<table>
<thead>
<tr>
<th><strong>Project Title</strong> – Puget Sound Gateway Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Sponsor</strong></td>
</tr>
<tr>
<td>Was an INFRA application for this project submitted previously?</td>
</tr>
<tr>
<td>If yes, what was the name of the project in the previous application?</td>
</tr>
<tr>
<td>Previously Incurred Project Cost (through 6/30/2017)</td>
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<tr>
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<tr>
<td>Total Federal Funding (including INFRA)</td>
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<tr>
<td>Are matching funds restricted to a specific project component? If so, which one?</td>
</tr>
<tr>
<td>Is the project or a portion of the project currently located on the National Highway Freight Network?</td>
</tr>
<tr>
<td>Is the project or a portion of the project located on the National Highway System?</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Do the project components include a railway-highway grade crossing or grade separation project?</td>
</tr>
<tr>
<td>Do the project components include an intermodal or freight rail project, or freight project within the boundaries of a public or private freight rail, water (including ports) or intermodal facility?</td>
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<tr>
<td>If answered yes to either of the two component questions above, how much of requested INFRA funds will be spent on each of these project components?</td>
</tr>
<tr>
<td>State in which the project is located</td>
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<tr>
<td>Small or large project?</td>
</tr>
<tr>
<td>Urbanized Area in which project is located, if applicable.</td>
</tr>
<tr>
<td>Population of Urbanized Area</td>
</tr>
<tr>
<td>Is the project currently programmed in the TIP?</td>
</tr>
<tr>
<td>Is the project currently programmed in the STIP?</td>
</tr>
<tr>
<td>Is the project currently programmed in the MPO Long Range Transportation Plan?</td>
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<tr>
<td>Is the project currently programmed in the State Long Range Transportation Plan?</td>
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<tr>
<td>Is the project currently programmed in the State Freight Plan?</td>
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<tr>
<td>If selected, would you be interested in participating in a new environmental review and permitting approach?</td>
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¹ [https://www.transportation.gov/buildamerica/infragrants/urbanized-area](https://www.transportation.gov/buildamerica/infragrants/urbanized-area)
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Appendix A: Benefit-Cost Analysis (Attachment 2)
Appendix B: Combined Letters of Support (Attachment 3)
1 Project Description

1.1 Project Summary

The Washington State Department of Transportation (WSDOT) is requesting $111 million in INFRA grant funds to fill a funding gap in the Puget Sound Gateway Program. This will allow WSDOT to complete 12 miles of highway project delivery 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 make connections. Together, these projects will provide time savings and better schedule reliability for accessing the Puget Sound region, a major gateway for U.S. foreign trade transported by truck to and from the Ports of Tacoma and Seattle, and the Seattle-Tacoma International Airport (see Sidebar). In this way, the INFRA investment in the Gateway Program will support jobs and commerce throughout the region, state, and nation.

1.2 Project History

The Puget Sound Regional Council's Transportation 2040: The 2040 Metropolitan Transportation Plan prioritizes the Gateway Program as two key roadway projects that will enhance freight mobility and solidify the Puget Sound region’s strategic position as a critical gateway for international trade. The SR 167 Completion Project in Pierce County will build the remaining four miles of SR 167 between its current terminus at SR 161 (Meridian Avenue) and I-5, plus a new two-mile access road from I-5 to the Port of Tacoma. The SR 509 Completion Project in King County will extend SR 509 south approximately two miles, providing two new lanes in each direction from S 188th Street to I-5, a new interchange at 28th/24th Avenue South, a new interchange for south access to Seattle-Tacoma International Airport (Sea-Tac Airport), as well as four miles of improvements on I-5. Currently, the incomplete freeways dead-end and feed into local streets and arterials. The Gateway Program includes new segments of regional trail projects.

The Federal Highway Administration (FHWA) approved the SR 167 Project's Tier I EIS with a Record of Decision (ROD) in 1999 and Tier II EIS with a ROD in 2007. The SR 509 Project’s EIS was approved by a ROD in 2003. Preliminary Engineering has been developed to a 20% level, and 70% of the SR 167 Project right-of-way (ROW) and 50% of the SR 509 Project ROW has been acquired.

In July 2015, the Washington State Legislature approved the Connecting Washington Transportation Funding Package (CWTFP), prioritizing the Gateway Program with $1.876 billion in state, toll, and local investments, more than any other project in the 16-year, $16 billion package. Future INFRA-eligible costs for the SR 167 and SR 509 Projects total $1.985 billion in year of expenditure (YOE) dollars. Approximately 46% of this total is for improvements on SR 509 and I-5 with the remaining 54% for SR 167. Previously incurred costs include expenditures in state fiscal years (FY) 2016 and 2017 equal to $7.5 million, for a total program cost of $1.992 billion. The state FY runs from July 1 to June 30, e.g., FY 2018 is July 1, 2017 to June 30, 2018.
Figure 1. Location Map of Puget Sound Gateway Program

SR 509 Project

SR 167 Project
The requested $111 million in federal INFRA grant funds would match 94% in non-federal sources, completing the Gateway Program’s $1.99 billion expenditure plan (Table 1).

1.3 Regional and National Significance

The Gateway Program is regionally and nationally significant in that it supports the U.S. and Pacific Northwest region economies. The Ports of Tacoma and Seattle and Sea-Tac Airport 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 (see Sidebar). This business revenue and economic development impact is threatened without surface transportation investments like the Gateway Program that improve the movement of goods into and out of the ports by providing direct freeway routes that reduce travel times and improve safety and reliability.

Evidence of the state’s position as part of the 2nd-most trade-dependent state in the U.S., with exports as a key driver of job growth and economic prosperity, include:

- Operated by the Port of Seattle, Sea-Tac Airport is the 9th busiest airport by passenger volume (2016), 19th busiest airport in U.S. by cargo volume (2015)\(^2\) and the third largest airport for international cargo on the West Coast (excluding Alaska),\(^3\) moving 366,500 metric tons of cargo in 2016.

- Sea-Tac Airport exports a variety of goods harvested or manufactured in Washington State, including cherries (12,706 MT or 20% of all exports), seafood (9,126 MT or 15% of all exports), aluminum alloy and graphite (4,561 MT or 7% of all exports), aerospace components (3,557 MT or 6% of all exports), and footwear parts (3,375 MT or 5% of all exports).\(^4\)

- The annual growth rate for air freight in the State of Washington is forecasted to increase at a 1.9% annual growth rate from 2014 to 2034, reaching 746,281 MT by 2034, mostly driven by air cargo activity at Sea-Tac Airport, which, by 2034, is projected to handle more than 441,870 MT of goods shipped by

<table>
<thead>
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<th>TABLE 1. GATEWAY PROGRAM COST SUMMARY</th>
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<td>---------------------------------------</td>
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<td>Preliminary Engineering &amp; Design</td>
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<tr>
<td>Right-of-Way</td>
</tr>
<tr>
<td>Construction</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

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

**Northwest Seaport Alliance**
- Supports more than 48,000 direct, induced and indirect jobs, nearly 19,000 (40%) of which are direct jobs generated by marine terminal activities at the Ports
- Generates nearly $4.1 billion in total income and re-spending, of which $1.1 billion is received as direct income by direct job holders, for an average annual income of $58,240
- Produces approximately $379 million in state and local taxes

**Sea-Tac International Airport**
- Supports more than 171,796 direct, induced, and indirect jobs, 109,924 (64%) of which are direct jobs generated by the airport
- Generates nearly $16.3 billion in regional economic impact, of which $2.8 billion is received as direct income by direct job holders
- Produces approximately $565 million in state and local taxes

Sources: Northwest Seaport Alliance, The Economic Impact of Marine Cargo at the Ports of Tacoma and Seattle, & http://www.portseattle.org/Newsroom/Fast-Facts/Pages/Airport-Basics.aspx

\(^2\) http://www.portseattle.org/Newsroom/Fast-Facts/Pages/Airport-Basics.aspx
\(^3\) WSDOT Washington State Freight Mobility Plan, October 2014, p. 5.
\(^4\) http://www.portseattle.org/Cargo/AirCargo/cherry_cargo_infographic/Cherries_Infographic-01.jpg
plane. This includes branded cargo operations for Amazon, based in Seattle, as it looks to fly more of its shipments itself.

- In 2015, the Northwest Seaport Alliance exported 779,000 TEUs of exported goods, the 2nd most of any marine cargo port on the U.S. west coast and 4th most in the nation behind the Ports of Los Angeles and Long Beach, New York, and Savannah.
- 75% of all Ports of Tacoma and Seattle exports originate in Washington, Oregon, and Idaho (the other 25% originate in other U.S. states).
- Washington contains 2% of the U.S. population but 7% of the nation’s export and 6% of its import activity.
- In 2015, the Ports handled over $16.2 billion in exported goods, most of which ($13.2 billion) was destined for Pacific Rim countries (China, Japan, South Korea, Taiwan, and Hong Kong), and is growing at a much faster rate than trade with any other region.

The movement of this cargo through Puget Sound offers enormous economic benefit to the region and to the nation. Those benefits, however, are threatened by increasing competition from foreign ports to the north. As the Canadian government has invested billions of dollars in port-related infrastructure, the Ports of Tacoma and Seattle have seen a shift of cargo — and American jobs — to ports in British Columbia. This makes U.S. investments in the Gateway Program critical to the nation’s economic competitiveness.

In addition, the Gateway Program would support substantial employment throughout the region during its construction, and its economic benefits would result in new permanent jobs following its completion. In fact, the Gateway Program would support an average of 2,354 jobs in the Puget Sound region each year during construction from 2018 to 2030, and during the 15 years following construction, the enhanced mobility resulting from it would generate an annual average 2,431 additional permanent jobs and an annual average increase of $264 million in Gross Regional Product (GRP) and $327 million in disposable personal income.

### 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 Sea-Tac Airport and the Ports of Seattle and Tacoma are needed. The Puget Sound region is among the “worst traffic hotspots in America’s 25 most-congested cities,” experiencing the highest traffic volumes in the Pacific Northwest region and the state with an increase of 6,600 average daily heavy trucks on I-5 from 2013 to 2016. This makes the Seattle urban area the tenth worst traffic hotspot and eleventh worst when impacts (e.g., loss of time, wasted fuel) are factored with a $2 billion total cost of congestion in 2016 and $15 billion total cost of congestion in 2026.

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 2015, a 1.5% increase over 2013. Traffic at specific locations on the corridor worsened from 2013 to 2015, with morning and evening weekday commutes experiencing moderate to heavy congestion on a daily basis. Delay increased 88% on the corridor from 2013 to 2015 and has the highest...
levels of congestion in Washington in 2015 with 223,881 annual average daily trips near Sea-Tac where I-5 meets I-405 / SR 518.\textsuperscript{15}

SR 167 saw more than 305 million person-miles traveled between Renton and Auburn in 2015, a 1.5% increase over 2013.\textsuperscript{16} This translates to an increase in delay of 56% on SR 167 between Auburn and Renton from 2013 to 2015. Despite being served by Sounder commuter rail transit, bus transit, and a dynamically-priced high occupancy toll (HOT) lane in each direction between Renton and Auburn, traffic congestion at specific locations on SR 167 worsened, with morning and afternoon commute periods experiencing severe congestion on a daily basis. In addition to delaying commuters, this congestion directly impacts the movement of goods in Washington, as trucks accounted for 11% of the total daily traffic volume on the corridor in 2015.

In the SR 509 Project vicinity, average daily traffic volumes exceed 223,000 vehicles per day on I-5 south of I-405. Portions of the I-5, SR 99, and I-405 corridors are operating at LOS E or F. Several local roadways and intersections in the SR 509 Completion Project area are congested because of high volumes of vehicles accessing Sea-Tac Airport, the single largest generator of vehicle trips in the area. The airport handled 45.7 million passengers in 2016, an 8% increase over 2015 levels.\textsuperscript{17} Local access to Sea-Tac Airport from the south is only possible from the arterial street system at approximately S 182nd Street/SR 99. Currently, the primary regional access route from the south is I-5 via SR 518 and the North Access Expressway, a circuitous and lengthy route requiring vehicles to pass through the congested I-5/I-405 interchange and the Southcenter Hill portion of I-5.\textsuperscript{18}

Schedule reliability is one of the biggest concerns of the trucking industry that will be addressed by the Gateway Program. Traffic using I-5 and surface streets is often delayed by recurring congestion and accidents that make truck deliveries unreliable. Farmers often complain that it takes as long to move their goods hundreds of miles from their farms in Eastern Washington to the edge of the central Puget Sound Region as it does to move them the final 18 miles to the Port of Seattle or 40 miles to the Port of Tacoma due to traffic congestion.

Delay in the peak travel period on Puget Sound freeways causes a 60% loss of productivity for truckers.\textsuperscript{19} The WSDOT estimate of the cost of lost time, using the most widely-accepted economic studies, sets a rate of $50 per hour of delay for truckers, based on driver wages and a factor of assumed vehicle “rent”.\textsuperscript{20} Added to these are the costs of late delivery to businesses and consumers, which ultimately leads to higher prices and/or lower profitability and the increase in vehicle operating costs (largely due to wasted fuel).\textsuperscript{21}

The Gateway Program seeks to remedy transportation challenges that currently exist due to the incomplete segments of SR 167 and SR 509 that lack direct access to I-5, Sea-Tac Airport, and the Ports of Seattle and

\begin{footnotesize}
\textsuperscript{16} WSDOT, \textit{2016 Corridor Capacity Report}, p. 29.
\textsuperscript{18} WSDOT, \textit{SR 509: Corridor Completion/I-5/South Access Road FEIS}, pp. 1-3 to 1-4.
\textsuperscript{20} Note that this value of time is distinct from the value used in this INFRA grant application’s Benefit-Cost Analysis, which utilized USDOT’s lower value for time.
\textsuperscript{21} Ibid.
\end{footnotesize}
Tacoma. Freight traffic to and from the Ports of Tacoma and Seattle, and Sea-Tac Airport, is currently forced to exit limited access highways and use local roadways to reach the ports. These new highway segments will provide direct access into and out of these ports, thus greatly reducing heavy truck traffic on local streets.

2 Project Location

The Gateway Program is strategically located in the Pacific Northwest region providing ‘last mile’ and system network connections to Interstate 5, the West Coast’s economic lifeline, along with a connection to Interstate 90 via SR 18 or I-405, serving the Northern Tier states. The Gateway Program is also among Washington’s most critical multimodal freight assets. SR 167 and SR 509 serve to transport Northwest Seaport Alliance international container exports and imports to locations in Washington and beyond. Cargo moving through the Alliance’s two ports flows to or from 41 different states, with Midwest states accounting for 73% of flows.  

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 SR 167 Completion Project is wholly within Pierce County in the cities of Tacoma, Fife, Milton, Edgewood, and Puyallup and in Congressional Districts 8, 9 and 10. The Gateway Program is in the Seattle Urbanized Area, with a population of 3,059,393.

3 Project Parties

The Puget Sound Gateway Program represents a broad, united coalition of funding partners and project stakeholders that, over the past two decades, have been instrumental in moving these projects forward.

WSDOT, Project Sponsor (DUNS: 8088839950000): WSDOT is the sponsoring agency for the Puget Sound Gateway Program. The state agency operates 18,000 lane miles of state highways, 3,600 bridges, the largest ferry system in the nation, and the state's toll system, and is delivering the SR 167 and SR 509 Completion Projects from state transportation funds approved by the State Legislature, which placed high priority on the Gateway Program by providing more funds to it under the 2015 CWTFP than any other project.

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. Local jurisdictions and businesses provided letters, in addition to

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\(^{23}\) [https://www.transportation.gov/buildamerica/infragrants/urbanized-area](https://www.transportation.gov/buildamerica/infragrants/urbanized-area)
Statewide and regional organizations, including Governor Jay Inslee, Senate Transportation Committee Chair Curtis King, House Transportation Committee Chair Judy Clibborn, the Washington State Transportation Commission, the Washington Freight Mobility Strategic Investment Board, the Washington State Tree Fruit Association, the Washington State Potato Commission, the Washington Trucking Association, and the Northwest Seaport Alliance.

The SR 167 and SR 509 Executive and Steering Committees currently partner with WSDOT to advise the agency on policy and design decisions. Figure 2 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 Committees are 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 committees are 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 at the project websites for SR 167 and SR 509.

4 Grant Funds, Sources and Uses of Project Funds

Through the CWTFP, the Legislature has provided WSDOT with $1.876 billion in funding, distributed as $1.566 billion in new state funds, $180 million leveraged from future toll revenues, and $130 million in local contributions. In addition, the program has received $6.1 million in other existing state funds. Overall, this leaves a net funding amount of $1.882 billion excluding an INFRA grant available for development and construction of the $1.993 billion program. These state and local funding sources comprise 94% of the future eligible project costs, so this application is seeking $111 million (or 6% of future eligible project costs) in INFRA grant funding. Receipt of a $111 million INFRA grant would provide for the following beneficial outcomes:

- **Closes the funding gap** — 94% of the program funding is in place, demonstrating that WSDOT and local partners have substantial “skin in the game” and the INFRA grant will complete the financial plan.

- **Accelerates program delivery** — $111 million in grant funds supplements the fixed disbursement schedule for the $1.566 billion in CWTFP state funds provided by the legislature, allowing both corridors 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, reduces an initial funding gap of $184 million by $73 million in inflation cost savings which go directly toward reducing the grant request down to $111 million.

- **Requires only minimal federal assistance** — The requested $111 million represents the only federal dollars in the program, which, at 6%, is well below both the 60% maximum grant threshold for future eligible project costs and the 80% maximum for total federal funding toward future eligible project costs. Moreover, the $1.882 billion in non-federal funding paired with the requested INFRA grant is not counted toward the matching requirement for any other Federal program.

4.1 Previously Incurred Expenses

For purposes of this INFRA grant application, previously incurred project costs include the re-evaluation of previously-completed environmental reviews and ROW acquisition that have occurred since the beginning of state FY 2016, which started on July 1, 2015, the date by which the CWTFP came into effect. This legislative action provided a clear dividing line between the new Gateway Program and the previous project planning, environmental, and ROW acquisition activities by corridor.
Between July 1, 2015 and June 30, 2017, $7.5 million has been expended on pre-construction activities, distributed as $7.3 million on PE and $0.2 million on ROW.

### 4.2 Future Eligible Costs

Future eligible costs for pre-construction and construction activities total $1.985 billion, with $111 million for PE, $281 million for ROW acquisition, and $1.593 billion for program construction.

### 4.3 Budget and Spending Plan

The Program has $1.882 billion in non-federal funding sources with $1.566 billion in CWTFP state funds available in fixed amounts for each two-year biennium through FY 2031 (with the program fully operational in FY 2029 and ramp down construction activities completed in FY 2030). WSDOT has optimized the phasing and cash flow shown in Figure 3, which summarizes the financial plan’s projected annual sources and uses of funds for the $1.993 billion Program, to accelerate construction and minimize the grant amount requested, subject to other funding constraints.

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**Figure 3. Puget Sound Gateway Program Projected Sources and Uses of Funds**

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<tr>
<th>Sources of Funds</th>
<th>CWTFP* - State</th>
<th>CWTFP* - Local</th>
<th>CWTFP* - Tolls</th>
<th>INFRA Grant</th>
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<td>52.7 M</td>
<td>111.3 M</td>
<td>163.6 M</td>
<td>276.6 M</td>
</tr>
<tr>
<td>FY 2022</td>
<td>111.3 M</td>
<td>163.6 M</td>
<td>276.6 M</td>
<td>444.5 M</td>
</tr>
<tr>
<td>FY 2023</td>
<td>163.6 M</td>
<td>276.6 M</td>
<td>444.5 M</td>
<td>620.1 M</td>
</tr>
<tr>
<td>FY 2024</td>
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<td>444.5 M</td>
<td>620.1 M</td>
<td>896.7 M</td>
</tr>
<tr>
<td>FY 2025</td>
<td>444.5 M</td>
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<tr>
<td>FY 2026</td>
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<td>896.7 M</td>
<td>1364.3 M</td>
<td>2180.5 M</td>
</tr>
<tr>
<td>FY 2027</td>
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<td>2180.5 M</td>
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</tr>
<tr>
<td>FY 2028</td>
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<td>2180.5 M</td>
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</tr>
<tr>
<td>FY 2029</td>
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<td>5285.1 M</td>
<td>7830.4 M</td>
</tr>
<tr>
<td>FY 2030</td>
<td>3544.8 M</td>
<td>5285.1 M</td>
<td>7830.4 M</td>
<td>11076.3 M</td>
</tr>
</tbody>
</table>

* CWTFP = Connecting Washington Transportation Funding Package
4.4 Operating Sources and Uses

The Washington State Legislature intended for the Gateway Program’s state funding to be supplemented with toll revenues generated from the two new highway segments. While tolling has not yet been authorized by the Legislature, their intent for tolling was clear and the Gateway Program is moving forward under the legislative direction to-date that the new routes will become the 6th and 7th tolled facilities in the state.24

Tolling will commence on the Program’s two corridors when the first construction stages are completed in FY 2025. As tolled corridors, SR 167 and SR 509 will generate revenues to cover their own toll collection and facility operations and maintenance (O&M) costs in addition to contributing to their capital construction. Tolling will start in FY 2025 and by FY 2029, when the two corridors are completed for full toll operations, toll collection O&M costs are expected to total $15.4 million in YOE dollars, and comprise roadway toll collection systems (TCS), customer service center (CSC) operations, and state operations costs. Facility O&M costs in FY 2029 are initially estimated at $0.7 million in YOE dollars. Both amounts increase over time due to inflation and traffic growth.

Net toll revenues after fees, uncollectible amounts, and toll collection plus facility O&M costs will be used to leverage toll bonds or other financing to provide the $180 million in toll funding for the program identified by the legislature. These funds are distributed as $159.4 million in FY 2025 and $20.6 million in FY 2027. It is anticipated that tolls will not only pay for all routine annual toll collection and facility O&M costs, but also generate sufficient excess net toll revenues after debt service payments to fund reserve accounts to pay for periodic capital repair and replacement (R&R) activities over time, affording these corridors both operational and financial sustainability. An updated toll traffic and revenue study is underway with results due in Spring 2018, and an investment-grade traffic and revenue study will be completed prior to toll financing.

5 Merit Criteria

5.1 Support for National and Regional Economic Vitality

The Gateway Program is key to enhancing regional, national, and global economic vitality. Connecting the state’s largest marine and air ports to key distribution centers in King and Pierce counties, to eastern Washington, and to northern tier states will improve regional mobility and relieve congestion on local roads and highways.

**Benefit-Cost Analysis**

The accompanying benefit-cost analysis shows the Puget Sound Gateway Program to be highly cost-effective, as shown in Table 2 and detailed in Appendix A - Attachment 2. At a 7% real discount rate, the Gateway Program achieves a benefit-cost ratio of 3.60. At a 3% real discount rate, this measure is even more favorable with a benefit-cost ratio of 6.75. 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 road network. Benefits are also generated by reductions in vehicle-miles traveled for automobile and truck users, including reduced emissions, reduced vehicle operating costs, and reduced pavement damage and noise impacts.

**Table 2. Benefit-Cost Analysis Results**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Case A: 7% Discount Rate</td>
<td>$2.81 billion</td>
<td>3.60</td>
</tr>
<tr>
<td>Case B: 3% Discount Rate</td>
<td>$8.79 billion</td>
<td>6.75</td>
</tr>
</tbody>
</table>

Source: WSP Analysis

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24 Historically, the Legislature has authorized tolling on projects a couple of years before tolling is needed.
Job Creation

The ability of our ports 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 freeways could fuel job growth to the tune of $10.1 billion, which is the size of the new payroll expected to be generated by an expansion of international cargo and other operations at the Ports of Tacoma and Seattle, an expansion that is contingent on new transportation connections to move freight to and from the docks.

An analysis of the short-term and long-term economic benefits of the Gateway highway project was undertaken using the nationally recognized Regional Economic Models Incorporated (REMI) TranSight 4.1 software. During the construction period through FY 2030, the Gateway Program was found 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 program’s improvements would generate and maintain an average of 2,491 regional jobs, produce an average of $264 million per year in gross regional product, and yield an average of $327 million in disposable personal income, relative to the “no build” case.

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

The overall safety benefits of the Puget Sound Gateway Program include estimated reductions in fatalities and injuries, as well as a reduction in other property damage crash 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, including I-5 and local arterials. 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. Accident rates on the River Road, the 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

The SR 167 Completion Project will also address the prevalence of rear-end crashes due to the close proximity of the I-5 southbound off-ramp terminal to the intersection of 54th Avenue and SR 99, coupled with the high volumes of traffic on both 54th Avenue and SR 99. A near-daily occurrence is for the predominantly truck-filled queue on the southbound off-ramp to back up onto mainline I-5 causing many rear-end accidents 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. By providing an alternative for commercial vehicles, the SR 167 Completion Project will remove trucks from off-ramp traffic, creating much-needed space for other vehicles, thereby eliminating the queueing and backing up onto mainline I-5.

Without the SR 509 Completion Project, trucks traveling to and from the Port of Seattle and Sea-Tac Airport will continue to use local streets and heavily congested sections of SR 518 and I-5. The SR 509 Completion Project will have a two-fold improvement on crashes. First, removal of truck and vehicle trips off the congested sections of SR 518 and I-5 will improve operations on those facilities and reduce the prevalence of congestion-related crashes, the most frequent crash types present on both facilities. Second, truck and vehicle trips currently using SR 99, S. 188th St., S. 200th St., and other local streets will move from those

facilities to the new SR 509 corridor once completed. The SR 509 corridor will have greatly reduced conflict points and crash exposure for vehicles and pedestrians as opposed to the local streets, which have multiple intersections and uncontrolled access points.

*Improves interactions between roadway users*

The SR 167 and SR 509 Completion Projects will allow trucks to arrive and leave the Ports of Tacoma and Seattle through limited access routes. This will improve safety through better flow of traffic, improved visibility on local streets, and reduce the interaction of trucks and pedestrians. Additionally, the projects are expected to increase pedestrian safety by moving vehicles off the local streets and onto the completed SR 167 and SR 509 freeways, thus reducing pedestrian exposure areas such as arterial intersections.

*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 area.²⁶ At this rate, truck traffic is increasing at a faster rate than passenger-vehicle traffic, with truck freight 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 2016.²⁷ 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. 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 project, will allow traffic to directly travel from the Port of Tacoma to the existing SR 167 corridor and warehousing districts, and thereby, eliminate bottlenecks in the freight supply chain and provide for more reliable delivery times.

The SR 509 project will eliminate freight highway bottlenecks by adding a southern access point to Sea-Tac 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 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 freeway once it is extended.²⁸

Extending the SR 509 freeway would provide a second route that trucks could use to bypass congestion on I-5. Although parallel routes exist south of I-405 (e.g. SR 167), accessing those routes from the Port of Seattle or Sea-Tac Airport would require a truck to pass through the I-5/I-405 interchange at Tukwila, the primary bottleneck in the area.²⁹ The SR 509 extension would allow trucks to bypass this interchange altogether. The SR 509 Completion Project will also reduce the travel distance between the Ports of Seattle and Tacoma by 1.2 miles compared to using only I-5, and by 1.7 miles compared to using SR 599 and I-5.³⁰ Drivers traveling between Tacoma and Sea-Tac Airport would realize the largest reduction in mileage. The extension of SR 509 would save approximately 2.5 miles of travel distance compared to the existing route along I-5 and S 188th Street. The shorter distances would provide significant travel time savings over I-5 in the peak direction.

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²⁹ Ibid.
³⁰ Ibid.
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. WSDOT, following the success of the SR 520 Lake Washington Urban Partnership program with USDOT, will utilize similar time of day tolls that are higher in the peak travel times and directions and lower at other times. This innovation will help manage demand for efficient throughput at peak times while retaining more traffic at off-peak times.

**Ensures or restores the good condition of infrastructure that supports commerce & economic growth**

The Gateway Program provides new infrastructure to support commerce and economic growth. WSDOT’s 2007 economic analysis of the SR 167 Completion Project found that direct impacts of the project to the regional and national economy derive from users of the transportation system experiencing significant reductions in congestion and travel times. 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 $3.1 billion in travel time savings over the 30-year period following completion of the Program, comprising $890 million in savings for truck users and over $2.2 billion for auto users (discounted at 7%). This economic benefit is the result of an estimated 870 million person-hours of travel time savings over the same period. These savings will support future commerce and economic growth through the addition of goods and people to and from the Ports of Seattle and Tacoma and Sea-Tac Airport, as well as the boosting of U.S. exports moved by truck.

U.S. exports through the Puget Sound are very dependent on trucking. Reductions in truck travel times reduce transportation costs for exports, which, in turn, increases exporters’ profitability and competitiveness, leading to greater U.S. exports. Table 3 displays total U.S. exports that moved through the Northwest Seaport Alliance and Sea-Tac Airport in 2015. Over 75% of these exports were transported from U.S. origins by truck. While most volumes originated from Washington, other significant origin states include Oregon, California, Minnesota, Idaho, Nebraska and Iowa.

According to FAF and U.S. Census trade data, major exports from Washington and Oregon include wheat, corn, soybeans, hay, prep vegetables, fruit, nuts, animal feed, petroleum products, wood products, wood pulp and paper waste, and paper products. Most of these products are relatively low-value per ton commodities for which lower transportation costs would provide a relatively high value per ton benefit.

Imports have a smaller share of volume moved by truck than exports, with 36% transported to U.S. destinations by truck. This includes volumes that go to consolidation and distribution centers within the state that are eventually transported to other regions of the country. The largest tonnage imports into Washington include gravel and sand; nonmetallic minerals and products; vehicles; wood products; ferrous waste and scrap; gasoline; and furniture.

The current levels of commerce in the State of Washington that pass through the Northwest Seaport Alliance and Sea-Tac Airport cannot be supported, much less grow at projected rates, without the new infrastructure provided by the Gateway Program. The SR 167 and SR 509 Completion Projects will provide new

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**Table 3. U.S. Trade through the Seattle Region by Mode in 2015 (Thousands of Tons)**

<table>
<thead>
<tr>
<th></th>
<th>Exports</th>
<th></th>
<th>Imports</th>
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<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Truck</td>
<td>Total</td>
<td>Truck</td>
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<tr>
<td>All States</td>
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<td>Oregon</td>
<td>1,411</td>
<td>1,310</td>
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</tbody>
</table>

Source: Federal Highway Administration Freight Analysis Framework (FAF)

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infrastructure with a longer service life than the heavily-congested interstates and local arterial roads that trucks currently travel on to and from the ports. By reducing truck volumes and congestion at interchanges on I-5 and allowing traffic to directly travel from the Port of Tacoma to the existing SR 167 corridor and warehousing districts, current arterials and highways in Pierce County (specifically, River Road in Puyallup and SR 99 in Fife, which were not designed to carry current and projected vehicle volumes and loads) will be spared the significant pavement wear from current tractor trailer traffic to and from the Port of Tacoma.

**Reduces barriers separating workers from employment centers**

Reduced truck and auto traffic on local streets will improve the quality-of-life for impacted communities by reducing congestion, noise, and wear-and-tear on local infrastructure and local transportation costs associated with such use. When the Completion Projects are operational, local streets will see an immediate reduction in truck traffic, which will ease the ability of local traffic to access jobs, healthcare, education, and other community resources through greatly improved travel times within the communities of Fife, Milton, Tacoma, Edgewood, Puyallup, Kent, Des Moines, SeaTac, and Burien. In addition, the Gateway Program includes new segments of regional pedestrian trails. The Gateway Program is connected closely with Sound Transit’s light rail line being constructed adjacent to SR 509 and along I-5 from SeaTac to Kent, Federal Way and Fife and will provide improved access to rail stations and associated park-and-ride lots for both pedestrians and vehicles.

Completion of SR 509 to Seattle and completion of SR 167 to Tacoma will serve as the “last mile” connections for products grown and manufactured in the Pacific Northwest and northern tier states, destined for Sea-Tac Airport and the port’s docks for export. The two highway extensions also provide a direct link to the Kent, Sumner, and Puyallup valleys, home to the 2nd largest distribution center on the West Coast and the destination for 44% of all regional truck trips from the Ports of Tacoma and Seattle.

The SR 167 Completion Project will also reduce barriers separating workers from employment centers by filling a transportation network gap. Currently, eastern Pierce County residents are disconnected from the urban center of Tacoma and job opportunities there that are growing at 3% annually (2015). Today, these residents travel on SR 410 and SR 162, then merge onto SR 167 for about 1 mile at which point the freeway ends. They are forced to exit the freeway and then travel local streets through multiple signalized intersections at low speeds for approximately 6 miles before reaching downtown Tacoma. The SR 167 project will provide a direct link from eastern Pierce County to the economic heart of downtown Tacoma with a new limited access freeway approximately 6 miles in length.

In the same way, the SR 509 Completion Project will ease workers’ ability to commute to and from downtown Seattle and Sea-Tac Airport by providing needed capacity. SR 509 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 Project provides the Kent valley with direct access to I-5, Sea-Tac Airport, and the Port of Seattle with the new Veterans Drive connection, which also provides redundancy to SR 516 access to I-5 from the Kent valley. The SR 509 Project also provides direct access from the south to Sea-Tac Airport, already a significant economic driver for the Puget Sound region and the entire state, generating 170,000 jobs and more than $16.3 billion in economic activity, and a better connection to I-5.

**The Puget Sound Gateway, as a network of projects, addresses problems on a broader scale**

The Puget Sound Gateway Program is a network of projects – the SR 167 and SR 509 Completion Projects address the same transportation problem: heavily congested roads leading to and from the Ports of Seattle and Tacoma and Sea-Tac Airport resulting in a lack of reliability in the movement of people and goods through

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the region and nation. Each of the two projects would independently reduce congestion in the Puget Sound region, but the overall benefits are greater if the projects are completed together under a single INFRA grant award. For this reason, in July 2015, the Washington State Legislature required 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.”

5.2 Leveraging of Federal Funding

WSDOT is requesting $111 million in INFRA grant funds to fill a funding gap in the Puget Sound Gateway Program. To minimize the size of the INFRA grant request, WSDOT has maximized the non-federal share of the Gateway Program’s funding with $1.882 billion in state, toll, and local dollars, and optimized the phasing (subject to future appropriation by the State Legislature) to realize up to $73 million in inflation savings. The requested federal funds would match 94% in non-federal sources, fulfilling the Gateway Program’s financial plan. In this way, INFRA funds for the Gateway Program will leverage federal funds in a significant way.

Self-help actions increased the resources available to address transportation funding needs

The Gateway Program has very stable and dependable sources of funding and financing to construct, maintain, and operate the project. The majority of funds to develop and construct the Gateway Program consist of state transportation revenue. In 2015, the Washington State Legislature took action to make important investments in the state’s multimodal transportation system through the 2015 CWTFP. This $16 billion, 16-year infrastructure program is funded primarily by an 11.9-cent gas tax increase that was fully phased-in on July 1, 2016. The majority of CWTFP funding is going to state highway capital, maintenance, operating, and preservation needs ($10.8 billion), with more than 17% of this highway amount going to the Gateway Program, the most of any State project in the CWTFP.

In addition to state sources of $1,566 million, the CWTFP funding for the Gateway Program also includes $130 million in local contributions and $180 million in toll bond proceeds. Combined with another $6.1 million in pre-CWTFP state funds, the total non-federal funding amounts to $1,882 million.

The utility of toll revenues to fund the Gateway Program was established through a series of toll feasibility studies WSDOT completed for both SR 167 and SR 509, most recently with the Puget Sound Gateway Project Funding and Phasing Study in 2013. In the studies, WSDOT examined the potential for variable tolling to generate revenue to help fund construction, assess the level of public support for tolls as a funding source, and examine the effects of tolling on travel demand and reducing congestion. A key finding in both corridors is that tolling would not only contribute to construction, but would also help sustain efficient traffic operations into the future.

A description of all evaluations of the project for private funding

By including $180 million in toll bond proceeds into its funding package, WSDOT has considered private funding for the Gateway Program. The leveraging of user fees with toll financing to contribute toward project funding mirrors how a toll-based Public Private Partnership (P3) would be financed.

Washington was one of the first states in the nation to enact a P3 law in 1993. An aggressive program to implement P3 transportation projects soon followed. By 1996, WSDOT selected six projects for development. One of the original six projects advanced. The Tacoma Narrows Bridge (TNB) project was completed in 2007 and developed as a P3, but the alternative financing structure for the project was replaced with a more

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36 https://www.wsdot.wa.gov/Projects/Gateway/FundingPhasingStudy.htm.
traditional financing plan to be implemented by the State Treasurer. Once the TNB project was approved for financing, the Legislature closed out the original 1993 Public/Private Initiatives program. In 2005, the Legislature redefined a Transportation Innovative Partnership (TIP) Program to evaluate transportation P3 proposals and, if warranted, enter into partnership agreements to develop transportation projects.\(^37\) Financing sources for approved TIP Program projects are limited to grant anticipation revenue bonds, TIFIA financing, credit from the state infrastructure bank, federal, state, or local revenues, and user fees.\(^38\) State law precludes private sector debt financing by requiring that project debt be issued by the state treasurer.\(^39\) As evidence of further evolution of P3 strategies in Washington State, in 2012, a comprehensive Evaluation of Public Private Partnerships was conducted for the Washington State Joint Transportation Committee that specifically included evaluations for both the SR 509 and SR 167 projects.\(^40\)

In addition, the Ports of Seattle and Tacoma, as independent municipal corporations, operate autonomously from WSDOT and state government. Their identified investments totaling $60 million of the $130 million in local Gateway Program funding serves a similar purpose as private equity in a P3 project.

**Description of fiscal constraints that affect the applicant’s ability to use non-Federal contributions**

There are no constraints limiting the use of non-federal funding contributions, other than as noted above, as private parties are excluded from serving as the obligor for the debt. The State of Washington has maximized its non-federal share for the Gateway Program to the extent it is able by committing $1.882 billion (94%) in state, toll, and local funding so that the requested federal share is only 6%.

**Description of the non-Federal share across the applicant’s transportation program, if the applicant is a regular recipient of federal transportation funding**

The Washington State Legislature has passed three significant transportation packages in the past 15 years demonstrating their commitment to addressing transportation issues in Washington. The traveling public has experienced great benefits from investments made possible by the Nickel (2003) and TPA (2005), and Connecting Washington (2015) transportation revenue packages. Most of the projects made possible by the first two packages are either completed or nearing completion, with 91% of projects completed on or under budget and 91% completed early or on schedule.\(^41\) All three packages were funded primarily by reliable funding sources, including increases in gas tax, motor vehicle excise tax, and license, permits, and fees.

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.\(^42\) 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 6% federal aid for the Gateway Program.

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

WSDOT has prepared for future operations and maintenance of the Gateway Program’s life-cycle (O&M) costs — as well as for the costs of periodic repair and replacement (R&R) of capital — with an asset

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\(^{37}\) [https://www.wsdot.wa.gov/Funding/Partners/tipp.htm](https://www.wsdot.wa.gov/Funding/Partners/tipp.htm)

\(^{38}\) RCW, § 47.29.060(1).

\(^{39}\) RCW, § 47.29.060(3).


\(^{41}\) [http://wsdot.wa.gov/accountability/](http://wsdot.wa.gov/accountability/)

\(^{42}\) [https://www.fhwa.dot.gov/fastact/estfy20162020apports.pdf](https://www.fhwa.dot.gov/fastact/estfy20162020apports.pdf)
management plan that relies on dedicated toll revenue rather than federal funding or state gas taxes. This sustainable approach ensures that O&M and R&R costs will not be underfunded in future years. With the use of toll financing, the bondholders would typically require that the toll revenues from SR 167 and SR 509 would first be used to cover their own toll collection and facility O&M costs prior to paying debt service and contributing to R&R, in order to ensure that corridors’ revenue generating capacity remains unimpeded.

Tolling on both corridors would begin in FY 2025 and continue as construction is completed, with full toll operations in place for FY 2029. By FY 2030, with construction winding down and toll systems in operation, potential gross toll revenues are forecasted to be $51.5 million per year. As these are preliminary estimates, the net toll revenues after deducting toll and facility O&M costs were adjusted down by an additional 20% to yield a FY 2030 forecast of $27.0 million. The net toll revenues would be used to fund reserve accounts for periodic capital R&R activities over time in addition to paying debt service on toll bonds, affording these corridors both operational and financial sustainability.

5.3 Innovation

WSDOT has a history of pursuing innovation in environmental review and permitting, and to encourage innovation in safety and technology.

5.3.1 Innovation Area #1: Environmental review and permitting

Because the Gateway Program is performing National Environmental Policy Act (NEPA) re-evaluation in both corridors with completion anticipated within one year (Q3 2018 for the SR 167 Project and Q1 2018 for the SR 509 Project), it is not an appropriate candidate to participate in the new approach proposed in the INFRA Notice of Funding Opportunity (NOFO). However, the process for environmental review and permitting in Washington State being used by the Gateway Program provides a potential model for environmental review and permitting from which other large, complex projects may benefit.

In 2015, the State Legislature mandated WSDOT to “streamline the permitting process by developing and maintaining positive relationships with the regulatory agencies and the Indian tribes.” As such, it is the policy of the state 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.”

The law directs WSDOT to streamline the permitting process by implementing “a multiagency permit program …consisting of appropriate regulatory agency staff with oversight and management from [WSDOT],” providing “early project coordination, expedited project review, project status updates, technical and regulatory guidance, and construction support to ensure compliance,” executing “agreements and permits with federal and state agencies to expedite the process of ensuring compliance” collaborating with permitting staff to provide complete permit application guidance, and completing “internal quality assurance and quality control to ensure that permit applications are complete before submitting them to the regulatory agencies.”

This law has been implemented by WSDOT through the implementation of 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. Permittees also have available to them the Liaison Program, which, similar to the program that USDOT proposes in the INFRA NOFO, 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)

43 RCW, § 47.85.020
44 RCW, § 47.85.005
45 RCW, § 47.85.020
dedicated to expediting portions of the environmental review for WSDOT transportation projects and reviewing and negotiating complex mitigation compensation.46

5.3.2 Innovation Area #2: use of experimental project delivery authorities

WSDOT is not proposing to use an experimental authority program because the Puget Sound Gateway Program will be delivered under the design-build method of procurement.

5.3.3 Innovation Area #3: Safety and Technology

Variable Tolling

Open road tolling of all lanes on a highway or bridge facility with tolls that vary by time of day or travel direction is a recent innovation in congestion management, safety enhancement, and revenue generation. With toll rates that vary on a schedule during a day, WSDOT can manage use of the roadway during times of peak congestion, maintaining speed and throughput with higher tolls, while also offering an incentive to motorists to use the road during less congested periods with lower tolls. Using the latest in tolling technology, variable tolls can be collected all-electronically at highway speeds with Good To Go! transponders and photos of license plates, helping to reduce congestion, improve roadway safety by eliminating toll plaza weaving, and reducing vehicle emissions. Better management of traffic flows through variable pricing on SR 167 and SR 509 will lead to a reduction in stop-and-go traffic and accompanying rear-end crashes. And by shifting traffic away from I-5 and adjacent local roads and setting tolls on a variable schedule, WSDOT will be able to positively affect road safety in the entire network.

WSDOT has successfully demonstrated the innovation of all-electronic, open road variable tolling on the SR 520 bridge, where congestion is managed and revenue generated to support vital mobility needs with the most advanced variable toll schedule in the nation, using 12 different time periods on weekdays and six on weekends. WSDOT will adopt the same innovative and proven toll technologies on the Gateway corridors, which will help provide a consistent and reliable trip for travelers, especially trucks serving the Ports of Tacoma and Seattle and Sea-Tac Airport, whose primary challenge today is schedule reliability.

Climate Adaptation

Another innovative approach WSDOT is examining to improve safety through the use of technology is its approach to climate change and extreme weather adaption on the SR 167 Completion Project. WSDOT has recognized the need to prepare its infrastructure for future threats, including higher temperatures, changes in volume and timing of precipitation, ecological effects, sea-level rise, coastal erosion, and salt water intrusion, according to the Climate Impacts Group at the University of Washington (CIG). WSDOT is working with Washington State University, Seagrant, and CIG to understand the best available research and technology for predicting future rainfall intensities and durations. This information sharing will help WSDOT determine if future predicted storms will affect the design of stormwater facilities on the project.

WSDOT is participating with FHWA and the Netherlands on an international pilot project to better understand the process for analyzing infrastructure projects and identifying adaptation strategies to help mitigate the effects of climate change to public infrastructure. The goal of the pilot is to compare climate change adaptation analytical tools from both countries on two projects. FHWA accepted the SR 167 Completion Project to test the Netherlands’ climate resilience tools and to demonstrate WSDOT’s application of FHWA’s vulnerability assessment. The Netherlands and FHWA are also interested in the SR 167 Completion Project’s innovative approach to riparian restoration and floodplain function as a potential climate resilience feature. The Netherlands selected a highway expansion project (Innova58) in South Holland in an area that

46 See http://www.wsdot.wa.gov/Environment/Liaison/.
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experiences heavy downpours, which are increasing as the climate changes, resulting in increased localized flooding and driver safety concerns.

5.4 Performance and Accountability

WSDOT proposes to apply specific, measurable outcomes upon which some or all INFRA grant funds would be conditioned to advance INFRA program goals. These conditions cover the three types of events identified in the INFRA NOFO designed to encourage accountability and align with many of the statutory INFRA program goals, as shown in Table 4:

<table>
<thead>
<tr>
<th>Proposed Performance and Accountability Metrics for INFRA Grant Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triggering Event</td>
</tr>
<tr>
<td>(1) Reaching project delivery milestones in a timely manner</td>
</tr>
<tr>
<td>(2) Making specific State or local policy changes that advance desirable transportation outcomes</td>
</tr>
</tbody>
</table>

Longer Term Commitments to Performance and Accountability

| Triggering Event | Condition | INFRA Program Goal(s) Supported |
|---|
| (1) Reaching project delivery milestones in a timely manner | Completion of SR 167 Project connection between the Port of Tacoma and I-5 by Q1 2025. Prioritizing this segment for completion will promote jobs and the economy and expedite the movement of people and goods since I-5 is a major freight corridor in WA, the economic life line of the US west coast. Thus, strengthening the ability of rural communities to access national and international trade markets, and supporting regional economic development. | • System Reliability • Freight Movement and Economic Vitality |
(2) Making specific State or local policy changes that advance desirable transportation outcomes

WSDOT will encourage the Transportation Commission to consider truck toll policies that prioritize speed and reliability of goods movements on the SR 167 and SR 509 freight corridors and promote the desired shift of trucks away from local arterials and to the SR 167 and SR 509 freight corridors. This proposal may include lower truck toll rates (closer to the two-axle auto toll rate) than exist on current state toll facilities. Such policies would demonstrate to freight carriers that SR 167 and SR 509 are important freight corridors where trucks are encouraged to travel.

(3) Achieving transportation performance objectives that support economic vitality or improve safety

Achieving the Gateway Program’s Management Goal of having vehicles travel at 45 mph 90% of the time. Variable tolling on the SR 167 and 509 priority freight corridors ensures that this target can be met early upon project completion.

Improving the condition of Hylebos Creek within 2 years over baseline conditions. Permits obtained for the Gateway Program require reconstruction and restoration of the currently-degraded Hylebos Creek.

6 Project Readiness

Planning, design, environmental review, and significant ROW acquisition have been completed, and construction is scheduled to begin in earnest in 2019 (FY 2020) to ensure the Gateway Program is ready to obligate INFRA funds well before the September 30, 2021 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. 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 need 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. One result of the practical design process was the decision to design the SR 167 interchange at I-5 as a service-level (signal controlled) Diverging Diamond Interchange (DDI), which was found to perform quite well with a much smaller footprint and cost as compared to a direct connect system level interchange.
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 in 2016 to validate base costs, schedule, and risks. 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 includes base costs in 2016 dollars, risk assignment at the 50% confidence level, and escalation to the year of expenditure for each phase. 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. A CEVP update is scheduled to occur later this calendar year.

6.1.3 Detailed Statement of Work

The SR 167 Completion Project will construct the last four miles of the SR 167 freeway between Puyallup and Fife, as well as two miles of new freeway connecting the Port of Tacoma with I-5 in Fife. These new limited access freeway segments will have interchanges at SR 161, Valley Avenue, I-5, 54th Avenue, and SR 509 at the Port of Tacoma, and consist of elevated roadways constructed on embankment or on bridges to cross over multiple local streets, the Union Pacific railroad Tacoma to Seattle line, Wapato Creek, and I-5. As such, approximately 8 million tons of borrow material will be required to build the highway embankment and 13 bridges will be required. 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 start construction by Q3 2019.

The SR 509 Completion Project starts where SR 509 currently ends at S. 188th Street. The existing SR 509 / S. 188th St. interchange will be reconstructed into a half-diamond interchange to the north and will not preclude the south half of the diamond interchange from being constructed in the future. The new segment of SR 509 will be 2 lanes in each direction. Next, SR 509 connects to 28th/24th Ave S with a half-diamond interchange to the south. This will serve as a new connection to Sea-Tac Airport, improving travel times to and from the south.

East of 28th/24th Ave S, SR 509 passes under SR 99 and Sound Transit’s Federal Way Link Extension (FWLE) project comes south out of 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 208th Street, so the project includes a new street alignment to maintain connectivity. Next, SR 509 climbs up to make its connection with I-5 around S 212th 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 272nd Street.

The SR 509 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 28th/24th Ave S, including the interchange with I-5; and Stage 2 includes the extension of SR 509 to S 188th Street. This INFRA application and any INFRA funds awarded from it apply to Stage 1, which is anticipated to start construction by Q2 2021.

The Gateway Program includes new segments of regional trail projects. The SR 167 Project will connect walking/biking trails, including the regional Interurban Trail, in the Fife/Milton area and extend non-motorized facilities over the new 70th Avenue East bridge to provide a regional connection to downtown Tacoma. The SR 509 Project is funding the final segment of the Lake to Sound trail, a 16-mile non-motorized trail extending from Lake Washington to the Puget Sound shoreline in coordination with the City of SeaTac and King County.

6.2 Project Schedule

The Gateway Program schedule is aggressive, but reasonable, having been reviewed in 2016 by a team of subject-matter experts and cost and risk experts assembled for the CEVP review. Error! Reference source not found. summarizes key project schedule milestones.

<table>
<thead>
<tr>
<th>Table 5. Puget Sound Gateway Program - Milestone Schedule (Calendar Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Project Milestone</strong></td>
</tr>
<tr>
<td>NEPA Re-evaluation</td>
</tr>
<tr>
<td>Interchange Justification Report</td>
</tr>
<tr>
<td>30% Design</td>
</tr>
<tr>
<td>Design Approval</td>
</tr>
<tr>
<td>ROW Acquisition</td>
</tr>
<tr>
<td>INFRA Grant Obligation</td>
</tr>
<tr>
<td>RFQ Stage 1</td>
</tr>
<tr>
<td>RFP Ad Stage 1</td>
</tr>
<tr>
<td>Issue NTP for Stage 1 Construction Contract</td>
</tr>
<tr>
<td>Stage 1 Tolling Begins (FY 2025)</td>
</tr>
<tr>
<td>End Construction and Closeout Stage 1</td>
</tr>
<tr>
<td>RFQ Stage 2</td>
</tr>
<tr>
<td>RFP Ad Stage 2</td>
</tr>
<tr>
<td>Issue NTP for Stage 2 Construction Contract</td>
</tr>
<tr>
<td>Stage 2 Tolling Begins (FY 2029)</td>
</tr>
<tr>
<td>End Construction and Closeout Stage 2</td>
</tr>
</tbody>
</table>

As Table 5 shows, all necessary activities will be completed to allow grant funds to be obligated sufficiently in advance of the September 30, 2021 statutory deadline. INFRA grant obligation has been incorporated into the schedule, and is anticipated to occur by the beginning of state FY 2019 (Q3 2018), providing ample time to ensure that any unexpected delays will not put the funds at risk of expiring before they are obligated. The SR 167 Completion Project can begin construction quickly upon receipt of a 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.

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 the construction of certain advanced wetland mitigation sites. However, new permits will needed prior to construction of the SR 509 and SR 167 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. Forest Practices Permit and Aquatic Lands Use Authorization from the Washington Department of Natural Resources;
7. Airport Highway Clearance from the Federal Aviation Administration; and
8. 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.

In addition to specific permits, other likely actions or approvals include:

3. Section 4(f) Approval (related to impacts to parks and recreational land, wildlife refuges, and historic sites) from FHWA, U.S. Department of the Interior, and the Cities of Des Moines and Kent;
4. Section 7 Consultation (related to impacts to threatened or endangered plant and animal species) from the U.S. Fish and Wildlife Service and National Marine Fisheries Service; and
5. Section 106 Review (related to impacts on historic properties) from the Washington State Office of Archaeology and Historic Preservation (OAHP) and the Advisory Council on Historic Preservation.

Environmental Studies

FHWA issued a ROD in 2003 for the SR 509 Completion Project. The need for the project under the ROD was to create system linkages, accommodate travel demand and capacity needs, and improve intermodal relationships. The FEIS represents the collaboration of six agencies who signed the document: Port of Seattle, City of SeaTac, City of Des Moines, King County, WSDOT and FHWA. FHWA also issued a Tier I ROD in 1999 and a Tier II ROD in 2007 for the SR 167 Completion Project.

In 2017, FHWA and WSDOT initiated the NEPA re-evaluations, focusing on: a) documenting the preliminary preferred scenario, including any potential impacts of phased construction; b) the legislative intent to toll both project extensions and the effects/benefits of the operation of tolling; c) any updated baseline/affected environment information since the RODs were published; and d) any other updates needed to address design refinements. The Re-Evaluations, anticipated to be completed by Q3 2018 for SR 167 and Q1 2018 for SR 509, will determine whether there are any new significant impacts compared to those effects previously documented within the RODs, and whether the RODs remain valid. If not, WSDOT will need to complete Supplemental EIS documents.

Discussions with USDOT Modal Administrations

FHWA participates in the Executive and Steering Committee for the SR 509 and SR 167 projects. WSDOT holds monthly meetings and ongoing coordination with FHWA’s Washington Division Office, which approved the current strategy and Re-Evaluation approach and provided concurrence on it in November 2016.

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48 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.
Public Engagement

The Puget Sound Gateway Program improvements reflect meaningful community input provided during project development. WSDOT has worked closely with stakeholders and communities along both project alignments since 1991.

Public engagement for the SR 167 Completion Project has been extended to interested businesses, trucking and freight associations, ports, community organizations and municipalities. Public involvement took the form of workshops, open houses, public meetings, and hearings.\(^{49}\) In addition to these, public involvement also included coordination with the Puyallup Tribe of Indians to ensure Tribe concerns were considered and incorporated where feasible.\(^{50}\)

Community involvement with the SR 509 project has been ongoing since May 1992.\(^{51}\) Five public meetings were held regarding the previous, corridor-level EIS. Seven public meetings were held throughout the development of the alternatives. Meetings have also been held with interested groups and individuals, such as individual city councils, business owners and managers, and neighborhood groups with special emphasis on low-income, minority, and limited-English proficient residents.

Since 2015, WSDOT has coordinated with environmental organizations (e.g., the Citizens for a Healthy Bay, Tahoma Audubon Society) on project development and design, along with property owners and regulatory authorities regarding certain contaminated properties in the project corridor that will affect project development and design. Stakeholder involvement is mandated by the CWTFP. Activities included coordination with stakeholders via a series of Executive and Steering Committee meetings, as well as five Open Houses over the last two years. Public engagement meeting dates and materials are available at the SR 167 and SR 509 project libraries. Community and public involvement will continue in the future as the project progresses through design, permitting and construction.

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 processes early in the project programming and project development stages. The signatories included FHWA, National Marine Fisheries 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

The first stages of the SR 167 and SR 509 Completion Project are included in the approved 2017 to 2020 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.\(^{52}\) They are also included in the Puget Sound Regional Council’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.

\(^{49}\) Ibid.
\(^{50}\) Ibid.
\(^{52}\) WSDOT, Washington State Transportation Improvement Program 2017 to 2020, pp. 830 and 913.
Both the SR 167 and SR 509 Completion Projects were identified in the 2014 Washington State Freight Mobility Plan as unfunded freight investments for highways. 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 August 2017 Draft 2017 WSDOT 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.” The 2017 Washington State Freight System Plan will be completed by December 2017.

6.4 Assessment of Project Risks and Mitigation Strategies

Certain risks to project implementation and completion have been identified and analyzed through the CEVP review. Table 6 presents the top five risks, as well as strategies to mitigate them if they occur. A proactive, detailed risk management plan will be developed following selection of a Preliminary Preferred Scenario.

<table>
<thead>
<tr>
<th>RISK</th>
<th>DESCRIPTION</th>
<th>COST RISK ($M)</th>
<th>MITIGATION STRATEGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluctuating Market Conditions</td>
<td>At the time of bid, market conditions, which are currently favorable, may be different.</td>
<td>$25.1</td>
<td>Market conditions are difficult to predict even a few years into the future, so a provision to accept this risk is included in our estimate. This will be a point of emphasis in our upcoming CEVP update later this year.</td>
</tr>
<tr>
<td>Changed Seismic Design Criteria for New Structures</td>
<td>Structures in the program are being designed to current code, but due to the long time frame of the program, more stringent codes could be adopted.</td>
<td>$10.2</td>
<td>By using existing structural analysis and seismic design tools, WSDOT will seek to mitigate this risk through smarter design and avoid higher costs during construction.</td>
</tr>
<tr>
<td>Additional Local Street/Intersection Improvements</td>
<td>Local municipalities could insist on additional mitigation for operational traffic impacts.</td>
<td>$9.7</td>
<td>WSDOT is working closely with all impacted local municipalities to understand and anticipate local operational mitigation requirements.</td>
</tr>
<tr>
<td>Changed Project Delivery Methods and/or Packaging</td>
<td>Current costs are based on 2 to 3 moderate-sized design-build packages for each project. Additional smaller packages or different delivery methods could add costs.</td>
<td>$9.5</td>
<td>WSDOT’s well-structured and proven methodology for evaluating and selecting the most appropriate delivery method and packaging will be used to minimize this risk.</td>
</tr>
<tr>
<td>Additional Mitigation for Local Impacts due to Construction</td>
<td>Local municipalities could insist on additional mitigation for traffic and other impacts to local infrastructure during construction.</td>
<td>$8.0</td>
<td>WSDOT is working closely with all impacted local municipalities to understand and anticipate local mitigation requirements due to construction.</td>
</tr>
</tbody>
</table>

54 WSDOT, Draft Washington State Freight System Plan, pp. 54 and 84.
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 state FY 2019 (3Q 2018) or by federal FY 2019, at which time construction will have already begun. As this is before the September 30, 2021 obligation date for federal FY 2018 INFRA grant funds, and meets statutory requirements as shown in Table 7 below.

**TABLE 7. LARGE PROJECT REQUIREMENTS MATRIX**

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the project generate national or regional economic, mobility, safety benefits?</td>
<td>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.</td>
</tr>
<tr>
<td>2. Is the project cost effective?</td>
<td>Yes. Cost-effectiveness is demonstrated in the Benefit-Cost Analysis Report attached to this application (Appendix A - Attachment 2).</td>
</tr>
<tr>
<td>3. Does the project contribute to one or more of the Goals listed under 23 USC 150 (and shown below)?</td>
<td>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. (7) Reduced project delivery delays.— See Section 6 (Project Readiness).</td>
</tr>
<tr>
<td>4. Is the project based on the results of preliminary engineering?</td>
<td>Yes. See Section 6.1 (Technical Feasibility).</td>
</tr>
<tr>
<td>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?</td>
<td>Yes. See Sections 4 (Grant Funds, Sources and Uses of Project Funds) and 5.2 (Merit Criteria - Leveraging of Federal Funds).</td>
</tr>
<tr>
<td>5b. Are contingency amounts available to cover unanticipated cost increases?</td>
<td>Yes. See Sections 4 (Grant Funds, Sources and Uses of Project Funds) and 5.2 (Merit Criteria - Leveraging of Federal Funds).</td>
</tr>
<tr>
<td>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?</td>
<td>Yes. An INFRA award would bridge a funding gap between the total project cost and available sources of funding. See Sections 4 (Grant Funds, Sources and Uses of Project Funds) and 5.2 (Merit Criteria - Leveraging of Federal Funds).</td>
</tr>
<tr>
<td>7. Is the project reasonably expected to begin construction not later than 18 months after the date of obligation of funds for the project?</td>
<td>Yes. See Sections 6.1 (Technical Feasibility) and 6.2 (Project Schedule).</td>
</tr>
</tbody>
</table>