Building the Economy: Infrastructure Needs in Washington

The benefits of infrastructure investment in Washington to support local, state, and national economic growth

April 2019 Update

#BuildWA











Growing the Economy: Infrastructure Investments in Washington

Strong economies and livable communities are built on infrastructure. Modern and sound infrastructure support Washington state's thriving and diverse economy, which includes the manufacturing, technology, agriculture, and natural resource trade sectors. New infrastructure investment is needed to build an economy for the future.

Washington contributes more than \$300 billion to the United States economy annually, but the infrastructure supporting Washington's critical industries is falling behind. In 2019, the American Society of Civil Engineers gave Washington's infrastructure an overall grade of "C." While some sectors have improved due to diligent asset management programs, many other areas need investment to preserve their function. Still others require new dollars to expand capacity and additional investment to build out networks to deliver services to new customers

are essential to private sector growth as well as environmental stewardship.

- Funding flexibility maximizes efficiency and results.
- Regulatory reform and improved coordination simplify processes and target funding where it counts lengthy, costly processes aren't always needed for low-risk projects.

investment helps Washington and the nation grow—one-time investment packages help meet the most immediate need, but sustained investment is required to keep systems in working order.

Example projects are presented throughout this report to illustrate the need in different infrastructure areas.

What are the benefits of infrastructure investment?

- Grow trade and help state and regional businesses thrive
- Foster economic opportunity and workforce development
- Invest in a economy that looks to the future
- Improve environmental quality and quality of life
- Support defense readiness

Washington's infrastructure is vital to the American economy. The state of Washington moves more than \$70 billion worth of goods each year through its ports.



- Infrastructure is the foundation of the state and national economies and quality of life—investments should directly support the economy.
- · Cities, counties, ports, and businesses are part of the **solution**—local governments are on the front lines of infrastructure planning and development, while private business take the lead in other sectors, like telecommunications; all

· Long-term and continual

Washington's infrastructure needs are estimated to be more than \$222 billion.

This level of investment

is estimated to create

706,000-777,000 jobs.

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Infrastructure Type and Estimated Total Need (2019)

Summary of infrastructure needs by sector in Washington state









Stormwater and Natural Resources
\$19.4 billion
for stormwater infrastructure
\$15.5 billion
for fish and habitat

Energy \$3.5 to 4.8 billion

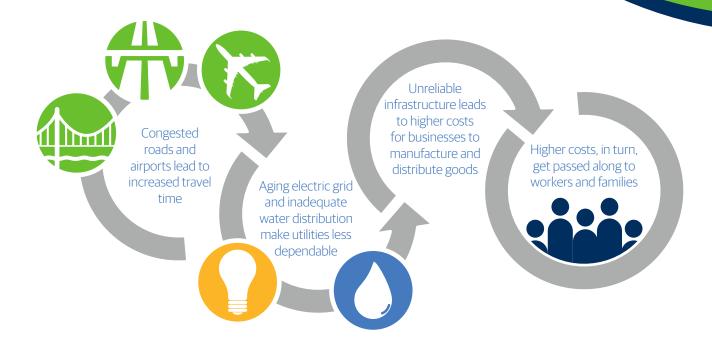
for upgrades to the electric transmission network **\$20.8 million**

for electric vehicle-charging facilities improvements

Washington Invests in the Future

Washington knows that leading in the global economy means having a plan to address existing deficiencies—and being ready to act when dollars become available. In that vein, Washington has undertaken several initiatives to address growing infrastructure needs. The **Safe Drinking Water Initiative** has identified 75 near-term projects totaling \$150 million. Washington state Department of Transportation (WSDOT) has catalogued nearly 400 critical bridges at risk for a major seismic event and created a **Seismic Retrofit Program** to upgrade the most at-risk bridges. The Washington state Department of Commerce has drafted a **Proposed Strategic Plan for Clean Technology Sector**, highlighting the most pressing investments to allow clean technology businesses to thrive in the state. A \$40 million **Clean Energy Fund** supports this strategy.







Odessa Aquifer Adams County



Without this [water] infrastructure, eastern Washington would not look the way it does. We need to keep investing in infrastructure to be able to count on a domestic food supply.

Craig Simpson, Manager East Columbia Basin Irrigation District The aquifer (groundwater) in the Odessa Subarea has deteriorated to a degree where farmers' ability to irrigate their crops is impacted. As much as \$840 million annually in economic activity and 3,600 jobs will be lost when the aquifer declines to a point that it is are no longer usable. The East Columbia Basin Irrigation District is championing the Odessa groundwater program, but the district also relies on extensive infrastructure—dams, pumps, canals, drains—to supply reliable water to a multi-billion dollar farming industry. The proposed water replacement program would supply 164,000 acre-feet of surface water from Banks Lake to irrigate 70,000 acres, which are currently being irrigated with groundwater.

Potatoes are an important commodity in the region, worth hundreds of millions of dollars each year and supporting two processing facilities that are major local employers. Maintaining and expanding irrigation capacity in the region will maintain these local jobs while also supporting agriculture expansion in Adams County.



A 2018 study estimated that Washingtonians lose more than \$7.4 billion each year in lost time and wasted fuel due to congestion, deteriorated roads, and safety problems.

The U.S. Economy Depends on Sound Infrastructure for Growth and Quality of Life

Infrastructure allows goods to reach international markets and local shelves. Americans rely on transit, ferries, and other infrastructure to get to school and work and meet their daily needs. The condition and connectedness of infrastructure are directly related to the ability of businesses and communities to thrive. While Washington makes up 2 percent of the U.S. population, it handles 5 percent of the nation's export activity. Washington has consistently ranked as one of the top exporting states during the last decade and in 2017 ranked 4th in total value of exports behind Texas, New York, and California.

Every \$1 of investment in infrastructure generates \$1.50 in economic output, with spending flowing from government to contractors, then to employees and suppliers and into communities. For core infrastructure, like roads, railways, airports, and utilities, the return on investment is even higher, particularly in the long term.

In Washington, the aviation system alone provides more than 300,000 jobs, with \$16 billion in wages and \$64 billion in total economic activity annually. These economic generators require investment to keep up with the demands that accompany the 25 million passengers and 600 tons of cargo that move through the Port of Seattle annually.

Infrastructure Takes All Forms





Seattle-Tacoma International Airport Master Plan — Forecasting Passenger and Cargo Demands

Cost of near-term projects to meet demand through 2027: \$4 to 5 billion

Washington is home to global companies, including Amazon, Costco, Microsoft, and Boeing. Airports across the state struggle to keep up with the ever-growing demand of passenger travel and freight movement. WSDOT estimates that \$3.6 billion will be needed to sustain the state's 134 airports over the next 20 years. Seattle-Tacoma International Airport (Sea-Tac Airport) is reflecting the region's growth and building new facilities to meet the demand for traveler services, including the current construction of a new International Arrivals Facility, modernization of the North Satellite, and a new centralized baggage system. The airport generates \$442 million in state and local taxes annually, supporting 87,300 direct jobs with \$3.6 billion in wages.

E-commerce and online shopping are also impacting airport capacity, with FedEx, DHL, and Amazon Prime all relying on the Sea-Tac Airport hub. Washington state now handles 3 percent of national air cargo, with Sea-Tac Airport ranked 19th in air cargo volumes in North America. Air cargo traffic is expected to grow 4 percent annually for the next 20 years. The airport served 49.8 million passengers and 432,315 metric tons of cargo in 2018.

The Sustainable Airport Master Plan (SAMP) is the blueprint to meet future regional demand, recommending 30 near-term projects that will improve efficiency, safety, access to the airport, and support facilities for airlines and the airport, by implementing the following benefits:

- Projects will accommodate 56 million passengers and meet the forecasted demand to 2027.
- The Central Terminal Renovation will add 10,000 square feet of shops and restaurants, while dining and retail redevelopment will expand from 85 to 135 establishments by 2024, adding more jobs, customer choices, and business opportunities.
- The new International Arrivals Facility is expected to support 10,600 jobs, including 500 jobs a day during the peak months-long construction period.

After experiencing 5 years of project growth in a short 10 months, Spokane International Airport is in need of capacity upgrades to continue meeting high passenger and freight volumes. Construction will begin soon to expand passenger terminals, security checkpoints, and a two-story gate area.

The following project benefits are expected from this project:

- Better connections between existing terminals
- Centralized baggage claim
- New security checkpoints to handle more passengers



Spokane International Airport Expansion Project Cost: \$130,000,000

Washington's Economy Requires Diverse Investments to Keep it Growing

Washington's economy is diverse—from cutting-edge technology companies to traditional natural resource sectors. Washington also depends on access to broadband to attract jobs to rural communities. Some rural areas of Washington rely on aging copper systems that can only produce the slowest digital subscriber line services. Upgrading to broadband is key to supporting businesses and providing reliable access to information, good-paying jobs, education, and health care.

Different industries have different infrastructure needs to meet the demands of a growing economy. Local governments are often on the front lines of delivering needed infrastructure. Cities, counties, ports, and public utilities own, maintain, and improve vast road, transit, freshwater, stormwater, and wastewater networks. While large, globally connected companies may depend on upgraded access via world class airport terminals, agricultural industries rely on an adequate supply of water delivered through functioning water and irrigation systems.

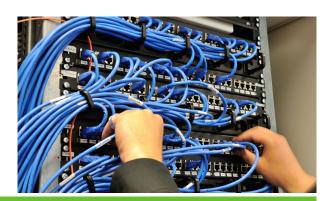
Employees depend on transportation infrastructure to reach their jobs. In addition to traditional auto or transit commutes, more than 75,000 Puget Sound residents commute to work or school via Washington state ferries. Washington state Ferries operates the largest ferry system in the United States and the fourth-largest in the world, using the Puget Sound as a marine highway for commercial use, tourists, and commuters. Twenty-two ferries cross Puget Sound and its inland waterways, carrying more than 22 million passengers to 20 different ports annually. In addition, local ferries operated by Whatcom, Skagit, King, Pierce, and other counties provide essential connections for people and freight between Puget Sounds locales.

Washington's Broadband Needs

Washington is the 14th-most connected state, and cable and internet providers have invested billions in improving access to broadband; they currently serve **7.4 million** wireless subscriber connections across the state. However, **5.2 percent** of Washington households lack access to a broadband connection. The remaining homes without access are geographically dispersed, making it difficult and expensive to fully meet broadband access needs.

\$1 billion the private sector spends on fiber deployment will create between **15,000 and 20,000 newjobs**.

The wireless industry in Washington supports **201,498 jobs** with an economic impact of **\$21.3 billion** for the state's gross domestic product (GDP).



Lake Cushman Broadband Project Mason County Cost: \$2,698,335

The rural, densely forested and mountainous area of Mason County, has limited cellular service and internet availability. The lack of interconnectivity between the residents of this area severely impacts the quality of life in social, business, and educational areas and stifles economic development. The economy of Mason County heavily depends on the logging industry, and due to the sharp economic downturn in that industry, many workers are now going back to school or starting new careers. The unemployment rate in this area is 13.9 percent, as compared to the Washington state unemployment rate of approximately 4.5 percent. With only a single community college in Mason County, and one incorporated city, the availability of broadband would give many more people an opportunity to continue their education and earn their degrees online.

The following project benefits are expected from this project:

 Job creation during construction, as well as permanent jobs for service technicians and improved access to employment. Currently, no major employers are in the area due to a lack of broadband and basic phone service. This project provides the opportunity for residents to telecommute, operate home businesses, and attend online courses.

- New, expanded service. Funded by private investments and a federal grant, the project will provide service to 551 homes, a community center and the Skokomish Indian Tribe's Skokomish Park at Lake Cushman, a 100-site recreational vehicle park and campground.
- Improved emergency response and public safety. This project removes barriers to access health care for rural residents who currently depend on land lines to place 911 calls.



consists of one 102-year-old span and one 61-year-old span, is one of only six remaining draw bridges on the U.S. interstate system. As of 2016, around 135,000 vehicles and approximately \$110 million in freight traffic crossed over the bridge each day.

Worsening congestion has resulted in a 278-percent increase in travel time between Portland and Vancouver from 2011 to 2016. Upcoming capital maintenance projects such as trunnion replacement, bridge painting, and deck replacement are estimated to cost \$282 million by 2040. The existing structure poses serious safety concerns; it does not meet current seismic standards and has narrow lanes, no safety shoulders, and substandard multimodal facilities. Additionally, maritime traffic on the river means the draw bridges can be lifted any time of day or night, further disrupting traffic.

A replacement bridge will reduce congestion, improve safety, enhance freight access, and support the region's long-term economic development. The Washington legislature and WSDOT have dedicated resources to working with the state of Oregon to address this bi-state priority in one of the nation's fastest-growing metropolitan areas.

The following project benefits are expected from this project:

- Reduced congestion by adding additional lanes, eliminating a draw bridge, and providing access to high-capacity transit for reduced travel times and improved trip reliability for all users
- Improved safety through wider lanes, safety shoulders, improved pedestrian and bicyclist access, and seismic resiliency
- Increased capacity for continued growth to meet current and future demands of the region



Interstate 5 Bridge Replacement over the Columbia River

Cost: \$3.175 billion



Military Infrastructure Buoys Washington's Economy

Washington has six active duty military installations, a significant homeland security installation, two U.S. Department of Energy facilities, and two worldclass universities conducting defense-related research. The military and defense sector generates more than \$13 billion in annual procurement supported by nearly 2,000 businesses across Washington; this accounts for nearly 3 percent of the state's GDP. This sector includes infrastructure (missions, installations, and workforce), industry (suppliers and contractors), and partnerships. The military is the second-largest public employer in Washington state, employing more than 127,000 active duty, reserve, and civilian personnel. Infrastructure is vitally important to our homeland defense. Our military relies on Washington's deep-water ports, strategically located airports, rail system, and access to the Pacific Ocean.

Washington hosts some of the nation's largest military contractors, including Boeing, Insitu, and Vigor Industries. During the past 3 years, state businesses were awarded nearly \$15 billion in defense contracts.



US 2 Westbound Trestle Project Snohomish County Cost: \$1.2 to \$1.4 billion

The U.S. Highway 2 (US 2) trestle bridge provides a critical connection to urban centers along the Puget Sound and military facilities such as Naval Station Everett and U.S. Army Reserve Command Team in Marysville. The highway serves Snohomish County, where the population has more than doubled since 1980 and is expected to add another 200,000 residents by 2035. Rapid population growth is adding pressure to already congested roadways and public facilities, leading to spillover onto other highways and local surface streets.

Constructing a new three-lane trestle bridge must begin within a decade to provide a replacement structure before the current span reaches the end of its useful life. The three- and four-lane trestle alternatives are estimated to cost between \$1.2 and \$1.4 billion dollars.

The following benefits are expected:

- Upgrading the critical link to military and national defense facilities
- Using financing that allows for a public-private partnership option, which would result in cost sharing and incentives to accelerate project planning and construction
- Relieving congestion currently impacting commuters in a rapidly growing county
- Creating shorter, predictable travel times for freight using the US 2 corridor to move goods to market



Cofferdam Barge Facility Improvements
Clallam County
Cost: \$2.4 million

"The facility supports regional lumber mills that use local resources and is extremely important to our community... Support for the wood-products industry provides a financial incentive for landowners to invest in their forests and keep them healthy for future generations."

Julie Knott, Interim Executive Director Clallam Economic Development Corporation

The cofferdam barge facility in Clallam County is being upgraded to turn the temporary structure into a permanent barge for a growing natural resource market. When the structure's original purpose as a dry dock was halted due to the presence of historic resources, the structure was transferred to the Port of Port Angeles and put into productive use. The dock structure was modified to act as a barge to transport logs and raw materials for local, regional, and international wood-supply markets. Markets for wood chips and hog fuel are growing, and wood mills are increasingly using barges to move wood to markets.

Upgrading the temporary structure will bolster the Port's ability to provide reliable supply chain services for the wood-products industry.

The following benefits are expected from this project:

- Creating 81 full-time jobs, with a median hourly wage that is 67 percent above the median hourly wage for the county
- Providing continuing support and investment in the Olympic Peninsula timber industry
- Leveraging every dollar invested by Community Economic Revitalization Board grant into \$12.50 in private investment
- Creating nearly \$200,000 in new annual state and local revenue



Yakima Integrated Water Plan Yakima River Basin Cost: \$4 billion



The Yakima Valley supports a \$3.2 billion agricultural industry and 5,700 jobs, which heavily depend on irrigation. The Yakima River has also historically supported large runs of salmon and steelhead. Currently, a significant regional water shortage has reduced available water for irrigation, habitat, and municipal water supply needs. Implementing the Integrated Water Plan will add 500,000 acre-feet to the basin's water supply, allow for easier transfer of water rights, restore 100 miles of cold water habitat to recover salmon runs and enhance habitat, and protect 200,000 acres of watershed.

The following benefits are expected from this project:

- Create hundreds of local jobs
- Increase water storage by 50%
- Impart \$1 to \$2 billion in benefits to salmon runs
- Result in agriculture and food processing industry benefits totaling \$3.2 billion and \$1.8 billion of exports through the Ports of Tacoma and Seattle

Washington Will Lead The Way In Sustainable Infrastructure

A changing climate will impact the future economy and infrastructure needed. To adapt, Washington is pursuing a "green economy" that focuses on sustainable energy use and production, as well as new clean and resource-efficient technologies. Washington is positioned to lead the way as a global leader in the new, green economy. The state boasts global corporations with access to worldwide markets and influence on supply chains.

The Washington legislature has demonstrated a commitment to green energy by mandating that 15 percent of the state's electricity comes from new energy sources. This goal has spurred private sector investment and partnership with world-class higher education institutions that support these efforts through research and development. Investment in infrastructure to transform the electric transmission grid is critical to support the delivery of new power sources.

Sustainability also means resiliency in the face of natural disasters or constructed events. Network resiliency—for transportation facilities, power grids, and water— is key to recovery.

Trade and industry organizations such as the Washington Clean Technology Alliance, Washington Technology Industry, and Northwest Energy Efficiency Council are leading the charge.

The state is supporting these efforts with the Clean Energy Fund, a \$40 million investment to support developing, piloting, and deploying clean energy technologies.

Currently, Washington boasts more than 900 clean-technology companies, employing nearly 58,000 workers. Green economy jobs are good jobs, ranging from engineers to construction workers to researchers

and scientists. Total wages for the clean technology sector are almost \$4 billion, averaging \$69,000 per employee. Demand for renewable energy and clean technology workforce training at community colleges across the state is growing. With resources and investment, Washington can create a strong, well-equipped workforce of the future.

The clean technology sector contributes more than

\$17 billion to Washington state's

economy



Restoring Fish Passage

The ability of salmon and steelhead to swim upstream to their traditional spawning grounds is vital to their recovery across Washington. Deteriorating culverts, outdated bridges, and other barriers block fish passage in many streams and undermine recovery efforts. Cities and counties have worked since 2014 on the Brian Abbott Fish Passage Barrier Removal Board to help develop a strategic statewide approach to culvert corrections that maximizes those investments. WSDOT has worked for more than two decades to reconnect streams and improve fish passage where state highways impede fish migration.

Washington state is under a federal injunction to replace nearly 1,000 culverts at an estimated cost of \$3.8 billion in the greater Puget Sound and coastal regions. Cities and counties have more than 4,000 inventoried culverts that also must be replaced in the 14-county injunction area, which could exceed over \$10 billion. It is critical to have a coordinated investment strategy that opens up all rivers and streams in watersheds and removes all fish passage barriers to assist in recovery of salmon and steelhead species in Washington state.

Funding Flexibility and Regulatory Reform Maximize Efficiency

The state is home to

281 cities
39 counties
75 port districts

that own, maintain, and improve much of the day-to-day infrastructure that supports the economy.

Partnership, cooperation, and communication are required because of the interconnected nature of infrastructure. Infrastructure often moves through many jurisdictions, across different facility ownership, and is used to deliver public and private goods and services. Cities, counties, and agencies are experts at developing program budgets that utilize all potential funding sources. However, too many restrictions on the use of funding can keep communities from implementing projects that meet local and regional needs. Many projects may not fit neatly into grant programs, despite widespread support across the public and private sectors. As economies grow more complex, projects often become intermodal and address multiple needs. Removing barriers and allowing funding flexibility are key to ensuring that local and regional priorities—particularly those spanning infrastructure areas—can move forward efficiently and without unnecessary red tape.



Wallula Dodd Water System Project
Port of Walla Walla
Cost: \$45 million

The proposed water system improvements will enable the Port to secure these industrial users at the Dodd Road Industrial Park and Wallula Gap Business Park, thus creating new family wage jobs, increasing the assessed value of Walla Wall County and the state, and creating additional taxes for local taxing jurisdictions to support their public operations.

Patrick H. Reay, Executive Director Port of Walla Walla

The Wallula Dodd Water System Project is a public-private partnership bringing much needed infrastructure to serve a growing business. The project will build transmission water lines, distribution water lines, a reservoir, trench excavation, gravel surfacing, asphalt surface restoration, and erosion control. The project will allow Tyson Fresh Meats to expand its facility and improve access to safe and reliable potable water, as well as expanded reservoir storage. Without the upgraded infrastructure, Tyson Fresh Meats feared unexpected plant slowdowns or potential shutdowns from an unreliable industrial water system. The upgraded infrastructure will also serve existing and future businesses within the Port's service area, including the future development of a 1,400-acre industrial park.

The following project benefits are expected:

- Establishing a multiagency public-private partnership that included \$3 million in loans and grant funds from the Community Economic Revitalization Board, \$6 million from the Department of Health
 - Drinking Water State Revolving Fund, \$6 million in local resources, and an expansion project investment of \$30 million by Tyson Fresh Meats.
 - Generating \$2.3 million in estimated new annual state and local revenue by the business expansion
 - Leveraging every dollar in Community Economic Revitalization Board funds into \$10 in private project funding
 - Creating 24 full-time jobs and retaining 1,300 full-time jobs, which would have otherwise been threatened.

Fostering a Strong Federal Partnership Will Keep the United States and Washington Growing

Building and maintaining infrastructure require strong partnerships between local, state, and federal agencies. Long-term, reliable funding and investments help businesses and agencies plan for their future. More recently, uncertainty and declining federal revenues have lefts states and local governments trying to fill the gap. Over the past few decades, government investment infrastructure as a percent of GDP has steadily declined. In 2016, direct federal spending on nondefense infrastructure was less than 0.1 percent of GDP, while state and local governments invested 14 times that amount on infrastructure.

Washington state is experiencing steady population growth. Seattle continues to rank as the fastest-growing city in America, and Spokane and Clark Counties are together expected to grow by another half-million people. Similarly, the Central Puget Sound will add another million people in the coming decades. To meet growing needs, local governments have asked voters to approve new taxes. Currently, transit authorities and local governments provide 82 percent of direct transit agency spending, while federal agencies provide 14 percent, and the state contributes 4 percent.



Puget Sound Gateway Program
Pierce County and King County
Cost: \$1.9 billion

WSDOT is working to completing State Routes 167 and 509 in Pierce and King Counties. These significant projects will provide better connections to the Ports of Tacoma and Seattle and improve reliability for people and goods moving through the region.

The following project benefits are expected:

- Reducing congestion through improving an alternate route to I-5
- Providing better access to Sea-Tac Airport
- Enhancing freight connections between Puget Sound ports and industrial areas of south King and north Pierce Counties
- Supporting regional economic growth and new jobs



Terminal 5 Modernization Project Northwest Seaport Alliance Cost: \$350 million Seattle's Terminal 5 is one of the premier container cargo shipyards on the West Coast due to its naturally deep berth, wide footprint, and connection to an on-dock rail yard. The Port of Seattle provides essential access to domestic and foreign markets for products, including valuable agricultural commodities from eastern Washington. Terminal upgrades are required to accommodate industry trends toward larger marine cargo vessels. The Terminal 5 Modernization Project will expand cargo-handling capabilities by strengthening the dock, upgrading utilities, enhancing water and air quality, and installing shore power to allow vessels to plug into electricity while at berth. The project is expected to begin in 2019 and be completed by 2023.

The following project benefits are expected:

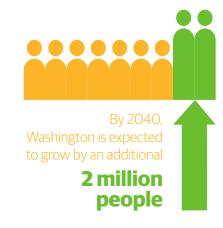
- Maintaining the status and economic competitiveness of Terminal 5 as a premier West Coast port
- Improving water and air quality through port modernization
- Lessening noise impacts for the surrounding community by implementing a rail "quiet zone"
- Securing long-term contracts with some of the world's largest ocean carriers

Washington is Forging Ahead

Washington is growing rapidly. With millions of new residents and jobs expected in coming years, in addition to major increases in trade, manufacturing, technology, and agriculture, the state's infrastructure is creaking under the pressure. Washington's quality of life depends on a resilient, sustainable infrastructure system that can withstand the increased likelihood of a major seismic event. Our military, trade partnerships, and local businesses depend on the reliability and ongoing investment in Washington's infrastructure. The Association of Washington Business, Association of Washington

Association of Washington Ports, and Association of Washington Counties are partnering to highlight these critical infrastructure needs; without more resources, the state risks falling behind.

Washington has a strong history of public-private partnerships and leveraging local public and private dollars to match funding. The state is taking action to devote new revenue and investments to support these priorities and is primed to leverage federal investments for these shovel-ready projects. The needs are great, but the economic payoffs at the local, state, and national levels make Washington a wise investment.



Infrastructure investments are equally important at all scales: from keeping local sewer lines in working order, to removing at-grade rail crossings, to keeping drinking water safe in all communities. Smaller investments are essential and add up to significant impacts that ripple throughout the economy.

The following resources informed production of this report

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Infrastructure investment will:

- Grow businesses and jobs
- Support trade
- Enable innovation
- Foster a resilient economy
- Support homeland security

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