODE IN 2015 (THOUSANDS OF TONS)**

	Exports		Imports	
	Total	Truck	Total	Truck
<b>All States</b>	35,425	26,718	20,945	7,613
<b>Washington</b>	27,708	23,446	7,160	7,160
<b>Oregon</b>	1,411	1,310	227	227

Source: Federal Highway Administration Freight Analysis Framework (FAF)

By providing new infrastructure, the Gateway Program also stimulates commerce within local jurisdictions directly impacted by the SR 167 and SR 509 Completion Projects. In fact, municipalities are projected to see increased sales tax revenues as a result of the Gateway Program. This includes \$840,000 in King County, \$180,000 in Des Moines, \$140,000 in Kent, and \$1.7 million in SeaTac due to the SR 509

<sup>27</sup> WSDOT, 2017 Washington State Freight System Plan, p. 4.

<sup>28</sup> Ibid., p. 6.

<sup>29</sup> Ibid.

Completion Project. Similarly, the SR 167 Completion Project will generate \$2.1 million for Pierce County, \$95,000 for Edgewood, \$800,000 for Fife, and \$966,000 for Puyallup.<sup>30</sup>

### ***Sustain or Advance National or Regional Economic Development in Areas of Need***

While the Puget Sound region economy is robust, rapid growth in housing costs have caused many workers to move further out away from job centers, including into rural areas of King and Pierce Counties. The ability of the NWSA and Sea-Tac International Airport to grow, support more jobs, and provide a way for workers to commute to these jobs is directly tied to the support of our road infrastructure.

Completed SR 167 and SR 509 highways would fuel job growth. The NWSA estimates its 2017 economic impact to the State's economy resulted in 58,400 direct, indirect and induced jobs with a payroll of more than \$4 billion and over \$12 billion in business output.<sup>31</sup> However, these port projects and their associated employment impacts is contingent upon the Gateway investments to help move freight and workers to and from the ports.

An analysis of the short-term and long-term economic benefits of the Gateway highway project was recently undertaken by WSDOT economists using the nationally recognized Regional Economic Models Incorporated (REMI) TranSight software. During the construction period through FY 2030, the Gateway Program is projected to support an average of 2,354 regional jobs per year, produce \$225 million in gross regional product, and yield \$242 million in disposable personal income. Over the first 15 years, post-construction, the enhanced mobility afforded by the Gateway Program's improvements would generate and maintain an average of 2,491 additional regional jobs, produce an average of \$264 million per year in additional gross regional product, and yield an average of \$327 million in disposable personal income, relative to the "no build" case.

### ***Reduce barriers separating workers from employment centers***

Congestion creates a barrier separating workers residing in rural and suburban areas of King and Pierce Counties with more affordable housing to job centers in the Puget Sound region's urban areas. The economy in the Seattle area is booming with employment growing at a higher rate than the nation (see Figure 5-4) driven by the information and manufacturing sectors<sup>32</sup> and further growth is expected.

At the same time, housing prices and population growth have soared near these jobs, driving a booming housing market in more affordable, but outlying counties. From 2013 to 2017, 285,900 people moved to Pierce, King, Kitsap and Snohomish counties, but only 82,521 housing units were built.<sup>33</sup> Outlying areas have filled with new residents because regional home construction near employment centers is not keeping up with demand.

Within the project corridor, new industrial and manufacturing developments are being planned and constructed, including an 87-acre business park in Des Moines that will support 3,500 aviation and light industrial jobs.

The SR 509 Completion Project will ease workers' ability to commute to and from downtown Seattle and Sea-Tac International Airport by providing needed capacity. It will add a second route that commuters could use to bypass congestion on I-5 and gain access to businesses in south Seattle and west of I-5. The SR 509 Completion Project also provides the Kent valley with direct access to I-5, Sea-Tac, and the Port of Seattle with the new Veterans Drive connection, which will provide needed redundancy to SR 516 access to I-5 from

<sup>30</sup> WSDOT, [Puget Sound Gateway Program: Benefits of Program Acceleration](#), September 2018, p. 39.

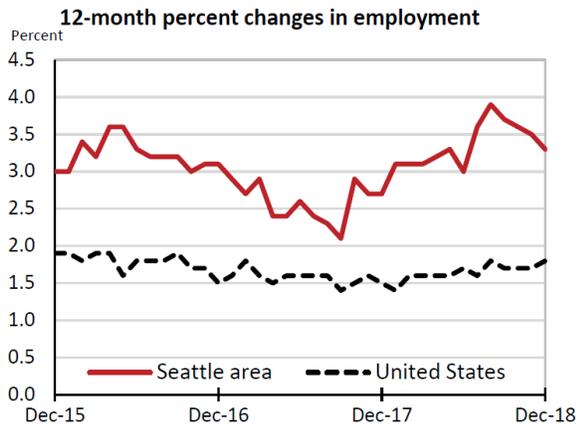
<sup>31</sup> NWSA, [The NWSA Marine Cargo Economic Impacts](#), January 2019, p. 16.

<sup>32</sup> U.S. Bureau of Labor Statistics, [Seattle Area Economic Summary](#), updated January 31, 2019.

<sup>33</sup> Ibid.

the Kent valley. In addition, it connects the region from the south to Sea-Tac International Airport, which directly supports an estimated 87,300 jobs,<sup>34</sup> and the southern end of the [SeaTac Regional Growth Center](#), one of 29 such centers designated by the PSRC as focal points for planned growth, economic development and transportation infrastructure investments.

**FIGURE 5-4. SEATTLE AREA EMPLOYMENT**



Source: U.S. BLS, Current Employment Statistics.

Seattle area employment (numbers in thousands)	Dec. 2018	Change from Dec. 2017 to Dec. 2018	
		Number	Percent
Total nonfarm	2,103.1	67.3	3.3
Mining and logging	1.1	0.0	0.0
Construction	129.3	4.3	3.4
Manufacturing	183.8	9.4	5.4
Trade, transportation, and utilities	417.8	18.0	4.5
Information	121.7	8.1	7.1
Financial activities	103.3	2.2	2.2
Professional and business services	304.8	14.1	4.9
Education and health services	278.5	6.7	2.5
Leisure and hospitality	207.6	4.8	2.4
Other services	74.6	1.5	2.1
Government	280.6	-1.8	-0.6

Source: U.S. BLS, Current Employment Statistics.

The SR 167 Completion Project will provide a direct link from eastern Pierce County to the economic heart of Tacoma and job opportunities there that are growing at 3% annually (2015). The new limited access highway, approximately six miles in length, will provide eastern Pierce County residents relief from their current commute that takes them from SR 410 and SR 162 to a merge onto SR 167 for a mile at which point the highway ends. They will no longer be forced to exit the highway and travel local streets through multiple signalized intersections at low speeds before reaching downtown Tacoma.

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 over \$3 billion (present-value discounted) in travel time savings over the 20-year operating period following completion of the Gateway Program. This economic benefit is the result of an estimated 690 million person-hours of travel time savings over the same period. For a 30-year operating period post-completion, time savings increases to 1.5 billion person-hours saved, with a discounted present value of \$4.74 billion.

## 5.2 Leveraging of Federal Funding

WSDOT is requesting \$89.7 million in INFRA grant funds to fill the funding gap in the Gateway Program. To minimize the size of the INFRA grant request, WSDOT has maximized the other sources of Gateway Program funding with \$1.86 billion in state, toll, and local dollars, and optimized the phasing (subject to the Legislature’s constraints in providing state funds) to realize over \$30 million in inflation savings. The requested INFRA grant would match **95% in other funding sources**, bridge the current funding gap, and accelerate the Gateway Program’s schedule to complete the SR 509 corridor three years earlier and the SR 167 corridor two years earlier. There are no constraints limiting the use of non-federal funding contributions, other than timing constraints restricting the advancement of state funds noted previously.

<sup>34</sup> <https://www.portseattle.org/news/2017-was-record-breaking-year-sea-tac-airport>

## 5.3 Potential for Innovation

### 5.3.1 Innovation Area #1: Technology

#### *Variable Tolling to Manage Congestion*

Open road tolling of **all** lanes with tolls 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 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. 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, the latter including toll bills by mail for those without accounts. Variable rate, all-electronic tolling helps to minimize stop-and-go traffic and accompanying rear-end crashes, eliminates toll plaza weaving and congestion, and reduces vehicle emissions. By diverting traffic from I-5 and adjacent local roads, WSDOT will be able to improve road safety in the entire network.

WSDOT has successfully deployed the innovative all-electronic, open road variable tolling on the SR 520 bridge, where congestion is managed and revenue generated to support vital mobility needs (Figure 5-5). Tolls vary across 12 different time periods on weekdays and six on weekends. Later this year, WSDOT will add variable tolling to all lanes of the new SR 99 tunnel in Seattle. The same innovative and proven toll technologies will be deployed on the Gateway corridors, which will provide consistent and reliable trips for travelers. This will benefit trucks serving the Ports of Tacoma and Seattle and all drivers accessing Sea-Tac International Airport from the south via the new SR 509 extension.

**FIGURE 5-5. VARIABLE TOLLING ON WSDOT'S SR 520**



#### *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, WSDOT reduces incident investigation and clean up time. This fleet of specially equipped tow trucks and trained responders sets up needed traffic controls, and then clears most incidents 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 those vehicles 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 5-6. WSDOT TRAFFIC MANAGEMENT CENTER DEPLOYS IRT**



### 5.3.2 Innovation Area #2: Project Delivery

In 2018, at the direction of the State Legislature WSDOT undertook an analysis of cost savings, economic benefits, and schedule advancement that would occur under three accelerated scenarios. The [Puget Sound Gateway Program: Benefits of Program Acceleration Report](#) (September 2018) provides the results of this analysis, exploring financing and delivery options for completing the Gateway Program ahead of the current schedule in order to deliver the benefits sooner. The report found that accelerating the delivery timeline results in the following financial and economic benefits as shown in Table 5-3:

**TABLE 5-3. ECONOMIC BENEFITS OF ACCELERATING GATEWAY PROGRAM DELIVERY**

Delivery Acceleration	Inflation Cost Savings	Person-Hours Saved	VMT Saved	Present Value of Net Benefits
Modest (2 years)	\$28 M	22 M	179 M	\$179 M
Medium (3 years)	\$43 M	33 M	271 M	\$275 M
Maximum (up to 5.5 years)	\$80 M	65 M	581 M	\$608 M

Receipt of the requested INFRA grant enables modest delivery acceleration, with SR 509 delivered three years earlier and SR 167 two years earlier. Further program acceleration (medium or maximum cases) requires action by the Washington State Legislature in addition to a successful INFRA grant application.<sup>35</sup>

#### Contracting & Procurement

The Gateway Program will be delivered through **Design-Build** (DB, EDC-2) procurement. Combined with **Lump Sum Bidding**, DB is intended to establish early price knowledge and certainty. WSDOT will implement 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 is also including **Alternative Technical Concepts** (EDC-2) into the DB procurement process to promote contractor and designer innovations, as well as savings and benefits to WSDOT from successful innovations. Further, WSDOT is implementing a stipend program where it will acquire the rights to bidders' innovative ideas and potentially include unsuccessful bidders' innovations in the successful bidder's contract.

<sup>35</sup> See [House Bill 2132](#); the intent of this act is to expedite the delivery of the Puget Sound Gateway Program.

To support the Best Value Procurement with Lump Sum Bidding, WSDOT is implementing its [Cost Estimation Validation Process \(CEVP\)<sup>®</sup>](#), which aligns with FHWA Cost Estimate Review (CER) guidance. As such, WSDOT has already completed two probabilistic risk-based reviews to verify accuracy and reasonableness of current costs and schedules and identify and incorporate project uncertainties. WSDOT's CEVP<sup>®</sup> includes previously-incurred expenses in the total project cost results and will continue to be updated at key points during project development.

### **Environmental Requirements**

The Gateway Program has completed the National Environmental Policy Act (NEPA) re-evaluation process (Q4 2018 for the SR 167 Completion Project and Q1 2018 for the SR 509 Completion Project). Beyond NEPA, the State of Washington's process for environmental review used by the Gateway Program provides a potential model for environmental review and permitting from which other large projects may benefit.

The State Legislature mandates WSDOT to "streamline the permitting process by developing and maintaining positive relationships with the regulatory agencies and the Indian tribes."<sup>36</sup> 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."<sup>37</sup> 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]."<sup>38</sup>

WSDOT implemented the laws through standard practices utilized across the agency. The State's [Joint Aquatic Resources Permit Application \(JARPA\)](#) 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 and National Oceanic and Atmospheric Administration) dedicated to expediting portions of the environmental review for WSDOT transportation projects and reviewing and 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). As provided above, the Gateway Program will be delivered using **Design-Build** contracts. In addition, 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 a **Practical Design** approach, focusing on providing maximum benefit to the transportation system, promoting freedom to innovate and developing tailored

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<sup>36</sup> [RCW, § 47.85.020](#)

<sup>37</sup> [RCW, § 47.85.005](#)

<sup>38</sup> [RCW, § 47.85.020](#)

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 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 is currently undertaking **data-driven safety analysis** (DDSA) as part of its interchange justification report update (IJR, now an Access Revision Report) and design analysis to reduce crashes. Through this process, the Gateway Program will validate the initial macro traffic model. Information generated from the model will be used to determine optimal final design criteria, 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 design will include a **diverging diamond interchange** (DDI) at the SR 167 / I-5 interchange. DDIs improve safety by decreasing conflict points, reducing wait times at signals, increasing traffic flow and moving more people in higher-populated areas. Both SR 167 and SR 509 Completion Projects will complete **intersection control evaluations** (ICE) for each intersection impacted by the proposed construction. ICE considers accident history (from DDSA data), intersection operation, types of vehicles, and capital and lifecycle costs. Where the evaluation determines appropriate, the project is incorporating [roundabouts](#) to improve safety.

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 two tunnel structures under I-5. PBES will require shorter construction durations for the buried structures, significantly reducing impacts to the traveling public.

### 5.3.3 Innovation Area #3: Innovative Financing

The Gateway Program utilizes both innovative financing and benefits from a recent statewide transportation revenue package. As noted in Section 4, the Washington State Legislature intends for both the SR 509 and SR 167 new highway segments to be tolled in order to finance \$180 million of the Gateway Program cost. As a result, the tolls — which are direct project user fees — will pay for the debt service on the \$180 million of capital funding plus pay for all of the routine annual O&M costs and periodic R&R expenses indefinitely. In this way, tolling not only helps sustainably manage the new capacity to prevent congestion, but also pays for lifecycle costs. The utility of toll revenues to fund the Gateway Program was established through a series of studies for both corridors, including the 2013 [Puget Sound Gateway Project Funding and Phasing Study](#) and the 2018 [Puget Sound Gateway Program Traffic and Revenue Report](#) (Level II T&R Study). These studies validate the capacity for tolls to contribute \$180 million 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 11.9¢ motor fuel tax in the CWTFP. The Washington State Legislature approved the CWTFP in July 2015 as a 16-year, \$16 billion package of state-wide projects.<sup>39</sup> The majority of CWTFP funding is going to

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<sup>39</sup> <https://www.wsdot.wa.gov/construction-planning/funding/connecting-washington>

state highway capital, maintenance, operating, and preservation needs (\$10.8 billion), with more than 15% (\$1.566 billion) going to the Gateway Program, the most of any project in the CWTFP.<sup>40</sup> The CWTFP mandates that local stakeholders contribute \$130 million, of which \$20 million is assumed to be part of this INFRA grant request. Tying this large state contribution to \$110 million in local stakeholder contributions is an innovation for the State of Washington and has been memorialized in an [MOU](#) that engages the Ports of Seattle and Tacoma, King and Pierce Counties, and 14 local cities.

Finally, it should be noted that the legislature directed that the proceeds from the competitive sale of surplus land acquired in the 1970s (prior to revisions to the projects' alignments), will be deposited into the Gateway Program account rather than into the State's Transportation Fund.

## 5.4 Performance and Accountability

### *Description of the applicant's plan to address the full life-cycle costs associated with the project*

The BCA performed for the 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 \$1.16 billion in present value discounted 2017 dollars over a 20-year post-construction evaluation period, and \$1.18 billion over a 30-year post-construction period.

With Gateway Program acceleration afforded by an INFRA grant, tolling on SR 509 would begin in mid-FY 2025 with completion of the first stage, and continue as Stage 2 construction is completed, with full toll operations in place by mid-FY 2028. SR 167 follows a similar schedule one year later, and FY 2030 is the first full year of toll operations for both corridors. Potential gross toll revenues in FY 2030 are forecasted to be \$60.4 million per year, with \$30.1 million from SR 509 and \$30.3 million from SR 167.<sup>41</sup> Through FY 2059, projected gross toll revenue (adjusted for leakage and fees) would total \$2.8 billion.

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. Under pending toll authorization legislations, toll revenues would not only pay debt service on the toll bonds, but will also cover all of the routine facility and toll collection O&M costs as well as the periodic roadway and toll collection R&R costs.<sup>42</sup> Through FY 2049 (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 \$930 million in inflated YOY dollars. This increases to \$1.61 billion by FY 2059.

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 Moving Ahead for Progress in the 21st Century (MAP-21). Under the Fixing America Surface Transportation (FAST) Act, Washington is projected to receive on average \$718 million per year.<sup>43</sup> 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.

### *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, as shown in Table 5-4.

<sup>40</sup> [Second Engrossed Substitute SB 5988](#), State of Washington 64th Legislature, 2015 Regular Session, p. 8.

<sup>41</sup> Based on Stantec's 2018 Level II T&R for WSDOT, with adjustments to ramp-up factors to align with the proposed program acceleration.

<sup>42</sup> See [House Bill 1899](#) and [Senate Bill 5825](#); historically, the Legislature has authorized tolling for each project several years in advance of toll implementation.

<sup>43</sup> <https://www.fhwa.dot.gov/fastact/estfy20162020apports.pdf>

TABLE 5-4. PERFORMANCE AND ACCOUNTABILITY FRAMEWORK

Proposed Performance and Accountability Metrics for INFRA Grant Availability		
Triggering Event	Condition	INFRA Program Goals Supported
(1) Meeting specific construction start and completion dates	<p>Issue RFQ for SR 509 Stage 1 (I-5 to SeaTac) Design-Build contract by Q4 2019 and RFQ for SR 167 Stage 1 (Port of Tacoma Access) Design-Build contract no later than Q4 2020. Accelerating procurement will reduce the program cost via inflation savings.</p> <p>Complete construction of SR 509 Stage 1 (I-5 to SeaTac) Design-Build contract by Q2 2025 and SR 167 Stage 1 (Port of Tacoma Access) Design-Build contract by Q2 2026.</p> <p>Complete construction of SR 509 Stage 2 (28th / 24<sup>th</sup> to 188th) Design-Build contract by Q4 2028 and SR 167 Stage 2 (I-5 to SR 161) Design-Build contract by Q4 2029.</p>	<ul style="list-style-type: none"> <li>• <b>Reduced Project Delivery Delays:</b> Receipt of INFRA funds in conjunction with meeting certain milestones facilitates Program acceleration by eliminating the delay otherwise caused by the current funding gap, helping to achieve the Gateway Program benefits up to three years sooner.</li> <li>• <b>Freight Movement and Economic Vitality:</b> Incremental construction by stages provides earlier benefits in the mobility of goods and people, promoting jobs and a stronger economy via connections to the I-5 and I-90 freight corridors that link rural agricultural communities to national and international markets.</li> </ul>
(2) Achieving a specific indicator of project success within 12 months of project completion	<p>Meeting the Gateway Program’s demand management goal to have vehicles travel at 45 mph 90% of the time. Variable tolling by time of day on these new priority freight segments will help to manage this new capacity to remain sustainable. WSDOT will work with the Washington State Transportation Commission to set and adjust tolls to suitable levels for achieving these goals while also meeting financial obligations. Stage 1 will be fully toll operational in 2026 and Stage 2 in 2029.</p>	<ul style="list-style-type: none"> <li>• <b>System Reliability:</b> Variable tolling of the new SR 509 and SR 167 roadway segments by time of day prevents them from attracting too many trips from other facilities, thereby maintaining reliable travel times and minimizing chances of congestion.</li> <li>• <b>Environmental Sustainability:</b> Managing traffic demand using tolling allows full implementation of Practical Solutions, right sizing the project footprint to sustainably manage capacity into the future.</li> </ul>

## 6 Project Readiness

Planning, design, environmental review, and significant ROW acquisition have been completed, and construction is scheduled to begin in earnest in 2020 (FY 2021) to ensure the Gateway Program is ready to obligate INFRA funds well before the September 30, 2022 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 Gateway Program. Practical Design efforts in 2016 refined the basis of design for both projects. Starting with project essential needs identification, then understanding context, development of performance metrics and performance targets, alternatives

development, and, finally, alternatives rating and screening. Practical Design was effective at defining the scope to meet the essential needs as stakeholders were brought into the process early and understood budget challenges and that trade-offs would need to be identified and resolved.

### 6.1.2 Basis for the Cost Estimate

The cost estimate provided in this INFRA grant application is the product of WSDOT's CEVP® methods, which are conducted to validate program costs, schedule, and risks.<sup>44</sup> 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. In June 2018, WSDOT updated the Gateway Program capital cost estimate to capture 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 the last four miles of the SR 167 highway between Puyallup and Fife, as well as two miles of new highway connecting the Port of Tacoma with I-5 in Fife. These new limited access highway segments will have interchanges at SR 161, Valley Avenue, I-5, 54<sup>th</sup> Avenue, 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 13 bridges to cross over multiple local streets, the Union Pacific Railroad Tacoma to Seattle line, Wapato Creek, and I-5. The 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. This INFRA application and any INFRA funds awarded from it apply to Stage 1, which is anticipated to be awarded for construction by Q3 2021.

**The SR 509 Completion Project** starts where SR 509 currently ends at S. 188<sup>th</sup> Street. The existing SR 509 / S. 188<sup>th</sup> St. interchange will be reconstructed into a folded-diamond interchange. The new segment of SR 509 will be 2 lanes in each direction. Next, SR 509 connects to 28<sup>th</sup>/24<sup>th</sup> Ave S with a half-diamond interchange to the south. This will serve as a new connection to Sea-Tac International Airport, improving travel times to and from the south.

East of 28<sup>th</sup>/24<sup>th</sup> Ave S, SR 509 passes under SR 99 and Sound Transit's Federal Way Link Extension (FWLE) project, runs south from the Angle Lake Station and passes over SR 99 and SR 509. As SR 509 climbs up from under SR 99, it severs the existing S 208<sup>th</sup> Street, therefore, the project includes a new street alignment to maintain connectivity. Next, SR 509 climbs up to make its connection with I-5 around S 212<sup>th</sup> Street. North of this location, an off-ramp to SR 516 will be constructed which will pass over the on ramp coming from SR 509 (braided ramp structure). A two-lane southbound collector-distributor system will be constructed allowing traffic to enter I-5 or exit at Veteran's drive or SR 516. The SR 516 interchange will be reconstructed into a diamond interchange with a southeast quadrant loop ramp. A new undercrossing of I-5 will connect Veterans Drive to the southbound I-5 off-ramp, providing a direct connection to the manufacturing and warehousing area in the Kent Valley. A southbound auxiliary lane will continue south from SR 516 to S 272<sup>nd</sup> Street.

The SR 509 Completion Project has also been divided into two stages: *Stage 1* includes improvements that are concurrently built with the Sound Transit FWLE project plus the extension of SR 509 from I-5 to 28<sup>th</sup>/24<sup>th</sup> Ave S including the interchange with I-5; and *Stage 2* includes the extension of SR 509 to S 188<sup>th</sup> Street. Any INFRA funds awarded would apply to Stage 1, which is anticipated to be under construction by Q3 2020.

<sup>44</sup> See <http://www.wsdot.wa.gov/NR/rdonlyres/45B85BFF-6813-439C-B82B-3AE50544A023/23821/DetermineRiskandSetContingency.pdf>.

## 6.2 Project Schedule

Table 6-1 summarizes key project schedule milestones. All necessary activities will be completed to allow grant funds to be obligated sufficiently in advance of the September 30, 2022 statutory deadline. Environmental review and re-evaluation have been completed. Preliminary Engineering has been developed to a 20% level, and 80% of the SR 167 Completion Project right-of-way (ROW) and 50% 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 CFR part 24.

**TABLE 6-1. PUGET SOUND GATEWAY PROGRAM - MILESTONE SCHEDULE BY CALENDAR YEAR AND QUARTER**

Key Project Milestone	SR 509 Anticipated Completion	SR 167 Anticipated Completion
NEPA Re-evaluation	Completed Q1 2018	Completed Q4 2018
Interchange Justification Report	Q3 2019	Q3 2019
30% Design	Completed Q4 2018	Q3 2020
Design Approval	Q3 2019	Q3 2019
ROW Acquisition	Q2 2020	Q2 2021
INFRA Grant Obligation	Q3 2020	Q3 2020
D-B RFQ Stage 1	Q4 2019	Q4 2020
RFP Ad Stage 1	Q1 2020	Q1 2021
Issue NTP for Stage 1 Construction Contract	Q3 2020	Q3 2021
Stage 1 Tolling Begins	Q1 2025	Q1 2026
End Construction and Closeout Stage 1	Q2 2025	Q2 2026
RFQ Stage 2	Q3 2023	Q3 2024
RFP Ad Stage 2	Q4 2023	Q4 2024
Issue NTP for Stage 2 Construction Contract	Q3 2024	Q3 2025
Stage 2 Tolling Begins	Q2 2028	Q2 2029
End Construction and Closeout Stage 2	Q4 2028 (FY 2029)	Q4 2029 (FY 2030)

## 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 that will be needed from federal, state and local agencies include:

1. Interstate Access Approval from FHWA;
2. Section 404 Clean Water Act Permit from USACE;
3. Hydraulic Project Approval from the WDFW;
4. Section 401 Water Quality Certification and Coastal Zone Management (CZM) Consistency Certification from Ecology and Puyallup Tribe of Indians;

5. Section 402 NPDES Construction Stormwater General Permit from Ecology;
6. FAA Airport Highway Clearance for the SR 509 Completion Project only; and
7. 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 International Airport.<sup>45</sup> The need for the project under the ROD was to create system linkages, accommodate travel demand and capacity needs, and improve intermodal relationships.

In 2017, FHWA and WSDOT initiated the NEPA re-evaluations, focusing on: a) the legislative intent to toll both project extensions and the effects/benefits of the operation of tolling; b) any updated baseline/affected environment information since the RODs were published; and c) any other updates needed to address design refinements. The re-evaluations are now complete and determined no new significant impacts compared to those effects previously documented within the RODs.

### **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.<sup>46</sup> In addition, government-to-government consultation with the Puyallup Tribe of Indians helps to ensure that the Tribe’s concerns are considered and incorporated where feasible.<sup>47</sup>

**FIGURE 6-1. GATEWAY PROGRAM COMMUNITY OPEN HOUSE MEETING**



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. 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 contaminated properties in the project corridor that affect project design. Public engagement meeting dates and materials are available at the SR 167 and SR 509 Completion Project libraries.

### **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

<sup>45</sup> 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.

<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

Service (NMFS), USACE, U.S. Environmental Protection Agency (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.

### 6.3.3 Federal Transportation Requirements Affecting State and Local Planning

Both stages of the SR 167 Completion Project and the first stage of the SR 509 Completion Project are included in the approved [2019 to 2022 Statewide Transportation Improvement Program \(STIP\)](#), a four-year, prioritized program of federally funded transportation projects, as well as regionally significant state and local transportation projects.<sup>48</sup> They are also included in the PSRC’s Metropolitan Transportation Plan (MTP) and Regional Transportation Improvement Plan (TIP). The Projects were also designated Critical Urban Freight Corridors submitted by FHWA in September 2016.

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.<sup>49</sup> WSDOT recommended capital investments in the Gateway Program and other multimodal freight preservation and mobility projects to address current needs and issues identified in the plan. They are 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” and “an example of a project that will aid the movement of trucks between the port terminals in Seattle and Tacoma and the extensive warehouse and manufacturing area located along SR 167.”<sup>50</sup>

## 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 6-2 presents the top three risks and strategies to mitigate them if they occur. These and other risks have been factored into the Program’s cost estimate detailed in Section 4.3. A detailed risk management plan is being developed for all identified program risks.

**TABLE 6-2. RISKS AND MITIGATION STRATEGIES**

Risk	Description	Cost Risk	Mitigation Strategy
Fluctuating Market Conditions	At the time of bid, market conditions, which are currently favorable, may be different.	\$25.1 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.
Changed Seismic Design Criteria for New Structures	Structures in the Gateway Program are being designed to current code, but due to the time frame of the Gateway Program, more stringent codes could be adopted.	\$10.2 M	By using existing structural analysis and seismic design tools, WSDOT will seek to mitigate this risk through better informed design and avoid higher costs during construction.
Additional Local Street/ Intersection Improvements	Local municipalities could insist on additional mitigation for operational traffic impacts.	\$9.7 M	WSDOT is working closely with all impacted local jurisdictions to understand and anticipate local operational mitigation requirements.

<sup>48</sup> WSDOT, [Washington State Transportation Improvement Program 2019 to 2022](#), pp. 824, 899-901.

<sup>49</sup> WSDOT, [Washington State Freight Mobility Plan](#), Project List, pp. 21 and 24.

<sup>50</sup> WSDOT, [Washington State Freight System Plan](#), pp. 51 and 79.

## 7 Large Project Requirements

Because the Gateway Program is in a single state and greater than \$100 million, it is a large project for purposes of the INFRA grant program. The Project qualifies for award as a large project due to the fact that it is reasonably expected to obligate INFRA funds in Q3 2020 or by federal FY 2021, at which time construction will have already begun. This is before the September 30, 2022 obligation date for federal FY 2019 INFRA grant funds, and meets statutory requirements as shown in Table 7-1 below.

**TABLE 7-1. LARGE PROJECT REQUIREMENTS MATRIX**

Question	Response
1. Does the project generate national or regional economic, mobility, safety benefits?	Yes. National or regional economic, mobility, and safety benefits, as well as a contribution to national goals, are demonstrated in the Merit Criteria section (Section 5.1) of this Project Narrative.
2. Is the project cost effective?	Yes. Cost-effectiveness is demonstrated in the Benefit-Cost Analysis Report attached to this application ( <b>Attachment 2 - Appendix A</b> ).
3. Does the project contribute to one or more of the Goals listed under 23 USC 150 (and shown below)?	Yes. The Project contributes to the following national goals as demonstrated in the Merit Criteria and Project Parties sections of this Project Narrative: (1) Safety — See Section 5.1. (2) Infrastructure condition — See Section 5.1. (3) Congestion reduction — See Section 5.1. (4) System reliability — See Sections 5.1. (5) Freight movement and economic vitality — See Section 5.1. (6) Environmental sustainability — See Section 5.3.2. (7) Reduced delivery delays — See Section 6.
4. Is the project based on the results of preliminary engineering?	Yes. See Section 6.1 (Technical Feasibility).
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 the project?	Yes. See Sections 4.3 (Grant Funds, Sources and Uses of Project Funds) and 5.2 (Merit Criteria - Leveraging of Federal Funds).
5b. Are contingency amounts available to cover unanticipated cost increases?	Yes. See Section 4.2 (Grant Funds, Sources and Uses of Project Funds).
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. An INFRA award would bridge a funding gap between the total project cost and available sources of funding. See Sections 4.3 (Grant Funds, Sources and Uses of Project Funds) and 5.2 (Merit Criteria - Leveraging of Federal 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. See Sections 6.1 (Technical Feasibility) and 6.2 (Project Schedule).