Partnersing for the Future of I-5
FY 2019 BUILD Grant Application
# Partnering for the Future of I-5

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<th><strong>Project Name</strong></th>
<th>Partnering for the Future of I-5</th>
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<tr>
<td><strong>Applicant</strong></td>
<td>Washington State Department of Transportation &amp; City of Seattle</td>
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</table>
| **Contact Information** | Robin Mayhew, Management of Mobility Director  
Washington State Department of Transportation  
401 2nd Avenue South, Suite 300, Seattle, WA 98104  
(206) 464-1264  
MayhewR@wsdot.wa.gov |
| **Project Type** | Urban |
| **Project Description** | *Partnering for the Future of I-5* brings together WSDOT, the City of Seattle and regional partners to create a joint approach for comprehensively addressing the I-5 system to:  
- Optimize the existing system and invest strategically  
- Embrace new and emerging technologies  
- Coordinate land use and transportation  
- Increase travel choices  
- Keep freight and goods moving  
- Maintain and preserve our assets.  

The project is a two-tiered study that includes:  

1. **TIER 1: Systemwide Scenario Analysis** - A collaborative effort to conduct scenario analysis for the 107-mile stretch of I-5 between Tumwater and Arlington. This will explore approaches on and off I-5 for addressing a future I-5 system. This work would generate agreement among stakeholders and communities along I-5 about the range of strategies, actions and investments as part of a long-range master plan for I-5.  

2. **TIER 2: Community Connections & Leveraged Development** – Within the most constrained portion of the I-5 corridor, an in-depth analysis of I-5’s seismic safety and operational characteristics will help identify opportunities for coordinated investment in system upgrades to achieve multiple benefit outcomes, including opportunities to lid segments of I-5 within downtown Seattle and leverage new development and investment.  

Conclusions from *Partnering for the Future of I-5* will be transferable, with the solutions from the Seattle analysis serving as a template for efforts elsewhere in the Puget Sound region and across the nation. |
| **Project Cost** | $5,250,000 |
| **BUILD Funds Requested** | $4,200,000 |
| **Local Match Source(s) & Amounts** |  
- $750,000 - WSDOT  
- $300,000 - City of Seattle  
Total: $1,050,000 |
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1 COVER LETTER

July 15, 2019

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

Dear Secretary Chao:

The Washington State Department of Transportation (WSDOT) and City of Seattle are pleased to jointly submit Partnering for the Future of Interstate-5 (I-5) under the FY 2019 Better Utilizing Investments for Leveraging Development (BUILD) program. The I-5 system is in critical need of long-term solutions that capture emerging technologies and mobility innovations, address system resiliency, and establish sustainable funding for the backbone of Washington’s transportation system and one of the state’s most important infrastructure assets. This central pillar of our state’s economy connects commuters, markets, and goods between densely populated cities, major ports, employment centers and rural communities, but is unable to meet current and future demands, as well as emerging challenges.

These challenges are concentrated where I-5 bisects downtown Seattle. This pinch-point experiences extreme congestion and acts as a barrier for surrounding communities. With nearly 2 million additional residents and over a million additional jobs expected in central Puget Sound by 2050, and continued high growth expected within Seattle and its downtown core, I-5 will become even more strained if a long-term plan with comprehensive solutions is not put in place. Now is the time to act. That is why WSDOT and Seattle are Partnering for the Future of I-5.

The two-tiered study will build on WSDOT’s current and near-term capital and operational investments to address systemwide mobility. The first tier—Systemwide Scenario Analysis—will collaboratively screen concepts and analyze scenarios for the 107-mile stretch of I-5 between Tumwater in Thurston County and Arlington in Snohomish County. The second tier—Community Connections and Leveraged Development—will be focused within Seattle, investigating mobility, seismic, structural, urban design, and financial solutions to alleviate congestion, bridge the highway, support new uses, and reconnect divided neighborhoods. It will jointly examine improvements for I-5 operations and the downtown Seattle street network while evaluating lid opportunities that could improve seismic safety and leverage new development and investment. This is a particularly exciting aspect of the project that can serve as a transferrable template for analyses around the Puget Sound region and similar efforts across the nation.

We greatly appreciate USDOT’s consideration of the requested investment in Partnering for the Future of I-5 and humbly await your positive response.

Sincerely,

Roger Millar
Secretary, Washington State Department of Transportation

[Signature]

Jenny Durkan
Mayor, City of Seattle
2 PROJECT DESCRIPTION

2.1 INTRODUCTION

Interstate 5 (I-5) is the backbone of Washington’s transportation system and one of the state’s most important transportation assets. It powers the regional economy, linking statewide markets to major ports up and down the West Coast, and connects people to jobs, goods, and each other. All of the transportation systems it connects to, including local streets, highways, transit, freight and national defense infrastructure, rely heavily on I-5.

I-5 faces major challenges due to aging infrastructure, congestion, and dramatic growth, threatening public safety and the region’s economic vitality. The Seattle region now ranks 6th in the U.S. for hours spent in traffic1 with congestion on this metropolitan section of I-5 rising 29% since 20142 (Figure 1). At the same time, the economy in the Seattle area is booming, with employment growing at a higher rate than the nation. Continued, extensive growth is expected. Housing prices and population growth have soared near these jobs, driving a booming housing market in more affordable but outlying areas along the I-5 system. This transportation spine is critical to daily life – and is highly susceptible to failure in the event of a major earthquake.

The Washington State Department of Transportation (WSDOT) and City of Seattle, in partnership with private industry and community groups, have joined in a commitment to the efficient operations and long-term resilience of the I-5 system. We have agreed to work together to implement near-term “no regret” solutions while taking steps to work towards a comprehensive master plan that sets the stage for the best, lasting solutions and coordinated action, including potential changes to the downtown Seattle street grid where it intersects with the I-5 system.

At an unknown but potentially enormous cost, WSDOT and Seattle acknowledge that an in-kind replacement of the 50-year old interstate will not meet the current and future multimodal transportation needs of Seattle and central Washington residents, businesses, and visitors. Improvements to protect vehicular and freight movements are required to maintain and improve the economic competitiveness of Seattle. To create a truly multimodal corridor, an intensive planning and analysis effort is needed to inform future master planning and investment decision-making. WSDOT and Seattle are, therefore, Partnering for the Future of I-5 and jointly submitting this grant application.

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2 WSDOT, 2017 Corridor Capacity Report, p. 11.
2.1.1 GRANT REQUEST

WSDOT and Seattle are requesting $4.2 million in FY 2019 BUILD discretionary grant funds for the Partnering for the Future of I-5 project. These federal funds will be leveraged by $0.75 million in state funds and $0.3 million in local funds.

2.2 PROJECT DESCRIPTION

Partnering for the Future of I-5 will identify and select strategies to address the transportation and development needs of the 107-mile stretch of I-5 between Tumwater in Thurston County to the south up to Arlington in Snohomish County to the north, with a detailed focus on Seattle. The methodology and findings of Partnering for the Future of I-5 will be transferable to similar efforts across the nation.

The project will build on near-term capital and operating investments already underway and be carried out through a two-tiered partnership study:

— **Tier One: Systemwide Scenario Analysis** – WSDOT will lead a collaborative effort to screen concepts and scenarios for the entire 107-mile stretch of I-5 between Tumwater and Arlington. Given future multimodal transportation demands, this project will lay the foundation for an interconnected mobility system that supports the region’s long-term economic vitality.

— **Tier Two: Community Connections and Leveraged Development** – The in-depth analysis within the most constrained portion of I-5 in downtown Seattle will focus on seismic risks, structural conditions, and operational characteristics of the I-5 infrastructure, including its relationship to operations of Seattle’s downtown street network. It will have a more focused audience and require oversight and engagement of constituencies within Seattle. Together with analysis currently being undertaken by the City of Seattle related to potential lidding of I-5 segments within this area, this study will inform opportunities for joint investment and project bundling that could replace, relocate, or modify highway structures, as well as adjacent street networks related to I-5 access, to achieve multiple transportation and development objectives. These objectives include the opportunity to reconnect neighborhoods that have been divided for over 50 years by I-5 and create new open space and development opportunities in the most land-constrained area of Seattle.

The two study components complement each other in terms of geographic scope, depth of analysis, and the stakeholder groups and initiatives the studies will build from (Table 1). WSDOT and Seattle have partnered on many of these initiatives, and this continuing partnership will be at the core of Partnering for the Future of I-5. We

<table>
<thead>
<tr>
<th>Table 1. Two Complementary Tiers of Partnering for the Future of I-5</th>
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<tr>
<td><strong>Geographic Scope</strong></td>
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<td><strong>Analysis</strong></td>
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<td><strong>Stakeholders and Initiatives to Build From</strong></td>
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will work together on the Community Connections and Leveraged Development task, and WSDOT will continue to lead the broader regional partnership, including the City of Seattle, to address the future of the I-5 system through the Systemwide Scenario Analysis task. Table 2 summarizes WSDOT and Seattle’s shared interests and objectives that will guide development of the Community Connections and Leveraged Development effort.

### Table 2. Before and After: A Summary of Project Scope and Shared Benefits

<table>
<thead>
<tr>
<th>I-5 System</th>
<th>Current Conditions</th>
<th>Future Condition</th>
<th>Long term Economic Impact</th>
<th>Study Outcomes</th>
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<tbody>
<tr>
<td></td>
<td>Recurring Congestion</td>
<td>Improved freeway operations and mode choice</td>
<td>Increased freeway throughput for people and goods</td>
<td>Action plan for ramp metering, variable speed limits, and other improvements to freeway operations</td>
</tr>
<tr>
<td></td>
<td>Preventable crash patterns</td>
<td>Reduced crashes</td>
<td>Fewer fatalities and injuries on our freeways</td>
<td>Action plan for effective safety improvements along the system</td>
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<tr>
<td></td>
<td>Unsustainable funding</td>
<td>Sustainable funding model</td>
<td>More sustainable long-term funding for future preservation and maintenance</td>
<td>Analysis of value capture tools and other non-traditional sources of long-term funding options</td>
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<tr>
<th>I-5 Within Downtown</th>
<th>Current Conditions</th>
<th>Future Condition</th>
<th>Long term Economic Impact</th>
<th>Study Outcomes</th>
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<tr>
<td></td>
<td>Extreme Congestion</td>
<td>Improved freeway operations and mode choice</td>
<td>Increased freeway throughput for people and goods</td>
<td>Recommendations for changes to on- and off-ramps to improve operations and safety on I-5 as well as adjacent street network</td>
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<tr>
<td></td>
<td>Costly Delay</td>
<td>Reduced delay</td>
<td>Less time wasted in stalled traffic</td>
<td>Action plan for ramp metering, variable speed limits, and other improvements to freeway operations</td>
</tr>
<tr>
<td></td>
<td>Seismic Vulnerability</td>
<td>Improved resilience</td>
<td>Freeway system less vulnerable to traffic incidents or natural disasters</td>
<td>Action plan for transportation demand management and mode choice tools to maximize limited space</td>
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<thead>
<tr>
<th>Downtown Seattle Community</th>
<th>Current Conditions</th>
<th>Future Condition</th>
<th>Long term Economic Impact</th>
<th>Study Outcomes</th>
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<tbody>
<tr>
<td>Trenched Freeway</td>
<td>Reduced exhaust in urban core</td>
<td>Improved health outcomes from reduced air and noise pollution</td>
<td>Structural analysis for full or partial lid in conjunction with seismic and operational improvements</td>
<td></td>
</tr>
<tr>
<td>Air pollution</td>
<td>Reduced noise pollution</td>
<td>Newly available land in most constrained parts of downtown</td>
<td>Alternatives analysis for improved freeway access in relation to downtown street network</td>
<td></td>
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<tr>
<td>Noise pollution</td>
<td>New &quot;land&quot; in a highly constrained district</td>
<td>Increased viability of non-motorized and other low-impact travel modes</td>
<td>Analysis of potential value capture mechanisms and joint funding options</td>
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<tr>
<td>Lack of open space</td>
<td>New connections</td>
<td>Increased investment in the freeway vicinity</td>
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<tr>
<td>Lack of connectivity</td>
<td>Increased land value and economic output</td>
<td></td>
<td></td>
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<tr>
<td>Constrained land use</td>
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### 2.2.1 EXPECTED OUTCOMES

The Systemwide Scenario Analysis will result in agreement among stakeholders and communities that rely on the I-5 system about the range of strategies, actions and investments on and off I-5 to consider
in developing a long-range master plan for I-5. It would set the stage for a detailed environmental assessment leading to a preferred alternative set of solutions for the I-5 system and the communities and transportation systems that rely on I-5.

The *Community Connections and Leveraged Development* in-depth analysis will result in a strategic plan for I-5 and the surrounding road network in downtown Seattle to address operational efficiencies and structural deficiencies while leveraging investments for community building. It will serve as a unique partnership model for addressing mobility, operational, seismic, economic development, and community development needs in similarly congested and constrained urban freeway chokepoints across the state and nation.

Both tiers of *Partnering for the Future of I-5* are designed to encourage development and private investment along, and potentially on, the I-5 system. The project will identify, analyze, and select scenarios consisting of multimodal transportation projects and programs that have the most potential to address:

- Long-term system preservation and resiliency;
- Access to/from and mobility along I-5 and surface street networks;
- Future travel needs and emerging technologies;
- Community-building;
- Equitably meeting the needs of residents, businesses and commuters, including economically disadvantaged populations across the region; and
- Integrating near- and long-term investments in and around I-5, including value-capture (see Section 4.2.1, Innovative Financing).

Scenarios will be selected for further study based on their transferability and applicability. Solutions from the Seattle-focused *Community Connections and Leveraged Development* analysis will also be replicable in other urban systems across the state, region, and nation.

### 2.3 PROJECT LOCATION

*Partnering for the Future of I-5* is in the Seattle/Tacoma/Everett, Olympia/Lacey/ Tumwater, and Marysville/Tulalip Urbanized Areas (UA) within Washington Congressional Districts 2, 6, 7, 9, and 10 (Figure 2). The *Community Connections and Leveraged Development* component is within the Seattle/Tacoma/Everett Urbanized Area in Washington.
Congressional District 7. For purposes of the FY 2019 BUILD grant program, Partnering for the Future of I-5 is an urban project located within three UAs, as designated by the U.S. Census Bureau, which, in the 2010 Census, had a total population of 3.68 million.³

I-5 is the state’s most important north-south interstate system. It supports Washington’s trade with the rest of the U.S., Canada, and Asia and links marine and air cargo port complexes with essential state warehouse districts, industrial lands, intermodal transportation hubs, and major population centers.

### Figure 3. The Community Connections and Leveraged Development Study Area

![Community Connections and Leveraged Development Study Area](image)

### Geospatial Boundaries of Analysis

Source: I-5 Lid Feasibility Study

³ The Olympia/Lacey/Tumwater and Marysville/Tulalip Urbanized Areas each have populations under 200,000 (188,095 and 156,338, respectively) and are considered rural for purposes of the FY 2019 BUILD program. However, the Partnering for the Future of I-5 project should be considered an urban project since the majority of the I-5 corridor to be studied is located within the Seattle/Tacoma/Everett UA, which has a population of 3.33 million. In fact, the Puget Sound region’s population has more than doubled, growing from 2 million in 1969 to 4.3 million in 2017, according to the Puget Sound Regional Council.
I-5 is a crucial connector for the Ports of Seattle and Tacoma – operating as the Northwest Seaport Alliance – and Seattle-Tacoma International Airport (Sea-Tac), which handle $127 billion in foreign imports and exports (2016). The interstate is an economic lifeline, supporting $550 billion in business income from freight-dependent industries.

The entirety of I-5 is included on the National Highway System (NHS) for oversized trucks and is designated as an FHWA Primary Freight Network (PFN) route under the 2014 Washington State Freight System Plan. I-5 is on the National Highway Freight Network’s Primary Highway Freight System, which Congress established in the Fixing America’s Surface Transportation Act (FAST Act) as one of the most critical highways of the U.S. freight transportation system in order to strategically direct Federal resources and policies toward improved performance of highway portions of the U.S. freight transportation system.4 It is also a T-1 state-designated high volume truck corridor carrying the highest tonnage.

The Community Connections and Leveraged Development study of the I-5 pinch point will cover a one-mile stretch of I-5 through downtown Seattle and the immediate downtown street network (Figure 3). Between the I-5/I-90 interchange and the southern edge of the downtown Seattle study area, I-5 travels on an elevated viaduct over the International District and splits into collector–distributor lanes that serve exits to downtown Seattle. In the study area’s south end, the thirteen-lane freeway is depressed in an open trench that consumes the full block between 6th and 7th Avenues, dividing downtown to the west and the First Hill neighborhood (home to major medical institutions) to the east. A set of reversible express lanes appear in the median near Madison Street, then I-5 passes under two lid structures built atop sections of the highway: Freeway Park, a landscaped city park between Seneca and Union Streets; and the Washington State Convention Center between Union and Pike Streets. At the north end of the downtown Seattle study area, I-5 passes a 20- to 30-foot retaining wall along the edge of the Capitol Hill neighborhood. To the west are the South Lake Union and Cascade neighborhoods. Collectively, there are 10 center city neighborhoods that comprise four regionally-designated urban growth centers, which are bisected by I-5.

### 2.4 PROJECT BACKGROUND

WSDOT and the City of Seattle are pursuing BUILD funding for Partnering for the Future of I-5 due to our shared recognition that mutually beneficial opportunities exist to address I-5 system challenges that can leverage recent WSDOT and City of Seattle efforts. These challenges must be confronted jointly through this study before other key planning efforts can proceed. Identifying and selecting the best options for maximizing the performance of I-5 will inform a future I-5 system master plan, downtown Seattle strategic mobility plan, and environmental review and preliminary engineering for jointly prioritized and development-leveraging transportation projects.

### 2.4.1 I-5 SYSTEM CHALLENGES

On May 14, 1969, the final section of I-5 opened, completing a new road link to Vancouver, British Columbia to the north and San Diego, California to the south. Now, at half a century old, I-5 is a necessary evil to the many commuters and businesses that regularly utilize the highway. In Seattle, left-side exits cause traffic to weave and jam, reversible lanes create bottlenecks for reverse commuters, and

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the interstate’s trenched design creates a visual, auditory, and olfactory barrier between the neighborhoods it cuts through.

The bottom line is that I-5 is underperforming and falling apart faster than it can be fixed. I-5 will likely fail during a major seismic event, leaving the city and region paralyzed for a significant time (see text box). Today, it is chronically-congested and has maintenance issues that often require emergency repairs during the middle of rush hour. The high occupancy vehicle (HOV) system, designed to move more people with fewer vehicles, is operating today with the same levels of congestion as general purpose lanes, with speeds below performance targets. The most challenging stretch of the 107-mile system bisects the heart of Seattle, acting as a pinch-point that experiences daily traffic congestion and creates a barrier for communities east and west. The worsening trends of congestion, delayed maintenance, and community and environmental degradation have already started to erode the region’s quality of life, global competitiveness, ability to attract business, and movement of goods and services, leading to an increase in the cost of living and business for all. Current public funding and financing is not sufficient to address the enormity of these challenges.

Substantial population growth combined with limited space, rapidly developing technology, and changing demographics require that WSDOT and Seattle work together to think differently about how we plan for the future. Another nearly two million residents and over one million jobs are expected in the central Puget Sound by 2050, with the highest growth expected in Seattle and its downtown core. Because homes and commercial buildings are so close to I-5 and all traffic in and out of the city from north, east and west must travel over limited-capacity bridges, widening the roadway alone, without enhancing other modes of transportation, is not a feasible approach to prepare for the corridor’s – and particularly, downtown Seattle’s – growing travel demands. Considering roads alone as the long-term solution would require significantly more miles of travel lanes to match anticipated demand. Traffic will continue to frustrate commuters and the freight industry who rely on I-5, and the condition of I-5 will continue to degrade if a long-term plan with comprehensive solutions and investment strategies is not in place soon.

### 2.4.2 I-5 SYSTEM PARTNERSHIP

To take the first step toward a strategic, long-term plan for the I-5 system, the I-5 System Partnership was formed in 2017 as a collaborative group of diverse stakeholders representing cities and counties, the business and freight industries, community organizations, transit, bicycle and pedestrian advocates, military bases, and federal and state resource agencies. The group was charged with creating a shared vision for the 107-mile I-5 system in central Washington from Tumwater to Arlington that includes 60%
of the state’s population. The I-5 System Partnership worked for a year to identify goals and strategies for the future of the I-5 system, agreeing that doing nothing is not an option any longer.

The Partnership identified six strategies in its May 2019 Call to Action report to help achieve these goals, which will serve as a blueprint for a comprehensive I-5 master plan:

— **Optimize the existing system and invest strategically** – consistent with WSDOT’s Practical Solutions approach to project planning and management, use data-driven performance measures and local partner engagement to seek lower-cost approaches and efficient funding mechanisms;

— **Embrace new and emerging technologies** – assess how emerging technologies change the ways in which people interact, work, travel, and shop, and how they can positively impact safety and mobility on the I-5 system;

— **Coordinate land use and transportation** – make transportation and land use decisions considering how to maximize accessibility and make better use of resources;

— **Increase travel choices** – optimize access to public transportation and non-motorized travel options to increase system efficiency;

— **Keep freight and goods moving** – make freight transportation an intrinsic part of the I-5 system solutions; and

— **Maintain and preserve our assets** – take care of the basic investments that are already in place.

To advance the goals and strategies of the I-5 System Partnership, both near-term improvements and a long-range comprehensive plan for the 107-mile I-5 system are critical. WSDOT is currently carrying out the Near-Term I-5 Action Agenda. This effort worked with stakeholders of the I-5 system to identify low-cost (up to approximately $3 million), high-value, actionable projects and programs to improve performance of the I-5 system that could be implemented within 0 to 4 years. Examples of recommended actions include ramp metering projects, parking management programs, initiatives to encourage non-single occupant vehicle (SOV) travel to transit hubs, first-/last-mile access improvements near transit stations, system resiliency actions, and new policy and planning initiatives. The set of actions developed through this process are now in the early stages of implementation and are helping to address I-5’s needs today.

Leveraging these near-term actions, WSDOT and Seattle are jointly seeking BUILD funds to undertake scenario planning that will identify and prioritize long-term solutions for the 107-mile I-5 system. The *Systemwide Scenario Analysis* will be a collaborative effort with WSDOT leading a broad regional partnership, including the City of Seattle and other I-5 System Partnership representatives, to conduct concept screening and initial scenario analysis. This analysis will explore potential approaches on and off I-5, including the regional HOV system, for optimizing the future I-5 system.

### 2.4.3 PLANNING FOR I-5 IN SEATTLE

While the I-5 System Partnership was setting goals and high-level strategies for the 107-mile stretch of I-5 in central Puget Sound, the City of Seattle established a vision and roadmap for its transportation network, including the I-5 system through downtown Seattle, through its planning efforts. The City of Seattle’s [Comprehensive Plan](#) set the core values of community, environmental stewardship, economic opportunity and security, and race and social equity, and it defined an urban village strategy that concentrates growth so it can be efficiently served by investment in parks, utilities, transportation and other infrastructure. In-depth mobility blueprints consistent with the Comprehensive Plan are provided by the [Seattle Pedestrian Master Plan](#), [Bicycle Master Plan](#), [Transit Master Plan](#), and [Freight Master Plan](#).
In 2018, the City of Seattle partnered with King County Metro, Sound Transit, and the Downtown Seattle Association, in coordination with WSDOT and the Port of Seattle, to undertake the Imagine Greater Downtown (IGD) visioning process to define the future of mobility and public space in the heart of Seattle. IGD has articulated seven “Big Ideas” for the next twenty years, with near-term priorities for interagency partnership and action. With a planning horizon of 2035, greater downtown — already the densest neighborhood and largest employment center in the Pacific Northwest — expects another 50,000 residents (joining 90,000 current residents) and 20,000 more jobs (joining 300,000 existing jobs). IGD asked stakeholders how streets, sidewalks and public spaces could be best used to create great places for people of all ages and cultures, recognizing that 40% of land in the greater downtown area is devoted to streets and sidewalks, 6% is public space, and the rest supports an increasingly dense environment of buildings and other functions.

IGD sought public input online, at open houses, via a community Advisory Group, and through pop-up events and focused conversations. Through this effort, a first-ever long-term vision plan for mobility and public space in greater downtown Seattle is nearly complete, organized around seven “Big Ideas”:

1. **Connect Us to the Water** – inspiring and interactive experiences on the lake, sound and in public spaces;
2. **Stitch the I-5 Divide** – reconnect neighborhoods and improve access over, under, and across I-5;
3. **Greening Greater Downtown** – infuse more parks and nature in the urban landscape;
4. **Great Places for Community Life** – distinct neighborhoods with inviting places and destinations;
5. **Streets We Love, Streets that Work** – safe, sustainable, and well-organized streets for every form of travel;
6. **Excellent Transit Experience** – people prefer transit to access and travel within greater downtown; and
7. **Great Hubs, Active Spaces** – celebrate culture and arrival, create seamless mobility connections, and reinforce the gateway portals to greater downtown.

One of the Big Ideas — Stitch the I-5 Divide — preceded IGD through a grassroots effort advocating for use of the I-5 air rights in downtown Seattle to create much-needed affordable housing sites, public open space, civic facilities, and other public and private infrastructure. Lid I-5 is a group of Seattle residents and volunteers who believe in building a stronger city for people and creating a more livable, equitable, and sustainable Seattle. It is sponsored by the Seattle Parks Foundation, a philanthropy-based organization that encourages public-sector investment and private-sector giving to help create, activate, and care for public spaces throughout Seattle.

Lid I-5 supports the City of Seattle’s I-5 Lid Feasibility Study, which is currently exploring the possibility of building additional lid segments across I-5 in the core of Seattle's downtown between Denny Way and Madison Street, expanding on existing lids of Freeway Park and the

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5 Greater downtown includes communities from Uptown to Pioneer Square and the Chinatown-International District, and from the waterfront to First Hill and Capitol Hill.
Washington State Convention Center. The study is investigating conceptual structural, urban design, and financial solutions that would bridge the highway, support new uses, improve air quality and quality-of-life, create economic development opportunities in a highly-constrained area, and reconnect neighborhoods that have been divided for over 50 years. This represents a 15-acre opportunity for adding parks, affordable housing, and civic facilities in a rapidly densifying and land-constrained neighborhood. The study is funded with a $1.5 million private contribution from the Washington State Convention Center secured by Lid I-5.

Leveraging the IGD, I-5 Lid Feasibility Study, Comprehensive Plan, Pedestrian Master Plan, Bicycle Master Plan, Transit Master Plan, and Freight Master Plan, WSDOT and Seattle are jointly seeking BUILD funds to undertake Community Connections and Leveraged Development, the second tier of the two-tier analysis, to move beyond conceptual-level analyses into more detailed solution definition supported by technical analyses.

### 2.5 PROJECT GOALS

*Partnering for the Future of I-5* will be guided by the following goals:

- **Safety and Reliability**
  - Predictably, safely, and efficiently serve the transportation needs of the region and downtown Seattle through streets and public spaces that are accessible and comfortable;
  - Create efficiency where needed to keep streets and the economy moving;

- **Connected Communities**
  - Improve connections between communities through more multimodal options and partnerships;
  - Create places and experiences that bring us together and encourage positive interactions;
  - Enhance each neighborhood’s identity and individual belonging in streets and public spaces;
  - Acknowledge the triumphs and challenges of our intersecting and sometimes conflicting pasts;
  - Support active lifestyles that foster physical and emotional well-being;
  - Provide better access to economic opportunities, equity, health, quality of life, and open space for the region and communities separated from Seattle’s commercial core by I-5;

- **Adaptive Innovation and Technology**
  - Innovate with mobility solutions, land use decisions, and emerging technologies that serve the evolving needs of our communities and economy;
  - Engage people to develop shared outcomes that invest in future generations;

- **Resilient and Maintained System**
  - Pursue lowest lifecycle cost to preserve the system in a state of good repair;
  - Create resilience in anticipation of disruptive conditions;

- **Environmental Stewardship**
— Maintain the highest standards for environmental management;
— **Sustainably Funded**
  — Support opportunities for private sector and partner investment adjacent to and over I-5 assets, leveraging public infrastructure spending to spur economic development and community building;
  — Ensure revenues and resources are available that set the I-5 system on a new course toward sustainable funding, including value capture from a potential future I-5 lid;
  — Explore innovations in public spending to maximize benefits and achieve multiple public policy objectives, where every dollar spent in infrastructure solutions is a dollar invested in health, safety, well-being, resilience, complete communities, and equity;
  — Steadily build an honorable legacy together;
— **Transferrable, Applicable, Replicable Solutions**
  — Produce a replicable methodology for subsequent analyses; and
  — Identify transferrable and applicable scenarios for solving transportation problems along similarly constrained portions of the I-5 system and around the country.

### 2.6 PROJECT SCOPE AND WORK PLAN

Downtown Seattle is the capacity control point for I-5 and the Puget Sound freeway network. With the highest concentration of activity in the state, Seattle is also the most constrained and congested point in the system with little opportunity or interest in roadway expansion. I-5 capacity north and south must match into the constraints posed by downtown Seattle. The solution must include a recognition of increasing traffic demand for people seeking access into downtown, but also require advances in demand management and operational improvements to make the best use of the highway for freight and other through trips with few alternative routes to pass through Seattle.

While I-5 provides access into and out of Seattle, it is also a barrier between communities, cutting a trench through the urban landscape. Access routes to and from I-5 have both localized community and multi-modal impacts at ramp junctions and network impacts on downtown streets. Mid-town access points from east-west streets require high volume turns to and from constrained north-south circulation streets, increasing safety challenges to pedestrians and bicyclists and blockages for vehicular traffic waiting to cross high-volume pedestrian walkways.

WSDOT and the City of Seattle’s mutual interest in *Partnering for the Future of I-5* springs from a shared recognition that mutually beneficial opportunities may be uncovered to improve operation to both the freeway and local street system through the potential relocation or modification of access points and that the process of building lid structures could simultaneously reconfigure and/or rebuild support structures that improve seismic resilience and support operational efficiencies. We also recognize that challenges along I-5 through Seattle must be addressed before other key planning efforts can proceed. For I-5, defining the best options to maximize performance of this roadway segment will help define the strategies that can be successful north and south of Seattle. For Seattle, defining the best freeway interface and future of the I-5 right-of-way will inform a future downtown strategic mobility plan, and clarify design parameters and potential partnership opportunities for a possible lid over I-5.

The work plan for *Partnering for the Future of I-5* is described in five tasks for the concurrent two-tiered *Systemwide Scenario Analysis* and *Community Connections and Leveraged Development* components. The work plan for *Community Connections and Leveraged Development* is consistent
Partnering for the Future of I-5 | FY 2019 BUILD Project Narrative

with Seattle’s Imagine Greater Downtown vision and overall mobility planning framework, and would build on work currently underway in the I-5 Lid Feasibility Study. The Systemwide Scenario Analysis fits within WSDOT’s process to develop a long-range program and master plan for the 107-mile I-5 corridor, as well as a more concentrated I-5 corridor plan through downtown Seattle. As such, the schedule and work plan are organized in the following manner:

PROPOSED PROJECT SCOPE

1. Project Organization and Data Preparation
   1.1. Prepare Project Management Plan including detailed project scope, schedule, roles, and protocols.
   1.2. Prepare Decision-making Framework and Public Engagement Plan. Address composition and selection of committees, coordination between committees, meeting plans, facilitation guidelines, and appropriate public outreach strategies.
   1.3. Prepare Methodology Report. Identify appropriate effectiveness measures consistent with WSDOT Practical Solutions and Planning and Environmental Linkage guidelines. Identify data requirements, modeling approach and metrics, and how they will be applied at the screening and evaluation stages.
   1.4. Ongoing Project Management, Committee Facilitation and Public Outreach
2. **Data and Model Development**

2.1. **Collect Baseline Data and Prepare Modeling Tools.** Identify baseline data needed to describe system performance and issues, and to evaluate feasibility and conceptual cost of potential solutions. Prepare modeling tools including dynamic traffic assignment or equivalent tools for operational assessment within the three study areas. For the *Community Connections and Leveraged Development* study of the downtown freeway network in Seattle, prepare WSDOT’s integrated mesoscopic Dynamic Traffic Assignment (DTA) model for evaluating location-specific and corridor-wide transportation strategies affecting I-5 and local streets between Spokane St. and Mercer St.

3. **Concept Screening**

3.1. **Identify System Issues.** Summarize key system-level issues for the 107-mile corridor, and specific operational and structural issues within the downtown Seattle pinch-point, including identification of key structure elements for further analysis. Prepare materials suitable to inform non-professional stakeholders about system performance, issues, and concerns in each study area.

3.2. **Identify Possible Impacts of New Mobility Concepts**, including connected and autonomous vehicle systems, “mobility as a service” strategies, and other potentially promising and/or impactful transportation developments envisioned within a 30-year timeframe. Describe range of benefits and risks, and their potential impacts on transportation networks, mobility, and access.

3.3. **Identify Promising Concepts by Type.** For each area, identify potential concepts that could improve system effectiveness within the following categories at minimum:

   3.3.1. Asset management strategies
   3.3.2. Land use and demand management strategies
   3.3.3. Operational strategies including intelligent transportation system investments
   3.3.4. Transit and rideshare service strategies
   3.3.5. Continuous managed-lane strategies
   3.3.6. Local and modal system barriers and connections
   3.3.7. Environmental and community remedies and enhancements

3.4. **Prepare High-Level Screening Report** and presentation materials for each study area.

4. **Scenario Evaluation**

4.1. **Develop Scenarios Comprised of Promising Concepts**, drawing from the screening phase, combining complementary concepts that make sense together. Revise based on stakeholder and technical committee review. The study teams will develop scenarios with solutions to address future travel needs along the I-5 systems under review. These scenarios will integrate I-5, surface streets, transit, active transportation, and transportation-related programs, but will differ in the extent to which they will involve building more infrastructure or better managing, replacing, or modifying existing infrastructure.

4.2. **Assess Effectiveness Measures** using appropriate modeling tools and metrics defined in the Methodology Report. To prepare for a more populated and multimodal transportation system, the teams will use more comprehensive measures of success like access to jobs and reliability of travel times. These measures reflect the performance of an entire transportation system: roads, transit, pedestrian, and bike.
4.3. **Conduct Environmental Screening** consistent with FHWA and WSDOT Planning and Environmental Linkages guidelines as defined in the Methodology Report.

4.4. **Prepare Evaluation Report** and presentations summarizing effectiveness, environmental factors, and, to the extent possible, elements of each scenario that contribute to improvements compared to the baseline. The proposed scenario evaluation work would develop agreement among stakeholders and communities along I-5 about the range of strategies, actions, and investments on and off I-5 to consider in developing a long-range master plan for the corridor. It would build on current work to develop goals and objectives for future I-5 planning work, and set the stage for a detailed environmental assessment leading to a preferred alternative set of solutions for the I-5 system and the communities and transportation systems that rely on I-5.

5. **Downtown Seattle Community Connections and Leveraged Development Analysis**

5.1. **Identify Structural Conditions and Deficiencies.** Work collaboratively to document the structural conditions, including seismic vulnerability, of highway assets in the downtown Seattle freeway segment, as well as programmed projects to remedy deficiencies. The structural analysis will consider support systems for the tiered highway lanes as well as on- and off-ramps, overpasses, retaining walls and other structural assets that abut or otherwise affect the highway. The analysis will quantify high-level costs for best practice asset management to meet seismic requirements of the state’s lifeline system as well as potential costs for reconstruction, removal or relocation of structural elements in relation to potential lid segments prioritized through the current feasibility analyses being undertaken by the City.

5.2. **Identify Operational Deficiencies on the Street and Highway Network,** focusing on highway operations, street operations affected by highway access locations and routes, and locations where highway access activity creates barriers between neighborhoods for multimodal access and achieving other community priorities related to development, urban design and the public realm.

5.3. **Define and Assess Investment Alternatives** related to both structural modifications and operational efficiencies that could achieve multi-benefit outcomes (improved safety, enhanced seismic resilience, more efficient operations, expanded open space, leveraged investment). These concepts may include altering freeway access locations and pathways, improved lane management using new technologies, structural changes that create more space on the highway as well as above it, potential for leveraging air rights development, and/or modifications to the adjacent street grid and its management to better integrate with highway operations.

5.4. **Prepare Downtown Seattle Community Connections and Leveraged Development Action Plan** summarizing the analyses and identifying high-priority implementation strategies to advance.

The next stage of this work, currently unfunded, would lead to more detailed analysis based on the study’s recommendations and development of a system master plan. The master planning work would include an investment and action plan for resource agency consideration.
3 GRANT FUNDS AND SOURCES/USES OF PROJECT FUNDS

WSDOT and Seattle are requesting $4.2 million in FY 2019 BUILD discretionary grant funds to complement a $0.75 million state and $0.3 million local investment in *Partnering for the Future of I-5*. The project will advance and actuate several ancillary studies or efforts that are currently funded and underway, including the I-5 Lid Feasibility Study, which was funded through a $1.5 million private contribution from the Washington State Convention Center.

3.1 SOURCES OF FUNDS

The total cost of the proposed project is $5.25 million. Table 3 presents the proposed share of WSDOT, City of Seattle, and USDOT funding to carry out the project.

**Table 3. Project Funding Sources**

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>WSDOT</td>
<td>$750,000</td>
<td>14.3%</td>
</tr>
<tr>
<td>City of Seattle</td>
<td>$300,000</td>
<td>5.7%</td>
</tr>
<tr>
<td>USDOT BUILD</td>
<td>$4,200,000</td>
<td>80.0%</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$5,250,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

Should BUILD grant funding be awarded to *Partnering for the Future of I-5*, the WSDOT Secretary and Seattle Mayor have the authority to commit these local funds to the project.

3.2 USES OF FUNDS

BUILD, City of Seattle, and WSDOT funding will contribute to meet the following project costs.

**Table 4. Project Funding Uses**

<table>
<thead>
<tr>
<th>Component</th>
<th>Cost</th>
<th>Non Federal (WSDOT)</th>
<th>Non Federal (Seattle)</th>
<th>Federal (BUILD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systemwide Scenario Analysis</td>
<td>$3,750,000</td>
<td>$750,000 (20%)</td>
<td>$0</td>
<td>$3,000,000 (80%)</td>
</tr>
<tr>
<td>Community Connections and Leveraged Development</td>
<td>$1,500,000</td>
<td>$0</td>
<td>$300,000 (20%)</td>
<td>$1,200,000 (80%)</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$5,250,000</strong></td>
<td><strong>$750,000 (14%)</strong></td>
<td><strong>$300,000 (6%)</strong></td>
<td><strong>$4,200,000 (80%)</strong></td>
</tr>
</tbody>
</table>
4  MERIT CRITERIA

4.1 PRIMARY SELECTION CRITERIA

Partnering for the Future of I-5 addresses each of the merit criteria as described below:

4.1.1 ECONOMIC COMPETITIVENESS

I-5’s lack of reliability threatens Washington and Seattle’s ability to compete globally. The interstate is the backbone of Washington’s transportation system and one of the country’s most important transportation assets. It powers the nation’s economy, links statewide markets to major ports up and down the west coast, and connects people to jobs, goods and each other. All the transportation systems it connects to, including local streets, highways, transit, freight, and national defense, rely heavily on I-5.

Since I-5 was completed in 1969, average daily traffic on I-5 near downtown Seattle has grown 150%, from 124,599 average daily vehicles to 250,000 in 2017, the highest levels of traffic on the state’s I-5 system (Figure 6).6 HOV lanes no longer provide reliable speed advantage to transit and rideshare vehicles, congesting the system with more people on the road in SOVs.

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 2018.7 Another study found the cost of traffic congestion to the state’s economy top total $3.2 billion a year.8 In 2017, I-5 southbound from Pike Street in downtown Seattle to 128th Street/Exit 186 in Snohomish County was ranked the 20th worst traffic hotspot in the U.S., costing drivers $756 million in lost time, wasted fuel, and air pollution over ten years.9 Congestion on I-5 has increased by 10% over the last eight years, causing businesses to waste 30,000 hours a day and $49.8 million annually in lost productivity, and 34% in added travel time.10, 11

I-5 is the most heavily-used truck route in the region, serving as the

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10 Tomtom Traffic Index, Seattle.
backbone of the state’s freight movements and a regional express bus system. The ports of Tacoma and Seattle – operating together as the Northwest Seaport Alliance (NWSA) – represent the fourth-largest container gateway in North America and carry over 27 million tons of freight per year, resulting in over $73 billion in international trade and $5.9 billion in revenue annually. 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.

This impact is adversely affected by the growing hours freight trucks spend trapped in congestion on the I-5 system, creating a barrier to getting goods to market around the world. With an increase of 6,600 average daily heavy trucks from 2013 to 2016, resulting in an overall 16% rise in delay between 2015 and 2017 alone. This stretch of I-5 contains three of the worst truck bottlenecks in the U.S.: I-5 at I-90 in Seattle, I-5 at SR-18 in Federal Way, and I-5 at I-705/SR-16 in Tacoma. This ranks Washington amongst the top five states in the U.S. with six of the nation’s top 100 freight bottlenecks. In 2005, FHWA ranked the I-5 at I-90 interchange within downtown Seattle as one of the worst physical bottlenecks in the nation, delaying freight vehicles more than 14,000 hours annually.

Truck volumes on I-5 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. 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.

Congestion on I-5 is due to worsen with increasing demand, especially in the segment of I-5 that runs through Seattle. Puget Sound’s population has more than doubled, growing from 2 million in 1969 to 4.3 million in 2017. The Puget Sound Regional Council (PSRC) forecasts 1.8 million more residents in the region in the next 30 years. Greater downtown Seattle houses 15% of the city’s population and just over one-half of the city’s population.

![Figure 7. Downtown Seattle Population, Employment, and Economic Development](source: Imagine Greater Downtown)

14 The NWSA Marine Cargo Economic Impacts, January 2019, p. 16.
15 WSDOT, 2018 Corridor Capacity Report, p. 35.
16 Ibid.
17 American Transportation Research Institute, 2019 Top 100 Truck Bottlenecks Brochure.
18 FHWA, An Initial Assessment of Freight Bottlenecks on Highways, October 2005, Chapter 5.
20 WSDOT, I-5 System Partnership: A Call to Action, p. 12.
jobs (Figure 7). The city sustains approximately 18% of the metropolitan region’s population and 27% of its jobs.

Much of the I-5 system’s congestion issues are due to employment and population growth that gives rise to rapid economic development, especially in downtown Seattle. Over the decades, the I-5 system in downtown Seattle has become a hub for both transportation and building development. Currently, greater downtown has nearly $13.5 billion in new development in the pipeline, including $4.8 billion under construction, with greater downtown representing approximately half of the city’s development since 2010 (Figure 7).²¹

In order to keep up with growing population, employment, and congestion, the I-5 system will need to be re-envisioned and redesigned to move higher volumes of people and goods. Continuing the status quo would come at a high cost to every city in the region, both in terms of economics and human life. *Partnering for the Future of I-5* will bring together WSDOT and the City of Seattle and our regional partners to create a joint approach for comprehensively addressing the I-5 system in a way that optimizes the existing system and invests strategically to keep residents, visitors, the workforce, freight, and goods moving. Improvements such as ramp metering, increased lane width, cordon pricing in Seattle, or congestion pricing on I-5 will be examined for their potential to produce savings of travel time and person miles travelled. Reductions in travel time for I-5 users translates into more time available for work, leisure, or other activities. Thus, improvements will be partially prioritized through their ability to alleviate peak-hour congestion along I-5 and on adjacent arterials, with reduced travel time for commuters, freight traffic, and recreational users throughout the region.

The *Systemwide Scenario Analysis* component of the project will be needed to develop strategies for easing congestion. The *Community Connections and Leveraged Development* in-depth analysis of the most constrained portion of I-5 through downtown Seattle will identify, analyze, and recommend long-term strategies that will improve congestion and leverage economic development, including opportunities to lid over I-5. The potential closure or reconfiguration of I-5 ramps in downtown Seattle to accommodate a lid structure could lead to reductions in lane weaving on I-5 as well as improved travel movements through Seattle, which will improve travel time savings for thousands of vehicles per day, specifically through-trips. Another key anticipated benefit of a lid structure will be the potential creation of new useable space across I-5, connecting

²¹ Ibid., p. 5.
Partnering for the Future of I-5 will also explore leveraging economic productivity from assets in designated Qualified Opportunity Zones (QOZs), which are located throughout the 170-mile I-5 system and at the southern end of the downtown Seattle study area (Figure 8). Indeed, the study will define and prioritize scenarios that will attract private economic development to these areas as a means of incorporating private sector contributions, including Qualified Opportunity Funds, through a public-private partnership.

### 4.1.2 ENVIRONMENTAL SUSTAINABILITY

Congestion on I-5 results in increased NOx emissions and poor air quality, poor water quality from pavement runoff, and noise pollution from cars and trucks. This, in turn, damages environmental health. Longer commute times are also associated with poor health outcomes, with greater effects on already-disadvantaged communities, including those in QOZs.

Though Seattle, as a whole, is one of the healthiest cities in the U.S., all of its neighborhoods are not doing as well. Those living in the southern end of the Community Connections and Leveraged Development study area in Yesler Terrace, Chinatown/ID, and Belltown, with higher proportions of seniors, low income households, and people of color, are more likely to have poor long-term health outcomes (Figure 9). Air, noise, and other pollution from I-5 creates health impacts for those that live or work nearby.

*Partnering for the Future of I-5* will likely result in recommendations that create environmental sustainability and resiliency benefits. Benefits will potentially include a reduction in air pollution associated with decreased automobile and commercial truck travel, through improved connectivity and travel on I-5 and surface streets. The reduction of emissions represents a benefit for residents and workers in buildings within a certain radius of I-5 who may not directly use the road facility. The reduction in gasoline and diesel consumption due to fewer miles traveled results in fewer emissions, including sulfur dioxide and fine particulate matter, being released into the local environment. An I-5 lid in downtown Seattle could also reduce noise and visual pollution, as demonstrated by lid projects in Dallas and other cities across the U.S. In fact, capping freeways for use as parks has been found to result in quantifiable public health benefits from improved access to green space and exercise opportunities, reduced and filtered air pollutants, and reduction of traffic noise.\(^{22}\)

A key motive and consideration for the *Community Connections and Leveraged Development* analysis is seismic risk. The analysis will seek to determine whether there are opportunities to achieve proposed lidding of I-5 segments in conjunction with improving long-term seismic resilience. Resiliency benefits will potentially result from seismic reinforcement and mitigation that will allow I-5, and specifically 70 identified assets through downtown Seattle, to withstand an earthquake of 9.0 in magnitude.

The project will also identify and prioritize scenarios that improve drainage and water management. Benefits from drainage improvements will range from the reduction in potential untreated water contaminants as a result of improvements in water collection and downstream treatment, reduced future costs due to potential reduction in flood-related interruptions and road closures, and reduction in injuries and incidents on roadways evaluated as part of the study.

### 4.1.3 SAFETY

Safety is a serious issue that will be addressed through the long-term solutions recommended for development through the *Partnering for the Future of I-5* project. I-5 has seen a 30% increase in road incidents since 2012 with the rise in congestion.\(^{23}\) Based on currently available data, there are typically high numbers of both fatalities and severe incidents along the I-5 corridor, specifically around enter/exit points where there are increased occurrences of weaving between lanes adjacent to slow and stopped vehicles. In Seattle, traffic deaths have declined in recent years, but pedestrians and bicyclists still make up 40% of all traffic fatalities.\(^{24}\) The city’s highest crash locations are on arterial streets in greater downtown, such as such as Mercer, Denny, Boren, and 4th Avenue.\(^{25}\)

WSDOT and Seattle are committed to making I-5 and local streets safe for everyone, including vulnerable travelers, through *Partnering for the Future of I-5*. Long-term strategies that will be evaluated include improvements to I-5 that create safer conditions (e.g., ramp meters, variable speed limit signs, more predictable ramp locations), multi-lane arterial streets that are less intimidating to cross, consistent wayfinding, and elimination of highway/rail grade crossings. Safety benefits are expected to be achieved through infrastructure improvements that reduce the number of collisions on I-5 and urban connections to I-5, and improved accessibility to people residing along current WSDOT I-5 right-of-way. Cost savings that arise from a reduction in the number of incidents include direct savings (e.g., reduced personal medical expenses, lost wages, and lower individual insurance premiums), as well as significant avoided costs to society (e.g., second-party medical and litigation fees, emergency response costs, crime prevention costs, incident congestion costs, and litigation costs).

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\(^{25}\) Ibid.
4.1.4 STATE OF GOOD REPAIR

A primary aim of Partnering for the Future of I-5 is to create a joint approach for comprehensively addressing the I-5 system in a way that maintains and preserves it in a sustainable, long-term manner. Notable signs of deterioration have emerged, such as a hole that appeared in the Ship Canal Bridge, just to the north of downtown, in summer 2018 (Figure 11). Deteriorating repair conditions make it likely that I-5 will fail in a major earthquake. Keeping a state of good repair on I-5 will cost $2.5 billion through 2040. However, the state only spends $400 million annually statewide on such preservation efforts. Dedicating even more state funding to state of good repair work to I-5 will disproportionately impact other state transportation priorities due to the fact that WSDOT’s operating and capital appropriations budget was $5.7 billion for 2017-2019.

A strategy of Partnering for the Future of I-5 is to maintain and preserve basic investments that are already in place as solutions to improve I-5’s performance. Thus, the study will identify long-term strategies that pursue lowest lifecycle cost to preserve the I-5 system in a state of good repair. These strategies will generate maintenance and repair savings, deferral of replacement cost savings, reduced vehicle miles traveled, which leads to less road and facility damage, as well as use of design and technologies to increase resilience.

The Community Connections and Leveraged Development analysis will define the framework of an asset management plan for a possible lidded segment, the under-structure of which would be maintained by WSDOT and surface maintained by Seattle. Among the range of long-term solutions to be considered will be the management of maintenance and operations through the creation of a nonprofit or specialized City office to specifically oversee any surface park or open space assets on a daily basis.

4.1.5 QUALITY OF LIFE

Congestion on I-5 and its lack of reliability threatens Washington and Seattle’s quality of life for the region. This congestion creates a barrier separating workers residing in rural and suburban areas along the central Washington I-5 system with more affordable housing to job centers in urban areas. The economy in the Seattle area is booming with employment growing at a higher rate than the nation, driven by the information and manufacturing sectors (Figure 12).26 Housing prices and population growth have risen dramatically 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

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Figure 12. Seattle Area Employment

<table>
<thead>
<tr>
<th></th>
<th>Dec. 2018</th>
<th>Change from Dec. 2017 to Dec. 2018</th>
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</thead>
<tbody>
<tr>
<td>Total nonfarm</td>
<td>2,103.1</td>
<td>67.3</td>
</tr>
<tr>
<td>Mining and logging</td>
<td>1.1</td>
<td>0.0</td>
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<tr>
<td>Construction</td>
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<tr>
<td>Manufacturing</td>
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<tr>
<td>Trade, transportation, and utilities</td>
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<td>Information</td>
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<tr>
<td>Leisure and hospitality</td>
<td>207.6</td>
<td>4.8</td>
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<tr>
<td>Other services</td>
<td>74.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Government</td>
<td>280.0</td>
<td>-1.8</td>
</tr>
</tbody>
</table>

Snohomish counties, but only 82,521 housing units were built.\(^{27}\) Outlying areas have filled with new Lower-income workers live in more affordable housing in these outlying areas that are underserved by affordable transportation options such as transit. With fewer transportation options, these communities must drive long distances to their jobs, exacerbating inequitable access to jobs and services and adding even more congestion to the regional roadway system. Carrying capacity simply has not kept up with demand, as suburban sprawl has made the region even more car-dependent.

A major issue for the Community Connections and Leveraged Development analysis to address is the long-standing impact that the freeway has had on its neighboring communities. The trenched design of I-5 through downtown Seattle cuts off the neighborhoods of First Hill and Capitol Hill from the commercial core of downtown. The creation and construction of Freeway Park in the 1970s did much to stitch downtown back to a small section of First Hill, and could serve as a template for building a longer lid for park space and other uses, as envisioned by groups like Lid I-5. This would address the lack of parks and open space downtown due to the scarcity of affordable, developable parcels throughout greater downtown. Greater downtown Seattle has a disproportionately small amount of park and public open space relative to the rest of Seattle (Figure 13). Playgrounds and broad open spaces are few, and access is uneven. Some neighborhoods have limited access to the water and few parks and recreation opportunities within a reasonable walk from their homes.

A key priority for Partnering for the Future of I-5 will be to integrate social equity into the planning process and the long-term solutions that are identified through it. Both the

\(^{27}\) Ibid.
Systemwide Scenario Analysis and Community Connections and Leveraged Development efforts will seek to improve the I-5 system and the downtown Seattle segment by including historically-underserved communities early in the process, addressing barriers to participation as a primary concern.

The solutions defined through the Community Connections and Leveraged Development component of the project will be intended to provide increased access and connectivity to communities currently cut off from jobs and essential services in the commercial heart of the city, and create parks and open spaces that enhance their quality of life. Any alternatives identified through the study that will consider how likely they are to: (1) increase travel choices for the growing downtown population, which now make up roughly 70% of all new transit commuters in the City since 2010\textsuperscript{28}; and (2) offer opportunities to catch up on much-needed affordable housing sites, public open space, civic facilities like schools and community centers, and other social infrastructure.

Key benefits from the project are likely to be derived from mode shift to more active transportation methods as a result of safe and direct access to improved facilities (e.g., bicycle and pedestrian facilities across, along, or on top of I-5), direct access to outdoor recreational and park spaces, and the reduction in noise levels. Health benefits apply to new cyclists and pedestrians who would otherwise not be able to use a facility under existing conditions. These cyclists and pedestrians realize benefits by increased daily physical activity, which has been shown to improve the health of users and reduce future medical costs.

4.2 SECONDARY CRITERIA

Partnering for the Future of I-5 demonstrates the following innovative practices and strong partnerships:

4.2.1 INNOVATION

INNOVATIVE TECHNOLOGY

Communities are changing and so are the ways in which people travel from place to place. New technologies and innovations are already shaping the future: new car sharing and on-demand mobility services, as well as advancements like automated, connected, and electric vehicles, and high speed rail.

Partnering for the Future of I-5 will bring together WSDOT and the City of Seattle and their regional partners to create a joint approach for comprehensively addressing the I-5 system in a way that embraces new and emerging technologies. By viewing I-5 as a system and leveraging innovation, stakeholders can coordinate operations on other roadways and all modes of transportation. This coordination is leading to solutions that address the changing needs of our communities and the larger economy. All potential solutions for the system need to be evaluated to determine which work best, and how they interact.

As provided in Section 2.2, the project work plan includes a concept screening process where potential impacts of new mobility concepts will be identified. This will include an analysis of the benefits, risks, and other possible impacts of connected and autonomous vehicle systems, mobility-as-a-service strategies, and other potentially promising and/or impactful transportation developments envisioned within a 30-year timeframe.

\textsuperscript{28} Imagine Greater Downton, \textit{February 28, 2019 Meeting Materials: Big Ideas}, p. 5.
INNOVATIVE PROJECT DELIVERY

WSDOT and Seattle will undertake the two components of Partnering for the Future of I-5 using lessons learned from the Federal Highway Administration’s (FHWA) Every Day Counts (EDC) Initiative to expedite project delivery. EDC planning innovations currently under consideration include Virtual Public Involvement, Regional Models of Cooperation, Planning and Environmental Linkages, Geospatial Data Collaboration, and Community Connections.

WSDOT and Seattle are also considering applying the EDC innovation of Project Bundling by awarding a single contract for the two studies, and, through the planning effort, investigating capital projects that could be designed and constructed under bundled contracts. Project bundling offers a comprehensive and accelerated delivery solution for addressing strategic program goals, allowing WSDOT and Seattle to capitalize on economies of scale to increase efficiency and collaborate more effectively during project delivery and construction.


WSDOT is currently utilizing some of these innovations in its projects, including the SR 167 and SR 509 Completion Projects.

The Systemwide Scenario Analysis will evaluate these alternative concepts and funding and delivery mechanisms using WSDOT’s Practical Solutions approach. Practical Solutions is a performance-based approach to transportation decision-making. This data-driven approach uses tools and performance measures to seek lower-cost approaches and efficiencies in operating highways, ferries, transit, and rail, to reduce travel demand, and to reduce the need for building costly new infrastructure.

INNOVATIVE FINANCING

Partnering for the Future of I-5 will comprehensively address the I-5 system in a way that optimizes strategic investment in the existing system using innovative funding and finance tools. Through the study, WSDOT and Seattle will assess the extent to which capital projects identified through a subsequent master planning process can be funded and financed through both traditional and innovative means, including by using value capture and other means.

The gas tax, traditionally used to pay for system maintenance and improvements, is no longer a sustainable source of funding for I-5 improvements. Historical growth in fuel tax revenues has flattened due to fuel efficient vehicles, and a large portion of those diminishing revenues pays for the interest on loans for roadway improvements that have already been built. Currently, approximately two-thirds of the state’s gas tax revenues are devoted to paying off bonds for completed projects.29

The Practical Solutions process will be used to seek efficient funding mechanisms. Both components of the Partnering for the Future of I-5 project will identify opportunities where value capture opportunities are available to fund particular improvements to I-5. They will investigate ways for WSDOT and Seattle

to take dollars generated from I-5 improvements and reinvest them in the future I-5 project, such as joint development, right of way leasing, tax increment financing, special assessment districts, development impact fees, private contributions, naming rights, parking fees, and solar or wind installations.

The *Community Connections and Leveraged Development* analysis of the I-5 system in downtown Seattle will be a prime opportunity for this analysis. Property values, and therefore, property tax revenues, will very likely rise near a freeway lid. Any alternative scenario for improving operations and resiliency on this stretch of I-5 that includes such an improvement will need to provide a solution for paying for a lid structure since traditional public funding will not be feasible. Value capture opportunities could facilitate private or philanthropic contributions, P3 opportunities, or enable a new revenue source for the City of Seattle.

### 4.2.2 PARTNERSHIP

*Partnering for the Future of I-5* involves multiple partners in project development and funding. Their mutual interest in this project stems from the recognition that it could uncover mutually beneficial opportunities for improving the operation of both the freeway and local street systems. Defining the best options to maximize performance of the 107-mile I-5 system in central Washington will help WSDOT define strategies that can be successful within and north and south of Seattle. Defining the best freeway interface and future of the I-5 right-of-way in Seattle will inform the City's future downtown strategic mobility plan and clarify design parameters and partnership opportunities for a possible future I-5 lid.

WSDOT (DUNS: 8088839950000) WSDOT is the steward of a multimodal transportation system, including 18,600 lane miles of state highways and nearly 3,300 bridge structures, and responsible for ensuring that people and goods move safely and efficiently. WSDOT owns and manages I-5 and serves as one of the two joint sponsoring agencies of this BUILD application. WSDOT will co-lead *Partnering for the Future of I-5*. This analysis is partly the result of decisions made by the *I-5 System Partnership*, a broad, united coalition of funding partners and project stakeholders. The I-5 System Partnership is a collaboration between local governments, the regional business community, transit agencies, ports, community organizations, and the University of Washington that will facilitate lasting positive change. This coalition of 55+ diverse stakeholders, including thirteen cities, three counties and two port districts has, over the past two years, been instrumental in advancing the I-5 scenario planning study proposed to be funded with BUILD grant funds (Figure 14).

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**Figure 14. I-5 System Partnership Stakeholders**

- Association of Washington Business
- Cascade Bicycle Club
- Challenge Seattle
- City of Arlington
- City of Bellevue
- City of Everett
- City of Federal Way
- City of Kent
- City of Lakewood
- City of Mill Creek
- City of Newcastle
- City of Seattle
- City of Shoreline
- City of Tacoma
- City of Tukwila
- City of Tumwater
- Coalition on Homelessness
- Community Transit
- Commute Seattle
- Downtown Seattle Association
- Economic Alliance Snohomish County
- Freight Mobility Strategic Investment Board
- Governor's Office
- InterCity Transit
- King County DOT
- King County Metro
- Legislators
- Legislative staff
- Master Builders Assn of King & Snohomish Counties
- Microsoft
- Mobility Innovation Center/CoMotion at University of Washington
- Northwest Seaport Alliance
- Pierce County
- Pierce Transit
- Port of Seattle
- Port of Tacoma
- PSRC
- SCA
- Seattle Chinatown International District Preservation and Development Authority
- Seattle Metropolitan Chamber of Commerce
- Sightline Institute
- Snohomish County
- Snohomish County
- SODO
- Sound Transit
- Tacoma-Pierce County Chamber
- The Nature Conservancy
- Thurston Regional Planning Council
- Town of Steilacoom
- University of Washington
- WA State Transportation Commission
- Washington Tracking Association
- Washington Roundtable
- WSDOT
The City of Seattle is the other joint sponsoring agency of this BUILD application. It is carrying out the study with the support of the Washington State Convention Center, a municipal corporation with independent taxing authority that is funding the I-5 Lid Feasibility Study, and Lid I-5, a grassroots nonprofit organization sponsored by the Seattle Parks Foundation, a philanthropic organization that encourages public-sector investment and private-sector giving to help create, activate, and care for public spaces throughout Seattle. Partnering for the Future of I-5 is also supported by the Imagine Greater Downtown project partners: King County Metro, Sound Transit, and the Downtown Seattle Association with the participation of WSDOT and the Port of Seattle.

The wide range of support from local, regional, state, and federal officials, as well as local jurisdictions, Statewide and regional organizations, and private sector partners, is evident in the letters of support for Partnering for the Future of I-5 provided in Appendix B.

### 5 PROJECT READINESS

#### 5.1 TECHNICAL FEASIBILITY

WSDOT completed the I-5 System Partnership: A Call to Action report in May 2019, which provided a regional policy foundation, described macro/regional trends, and identified potential strategies for planning the long-term future of the 107-mile I-5 system in central Washington. The City of Seattle drafted its Imagine Greater Downtown vision document in spring 2019 and will complete the IGD in summer 2019 with a Vision Plan. The City’s I-5 Lid Feasibility study kicked off in March 2019 and is expected to be completed in March 2020 with a Final Report.

All three visioning efforts are the starting point for Partnering for the Future of I-5, which will leverage WSDOT and Seattle’s planning capabilities. We recently completed similar planning projects, such as WSDOT’s Washington Transportation Plan, Ultra High Speed Travel Study, and Rail System Plan, and the City of Seattle’s Seattle 2035 2019 Comprehensive Plan Update and One Center City Near-Term Action Plan.

Our grant and financial management capabilities are demonstrated by their success in winning and managing USDOT discretionary grant funding for key projects in the State of Washington, including:

- WSDOT’s US-395 North Spokane Corridor – Francis Ave. to Farwell Rd. Southbound Project, which was awarded $35 million in FY 2009 TIGER funds;
- Seattle’s Mercer Corridor Redevelopment Project, awarded $30 million in FY 2009 TIGER funds;
- WSDOT’s I-5 Lewis-McChord Area Congestion Management Project, awarded $15 in FY 2011 TIGER funds;
- WSDOT’s North Spokane Corridor Railroad Realignment Project, awarded $10 million in FY 2012 TIGER funds;
- Seattle’s Mercer Corridor West Reconstruction Project, awarded $14 million in FY 2012 TIGER funds;
- WSDOT’s Mukilteo Multimodal Ferry Terminal Project, awarded $10 in FY 2015 TIGER funds;
- Seattle’s South Lander Street Grade Separation and Railroad Safety Project, which was awarded $45 million in FY 2016 FASTLANE funds; and
- WSDOT’s Washington State Rural Rail Rehabilitation Project, awarded $11.3 million in FY 2018 BUILD funds.
5.2 PROJECT SCHEDULE

As referenced in Section 2.2 and shown in Table 5, WSDOT and the City of Seattle have developed an aggressive but achievable schedule for Partnering for the Future of I-5 to ensure it meets the BUILD program’s statutory deadlines for obligating and expending all grant funding.

In developing the project schedule, our experiences with TIGER, BUILD, and FASTLANE-funded projects have been applied to ensure that all elements of the grant agreement and planning work are included. BUILD funds for Partnering for the Future of I-5 will be obligated within six months following grant award, well in advance of the September 30, 2021 statutory deadline. It will be completed within 18 months.

Table 5. Project Planning Schedule

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<td>Mar</td>
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5.3 REQUIRED APPROVALS

Preparations have been made by WSDOT and Seattle to prepare stakeholders for the two-tiered studies to be undertaken as part of Partnering for the Future of I-5. No formal approvals, however, are required to execute the planning project.

WSDOT and Seattle will seek the following approvals to advance capital projects identified as long-term solutions through further studies that will follow Partnering for the Future of I-5:

- **National Environmental Policy Act (NEPA)** – WSDOT and Seattle will be securing NEPA approvals following completion of studies that will succeed Partnering for the Future of I-5. These future planning efforts will inform the purpose, need, and scope of any environmental work to follow.

- **Legislative Approvals** – The Washington State Legislature and Seattle City Council’s approvals will be needed to secure funding and support for capital projects and programs identified as priorities from studies that will succeed Partnering for the Future of I-5.

- **State and Local Planning** – PSRC and the Thurston Regional Planning Council will have to confirm that these projects meet the goals and objectives of their long-range plans and place the projects in their Transportation Improvement Programs (TIP).
5.4 PUBLIC INVOLVEMENT

The project will include public outreach to engage affected residential communities, property and business owners, and other system users throughout the planning process. Stakeholders will provide input regarding community priorities and offer insight into the functional needs for I-5 and local roadway networks. The outreach plan will engage people from all walks of life to re-envision I-5 and its adjacent systems, raise visibility and viability of the system to potential investors, and gather community buy-in for the project.

5.5 ASSESSMENT OF RISKS AND MITIGATION STRATEGIES

As with most major planning projects, there are some risks inherent to meeting the project schedule and budget. Mitigation of schedule and budget risk can be accomplished in the following ways:

- **Schedule Delays** – As local and statewide planning entities, WSDOT and the City of Seattle have gained tremendous experience in the implementation of complex, comprehensive planning projects. Both understand the risks associated with such efforts, and consider a wide range of risks in the development of project schedules and budgets, such as those presented in this grant application. We stand ready to have our matching funds and contracts in place to ensure the timely activation of the resources needed to carry out the scope of work.

- **Cost Overruns** – As with any large planning project, this project runs the risk of experiencing cost overruns. We have used our extensive combined experience on similar projects to mitigate this risk. The estimated costs included in the application are based on industry and agency standards, as well as similar projects being implemented by WSDOT and Seattle, and include contingencies. Both our agencies’ transportation budgets have sufficient capacity in the unlikely event that the project experiences a cost over-run.

- **Inter-Agency Disputes** – Schedule delays and cost overruns may occur due to differing preferences and priorities between WSDOT and Seattle in carrying out the planning project. We will mitigate this risk by defining roles, responsibilities, and a dispute resolution process in an inter-agency agreement to be executed prior to BUILD grant obligation.

6 BENEFIT-COST ANALYSIS

*Partnering for the Future of I-5* will lead to a master plan that will identify specific capital projects that WSDOT and Seattle will evaluate by using an economic benefit-cost analysis (BCA). The quantitative evaluation of project benefits that are expected to result from these projects will be applied to standard unit values to develop monetized values for consideration and prioritization. Any capital improvements on I-5 will result in direct and indirect long-term benefits for specific populations and user groups that will need to be balanced with high anticipated capital and maintenance costs, impactful construction closures, and the opportunity costs to each agency.

A project-specific quantitative BCA is appropriate when that project has undergone a substantial amount of planning and preliminary design activity, along with associated cost estimation and travel-demand modeling efforts, or other technical analyses that forecast the range of potential impacts. As the *Partnering for the Future of I-5* work has not yet commenced, required data to evaluate the benefits and costs for a comprehensive BCA is not available. As a result, the BCA report prepared for this BUILD
grant application is conceptual, or qualitative in nature, and outlines the expected analysis framework, methodology, assumptions, and other inputs that would be used for a BCA to be conducted in the future. A quantitative BCA will be developed in a future master planning effort following the Partnering for the Future of I-5 effort. It will incorporate a Build Case (or cases) that represents the future with proposed service enhancements, incorporating best practice analytical and methodological BCA techniques published through USDOT’s Benefit-Cost Analysis Guidance for Discretionary Grant Programs.

The BCA conducted after Partnering for the Future of I-5 when capital projects have been identified will generate a range of quantified, monetized benefits for those projects. These benefits will be aggregated into several broad categories that align with USDOT’s five merit criteria, including:

— Travel time savings for a range of user types, monetized using the appropriate values of time as defined by USDOT;
— Reductions in VMT for a range of user types, converted to monetized benefits related to vehicle operating costs, fuel savings, emissions, reduced pavement damage, and reduced noise costs; and
— Reductions in safety incidents, including crashes on the regional highway network, converted to monetized benefits associated with reduced injuries and values using the appropriate value of a statistical life (VSL) metrics as defined by USDOT.

Though perhaps not included in the quantitative BCA, analyses conducted during a master planning effort following Partnering for the Future of I-5 will also consider any capital project’s potential to support employment and wage growth in the region along with any temporary direct and indirect job impacts associated with construction activity. These impacts will be quantified and described to the extent practicable.

**APPENDICES**

A. Benefit-Cost Analysis Supplementary Documentation
B. Letters of Support
C. Required Forms (SF-424, SF-424C, BUILD Info Form)
D. Wage Certifications