



**Washington State USA**  
Innovation is in our nature.



# WASHINGTON STATE'S AEROSPACE BUSINESS CASE

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*Washington State's leaders and policy makers are fully engaged in supporting and growing the Aerospace Industry's footprint in the Northwestern United States. Washington's Aerospace base has the knowledge and skills required to provide Aerospace, Defense and Space customers with world class performance and products. The State is committed to developing the regional workforce to support the continued growth of Aerospace producers in the region.*

Bruce Lind, President  
General Plastics Manufacturing Company

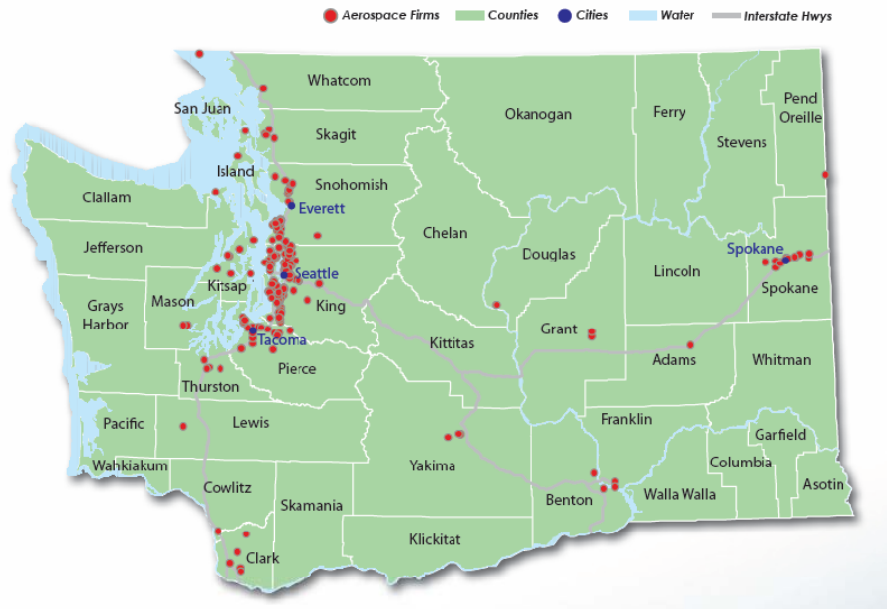


# Innovation is in our Nature

## AEROSPACE IN WASHINGTON

Washington offers aerospace companies access to one of the most robust and dynamic aerospace clusters in the world. Home to cutting-edge aerospace R&D in composites, avionics, and alternative fuels, Washington is at the forefront of the aerospace industry. The strength of Washington's aerospace cluster lies in its talented workforce and its diversity of activities such as airframe manufacturing, avionics, composites, engineering and research, tooling, and interiors.

**Aerospace Firms in Washington State**



Your company will also be able to tap into the synergies that exist between Washington's aerospace cluster and our other leading industry clusters, such as clean technology and the technology and software industries.

## ATTRACTIVE BUSINESS CLIMATE

- Independent rankings show Washington among top tier states for business
- Aerospace business taxes in Washington compare favorably with other states
- Recent tax reform measures benefit aerospace
- Washington's unemployment insurance fund is healthy

## ALIGNED FOR GROWTH

Washington consistently ranks high in business publications that rank competitiveness. Our philosophy is to create the environment that businesses need to grow. Our tax laws are business friendly. No income tax means that efficient companies will be able to use their profits for growth and expansion.

## GENERATIONS OF INGENUITY

Washington companies have changed the way the world does business. Businesses and consumers rely on technology created by Washington companies, and today this established technology ecosystem sets the stage for the emergence of new companies, innovations, and ideas. While some of the largest technology companies in the world call Washington home, the industry is also fueled by non-technology companies.

Washington's technology ecosystem is fueled by talent. Washington's world-class research institutions and globally-recognized companies attract the best talent in the country and in the world. The state's large international community, quality of life and location create a climate that attracts new residents from around the globe. Currently more than 83,700 people work in the aerospace industry and over 650 companies have set up an operation in Washington.

## DEFINITELY NORTHWEST

We realize that as a company, you look not only at what a location means to your bottom line today, but also how a location contributes to your future growth. This growth depends on attracting an educated workforce. That means being located where employees want to live, work, and build a family. In Washington, we've been recognized for our desirable quality of life - from our parks, our schools, neighborhoods, clean air, urban life, scenic mountains, to our music and culture - that attracts new residents and helps us maintain a creative, talented, and skilled workforce.

## Global Aerospace Center Advantages

More aerospace companies are concentrated in Washington than any other location in the world.

- A higher number of highly qualified suppliers and potential suppliers creates a critical mass of capabilities that the company can draw on here in Washington, but would be impossible to find elsewhere.
- Washington's vast supplier network and deep aerospace cluster constitute a critical mass of competencies and capabilities that are invaluable to the production process.
- Similarly, as employment levels rise and fall, having an existing aerospace skill base to draw upon allows aerospace companies to grow more quickly, since the hires would need less training than a new-hire in a competing state. Professional services that are specific to individual facilities are of substantially higher quality in Washington than they are in competing states as well.

### AEROSPACE CLUSTER

The strength of Washington's aerospace cluster lies in its talented workforce (see page 20 for more details on our aerospace talents) and in its six integral subsectors:

- airframe manufacturing
- avionics
- composites
- engineering & research
- tooling
- interiors

The companies within these sectors supply every major OEM in the industry; it is access to this breadth of knowledge and experience that allow companies like Safran, Toray, Goodrich, Electroimpact, Inc. and Esterline to grow and succeed in Washington.

## KEY SECTOR: COMPOSITES

Washington manufacturers are major players in the construction and use of parts, components and finished products using advanced composites, as well as tools to fabricate composite material. There are more than 40 composite companies in Washington; this list includes major companies such as, Hexcel, Composite Solutions, Toray, Triumph, and Janicki Industries. In recent years the sector has grown in tandem with the development and final assembly of the Boeing 787 in Everett, Washington. Aside from the 787 program, Washington State firms are engaged in a wide range of OEM programs and sub-contracting manufacturing and design.

“

*BMW chose Moses Lake over a competing Canadian site largely due to competitive electricity rates...but also because of Washington State's experience in carbon composites, in aerospace and other industries.*

*Friedrich Eichiner, BMW AG*

”

The latest addition to the state's composite cluster comes from the auto industry. In April, 2010 SGL and BMW officially announced a joint venture composite manufacturing in Moses Lake, Washington. The \$100 Million plant will manufacture carbon fiber paneling for BMW's new electric car. Italian car maker Lamborghini also has a presence in Washington with its composite material research laboratory. The laboratory is a collaboration between the University of Washington and the carmaker.

Washington's education and training sector has been proactive in designing new curriculum and programs to meet the growing need for composites and advanced materials-specific skill sets and research. Edmonds Community College and Everett Community College have partnered with the University of Washington to develop programs for certificates and associate degrees in Material Science Technology and Aerospace Manufacturing to maintain and further improve the local workforce. The programs have been recognized and awarded grants by the National Science Foundation.



## Attractive Business Climate



Washington was recognized as the best state to start a business according to U.S. News & World Report and as the fifth best state in which to do business, according to Forbes.com. Based on sound policies that reward the most productive companies, the state allows companies to keep profits necessary to continually improve operations. This is one of the many reasons why Washington aerospace and technology companies achieve such high levels of success, placing them at the top of the global economy.

Washington strives to encourage the growth and success of our aerospace industry and has created a tax structure rated as one of the most favorable in the nation. Washington State ranks fifth in the Small Business Entrepreneurship Council's list of best tax systems for entrepreneurship and small business.

### BUSINESS AND OCCUPATION TAX

Washington uses a business & occupation (B&O) tax in place of a tax on income; virtually all businesses are subject to this tax. Based on gross receipts this taxation structure can be very beneficial to your company. The current rate for an aerospace manufacturer is 0.2904% of sales of products manufactured in Washington. Accordingly, a manufacturing operation would be taxed \$2,904 for every \$ 1 million of taxable sales. This flat rate tax system allows an aerospace manufacturer to retain more earnings as profitability grows.

*Table 1: Corporate Tax Rates*

SITE LOCATION	CORPORATE TAX RATE
Everett, Washington	0.29% on gross revenues
Spokane, Washington	0.29% on gross revenues
Moses Lake, Washington	0.29% on gross revenues
Kinston, North Carolina	6.90% on operating income
San Antonio, Texas	1% on margin*
Wichita, Kansas	7.10% on operating income

Source: Deloitte Consulting, April 2009 report to State of Washington, State of Washington Department of Revenue

\* Margin equals the lesser of a taxable entity's: total revenue minus cost of goods sold; total revenue minus compensation; or 70% of total revenue.

## PROPERTY AND SALES TAX

Washington State property taxes vary due to voter-approved special levies. Property tax is administered by local governments. Washington does not assess property tax on intangible assets including patents and copyrights. Depending on the terms of the lease, your company may be responsible for paying property taxes on the building and on equipment such as computer hardware, peripherals and software.

*Table 2: Real and Personal Property Tax Rates*

Site location	Real Property	Personal
Everett, Washington	0.87%	0.87%
Spokane, Washington	0.79%-2.59%	0.79%-2.59%
Moses Lake, Washington	1.27 – 1.28%	1.27 – 1.28%
Kinston, North Carolina	1.50%	1.50%
San Antonio, Texas	2.50 – 3.00%	2.50 – 3.00%
Wichita, Kansas	2.95%	0.00%

Source: Deloitte Consulting., April 2009 report to State of Washington

## SALES AND USE TAX

Washington relies on consumer taxes and the most significant of these taxes is the retail sales tax. Sales tax does not apply to food products, prescription drugs, or professional and personal services. Local governments may levy a sales tax, adding 0.5 to 2.4% to the base rate of 6.5% statewide. Manufacturers, high tech firms, warehousing, and distribution firms locating or expanding may qualify for a sales and use tax exemption or deferral.

*Table 3: Sales Tax Rates*

Site location	Construction	Machines & Equipment	Supplies	Components
Everett, Washington	9.20%	0.00%	9.20%	0.00%
Spokane, Washington	8.70%	0.00%	8.70%	0.00%
Moses Lake, Washington	7.90%	0.00%	7.90%	0.00%
Kinston, North Carolina	6.80%	1.00%	6.80%	0.00%
San Antonio, Texas	8.10%	1.90%	8.10%	1.90%
Wichita, Kansas	0.00%	0.00%	7.10%	0.00%

Source: Deloitte Consulting., April 2009 report to State of Washington

## WORKER'S COMPENSATION

Washington is the only state with workers' compensation tax rates based on the hours worked, rather than per each \$100 of paid wages. This assures that an inflationary increase is not built into the system when wages rise. Rates are based on business classification and experience. Insurance is not paid for hours the worker is off the job including sick leave, vacation or holiday hours and leaves of absence.

## UNEMPLOYMENT INSURANCE

Unemployment premium rates are based on the company's actual experience with unemployment. The lowest rates are assigned to businesses with the lowest unemployment costs. New employers enrolling in the state's unemployment insurance program are initially assigned the average experience rating for their industry.

Washington's average unemployment tax rate has declined 42%, almost double the national average in the past four years. Your company would be responsible for 1.7% (average rate) on the first \$37,300 of an employee's salary in Washington.

## WASHINGTON'S TAX REFORM MEASURES BENEFIT AEROSPACE COMPANIES

Washington's governor and legislature consistently adopt new and innovative measures to maintain a competitive environment in the state for aerospace companies. Beginning with the enactment of landmark competitive aerospace legislation in 2003, the governor and legislature enacted multiple measures to support the aerospace industry including:

- Reducing the Business & Occupation (B&O) tax rate from 0.4840% of gross revenues to 0.2904% of gross revenues, numerous credits against B&O tax liabilities, exemptions to other taxes.
- Exempting from taxation, the installation, repair, cleaning, altering, imprinting or improving of transportation equipment, and other machinery and equipment, retroactive to June 2002.
- Expanding the 2003 tax package to cover suppliers and subcontractors of manufacturers. This includes credits against the B&O tax for property taxes paid on new buildings, new machinery and equipment, and land used for manufacturing.
- Creating the Employment Resource Center, specifically designed to assess and train employees on production methods for the 787.
- Creating a statewide aerospace apprenticeship training program. The [Aerospace Joint Apprenticeship Committee \(AJAC\)](#) manages and facilitates the development and growth of the aerospace apprenticeship programs in Washington State. The AJAC committee is comprised of industry employers, employees, and the International Association of Machinists and Aerospace Workers (IAM). The AJAC committee has equal representation from the different segments of the aerospace industry. The program is growing rapidly and currently trains in the following occupations: aircraft mechanics, machining, composites, aircraft interiors, and tool and die maker. This program is constantly looking for more occupations to develop, as they hear from aerospace industry members which occupations are especially in need of an apprenticeship program.

- Extending aerospace tax incentives to design/engineering services, other services; extending through June 2024 the B&O tax rate, as well as B&O tax credits for property and other taxes paid, to commercial airplane sales, component sales, manufacturing or sales of tooling, and FAR 145 certified repair stations.

# Aligned for Growth



## INCENTIVES AVAILABLE

Detailed discussions with your company regarding the type of operations and locations will help identify the full scope of incentives available. The following list is indicative of the incentives a company like yours could enjoy in Washington.

Table 4: Incentives

	Incentive	Target	Savings
1	Reduced B&O Rate	Manufacturers and Processors for Hire	Rate goes down from 0.484% to 0.2904% (Reduction of 40%)
2	B&O Credit for Preproduction Development Expenditures	Expenditures for aerospace preproduction development	Credit equal to 1.5% of qualified preproduction development expenditures
3	Retail Sales and Use Tax Exemption for Computers	Manufacturers and processors for hire of commercial airplanes and component parts of commercial airplanes	6.5% State Sales Tax 0.5 - 1.0% Local/County Tax
4	Property and Leasehold Excise Tax B&O Tax Credits	New buildings, the land upon which the new buildings are located and the increased value of renovated buildings	TBD
5	Manufacturer’s Sales/Use Tax Exemption	Purchases of Machinery & and Equipment Used Directly in a Manufacturing Operation	6.5% State Sales Tax 0.5 - 1.0% Local/County Tax

6	High Unemployment County Sales/Use Tax Deferral	Manufacturers, persons conditioning vegetable seeds, research and development and commercial testing for manufacturers in a qualifying county or in a Community Empowerment Zone (CEZ).	6.5% State Sales Tax 0.5 - 1.0% Local/County Tax
7	High Tech Sales & Use Tax Deferral/Waiver	Certain Construction and Equipment for R&D Purposes	6.5% State Sales Tax 0.5 - 1.0% Local/County Tax
8	High Tech B&O Credit for R&D Spending	Certain Qualified Expenditures Accrued During R&D Activities	Dependent upon R&D expenditures
9	Business and Occupation Tax Credit for New Hires	Job Creation	Up to \$4,000 credit for each new position
10	B&O Tax Credit	Customized Employment Training Program	50% of cost of training program
11	Job Skills Program - Competitive Grant	Training	\$900 per trainee

### 1. Business and Occupation Tax Rate Decrease

An aerospace manufacturer enjoys a preferential business and occupation (B&O) tax rate of 0.2904% in Washington. The rate applies to both the manufacturing activity and the subsequent sale of the manufactured product by the manufacturer.

### 2. B&O Credit for Preproduction Development Expenditures

Effective December 1, 2003, the law provided a B&O tax credit equal to 1.5% of qualified preproduction development expenditures used in manufacturing commercial airplanes or component parts of commercial airplanes by manufacturers and processors for hire of commercial airplanes or component parts of commercial airplanes.

Effective July 1, 2008, SSB 6828 broadens the definition of qualified preproduction development expenditures to include aerospace product development expenditures.

### 3. Retail Sales and Use Tax Exemption for Computers

Effective December 1, 2003, manufacturers and processors for hire of commercial airplanes and component parts of commercial airplanes were eligible for a retail sales and use tax exemption on purchases of computer hardware, software and peripherals used primarily in the development, design and engineering of commercial airplanes and component parts of commercial airplanes.

Effective July 1, 2008, the exemption is broadened to include computer hardware, software and peripherals used primarily in the development, design and engineering of aerospace products or in providing aerospace services. The exemption also applies to charges for labor and services related to the installation of qualifying computer hardware, software and computer peripherals. Computer peripherals include keyboards, monitors, mouse devices, and other devices that operate outside the computer excluding cables, conduit, wiring, and similar property.

#### **4. Property and Leasehold Excise Tax B&O Tax Credits**

The law provides a B&O tax credit equal to the property taxes paid on new buildings, the land upon which the new buildings are located and the increased value of renovated buildings when the buildings, land and renovations are used exclusively in manufacturing commercial airplanes or component parts of commercial airplanes.

The law also provides for a B&O tax credit on machinery and equipment acquired after December 1, 2003, used in manufacturing commercial airplanes or component parts of commercial airplanes.

#### **5. Manufacturer's Sales/Use Tax Exemption on Purchases of Machinery & and Equipment Used Directly in a Manufacturing Operation**

This incentive applies to purchases by manufacturers or processors for hire of machinery and equipment used directly in a manufacturing operation, testing operation, or research and development operation. The exemption also applies to charges for labor and services for installing, repairing, cleaning, altering, or improving qualifying machinery and equipment. (RCW 82.08.02565 and 82.12.02565).

The exemption may be taken by a manufacturer or processor for hire who manufactures articles, substances, or commodities for sale as tangible personal property, and who, for the item in question, meets the used directly test and overcomes the majority use threshold.

#### **6. High Unemployment County Sales & Use Tax Deferral/Waiver for Manufacturing Facilities**

The High Unemployment County Sales/Use Tax Deferral Program grants a deferral (and ultimate waiver) of sales/use tax on charges for construction and purchases of qualified machinery and equipment to manufacturers, research and development laboratories, commercial testing facilities, and persons conditioning vegetable seed located in qualifying counties or Community Empowerment Zones (CEZ). The sales and/or use taxes on qualified construction and equipment costs for such businesses located in qualified counties or CEZs are waived when all program requirements have been met and verified.

#### **7. High Tech sales/use tax Deferral/Waiver Program**

To be eligible for this incentive, the company must start new research and development or pilot scale manufacturing operations, or expand or diversify a current operation by expanding, renovating or equipping an existing facility anywhere in Washington. The technology categories are advanced computing, advanced materials, biotechnology, electronic device technology, and environmental technology.

### **8. High Technology B&O Credit for R&D Spending**

High technology businesses may claim a B&O tax credit for research and development activities in Washington. Businesses performing research and development in the following areas qualify for the high technology credit: advanced computing, advanced materials, biotechnology, electronic device technology, and environmental technology.



### **9. Rural County B&O Credit for New Employees**

Provides a credit against the B&O tax for each new employment position filled and maintained by qualified businesses located in a rural county or Community Empowerment Zone (CEZ). The Program provides a \$2,000 credit for each new qualified employment position with annual wages and benefits of \$40,000 or less; or a \$4,000 credit for each new employment position with wages and benefits of more than \$40,000 annually.

To be granted the credit, the business's average qualified employment positions at the specific facility must increase by at least 15 percent over the following four calendar quarters from the period in which the employee was hired.

### **10. Customized Training Program**

Allows your company to get a state B&O tax credit equal to 50% of the training cost.

[http://www.sbctc.edu/college/\\_e-wkforcecustomizedtraining.aspx](http://www.sbctc.edu/college/_e-wkforcecustomizedtraining.aspx)

### **11. Jobs Skill Program**

Helps your business remain competitive. You can get training by applying with a college and save up to \$900 per trainee.

[http://www.sbctc.edu/College/\\_e-wkforcejobskillsprogram.aspx](http://www.sbctc.edu/College/_e-wkforcejobskillsprogram.aspx)

For more details about incentives please refer to the Department of Revenue brochure:

[http://dor.wa.gov/Docs/Pubs/Incentives/TaxIncentivesOverview\\_web.pdf](http://dor.wa.gov/Docs/Pubs/Incentives/TaxIncentivesOverview_web.pdf)

## FINANCING OPTIONS

The Washington Economic Development Finance Authority (WEDFA) finances some of the best businesses in Washington. Yours could be next.

WEDFA’s customers do many things — machine aerospace components, make timber products, recycle dairy waste, build boats, compost organic matter, treat waste water, produce human blood and tissue products, collect trash and make hops extracts.

The Washington Economic Development Finance Authority (WEDFA) takes advantage of a special kind of federal income tax incentive, which allows us to pass on some of the benefits of state governmental financing to private enterprise and (in some cases) local governments. If your organization falls within any of the following categories, you should consider WEDFA as a possible financing source for your organization’s capital:

- Manufacturing
- Processing
- Production of alternate energy
- Waste Disposal
- Recycling
- Water or sewage treatment
- 501(c)(3) non-profit
- Governmental

## LOANS & GRANTS

*Table 5: Loans and Grants*

Method	Description
<a href="#">Community Economic Revitalization Board (CERB)</a>	<p><b>Uses:</b> Finances public infrastructure to encourage new development and expansion in targeted areas.</p> <p><b>Eligible Locations:</b> Statewide - Restricted to Public Infrastructure</p> <p><b>Amount:</b> Average \$1 Million, exceptions considered</p>
<a href="#">Brownfields Revolving Loan Fund</a>	<p><b>Uses:</b> Environmental remediation of commercial and industrial contaminated properties, also referred to as “Brownfields,” which helps to facilitate redevelopment of a site once environmental issues are resolved.</p> <p><b>Eligible Locations:</b> Statewide</p> <p><b>Amount:</b> Varies</p>
<a href="#">Rural Washington Loan Fund (RWLF)</a>	<p><b>Uses:</b> Gap financing for expansion and start-up, may be used for fixed assets and working capital.</p> <p><b>Eligible Locations:</b> Non-entitlement areas of state (rural communities)</p> <p><b>Amount:</b> Max. \$1,000,000 (min. \$100,000)</p>
<a href="#">CDBG Float Loans</a>	<p><b>Uses:</b> Short term (30 months) lending at low interest rates for qualifying projects. Secured by letter of credit.</p> <p><b>Eligible Locations:</b> Non-entitlement areas of state (rural communities)</p> <p><b>Amount:</b> Up to \$5 million</p>

<a href="#">HUD Section 108 Guaranteed Loans</a>	<p><b>Uses:</b> Gap financing for expansion and start-up; may be used for fixed assets and working capital. Up to 20-year term.</p> <p><b>Eligible Locations:</b> on-entitlement areas of state (rural communities)</p> <p><b>Amount:</b> \$4 million (min. \$1,000,000)</p>
<a href="#">Child Care Facility Fund</a>	<p><b>Uses:</b> Loans for costs related to starting or expanding a DEL-licensed child care facility. Grants to make health and safety improvements.</p> <p><b>Eligible Locations:</b> Statewide</p> <p><b>Amount:</b> Loans: Max. \$100,000 (min. \$25,000) Grants: \$25,000 (min. \$5,000)</p> <p><b>Note:</b> this program has not been managed by Commerce since 2003</p>
<a href="#">SBA Loans and Loan Guaranties</a>	<p>Small Business Administration (SBA) loans and loan guarantees are packaged by your private lender; not the state.</p> <p><b>Uses:</b> SBA 7(a): Loan guarantee for working capital, equipment, building acquisition/construction and sometimes debt consolidation</p> <p><b>Eligible Locations:</b> Statewide</p> <p><b>Uses:</b> SBA 504: Fixed asset acquisition for projects that create jobs</p> <p><b>Eligible Locations:</b> Statewide</p> <p><b>Amount:</b> \$35,000 per job created</p>

Table 6: Bonds

<a href="#">Tax-Exempt Industrial Revenue and “Exempt Facilities” Bonds</a>	<p><b>Who:</b> Primarily manufacturing and processing; may include wastewater, mass commuting, solid waste disposal, recycling or cogeneration.</p> <p><b>What:</b> Up to \$10 million in bonds may be issued to finance a project. Land acquisition, building construction, new equipment or purchase of existing facility. Bonds are exempt from federal income tax to bond holder, resulting in lower rates to borrower than conventional financing</p>
<a href="#">Consolidated Taxable/ Tax-Exempt Nonrecourse Revenue Bond Financing Program</a>	<p><b>Who:</b> Primarily manufacturing and processing; may include wastewater, mass commuting, solid waste disposal, recycling or cogeneration.</p> <p><b>What:</b> “Taxable Tail” bonds will normally used in conjunction with tax-exempt “exempt facility” or industrial revenue bond financings to allow the total project - both the parts eligible for tax-exempt financing and those not so eligible - to be financed in one bond issuance with the cost advantages of the melded rate and issuance process efficiencies.</p>

For more information about these bond financing options, please visit the [Washington Economic Development Finance Authority \(WEDFA\)](#) website.

## INDUSTRY SUPPORT

### **Washington State Aerospace Council**

The Washington Council on Aerospace is an ongoing effort for private and public partners to collectively identify and take actions that make Washington State government more responsive to the needs of the aerospace industry in Washington.

The council was tasked with finding ways to:

- Improve coordination, responsiveness, and integration of the state's aerospace training, education, research, and development programs to meet industry needs;
- Enhance the state's economic climate for the industry;
- Provide a forum for industry, labor and government to collaborate to ensure the needs of this vital industry are met in a timely and effective manner; and
- Ensure that Washington remains the best place in the world to design and manufacture aircraft and grow jobs in the aerospace industry.

### **Aerospace Futures Alliance (AFA)**

The AFA seeks to represent the needs and concerns of every company in the industry, regardless of size. AFA is committed to pursuing the issues that are important to you both in the legislature and through the initiative process.

AFA already begun work on issues such as transportation, health care and tax incentives for every aerospace company, promoting education which serves to strengthen the pool of skilled aerospace workers, and more.

### **Pacific Northwest Aerospace Alliance (PNAA)**

The Pacific Northwest Aerospace Alliance's mission is to maintain the Pacific Northwest as the premier aerospace hub within the global marketplace by working to ensure the continued viability and competitiveness of the Pacific Northwest aerospace industry.

PNAA accomplishes this through:

- Providing frequent networking opportunities
- Promoting and conducting educational seminars
- Informing members of business opportunities and industry changes

### **Inland Northwest Aerospace Consortium (INWAC)**

INWAC is a consortium of aerospace companies in Eastern Washington and Northern Idaho. The Aerospace companies in this region are an important part of the aerospace landscape in Washington, INWAC's goal is to provide the leadership, ideas, and proactive action necessary to advance the aerospace industry in the Inland Northwest.

## REGULATORY ASSISTANCE

The [Office of Regulatory Assistance](#) is the place to go for environmental and business permitting answers.

An interactive online questionnaire will help you determine which environmental permits are required for your project.

An environmental permit handbook, including schematics, fees, application forms and other information is available online.

The Office of Regulatory Assistance also provides one-on-one consultation and research for project-specific requirements.

The permit process may never be “fun” but Washington does make it easy:

- [Online Permit Assistance \(interactive questionnaire\) \(Office of Regulatory Assistance\)](#)
- [Environmental Permit Handbook \(Washington Department of Ecology, Office of Regulatory Assistance\)](#)
- [Small Business Assistance, Air Quality Issues \(Washington Department of Ecology\)](#)
- [Technical Resources for Engineering Efficiency \(free technical assistance for Washington businesses\) \(Department of Ecology\)](#)

Your contact will be:

Sheila Hosner  
[Sheila.hosner@ora.wa.gov](mailto:Sheila.hosner@ora.wa.gov)  
(425) 649-7114  
<http://www.ora.wa.gov>



## UTILITIES AND ENERGY

Businesses and industries located in Washington State enjoy the benefits of a reliable and competitive power supply. Washington is a leader in capitalizing on energy efficiency opportunities to extend supplies and keep prices competitive.

Washington is served by the largest coordinated hydro-electrical system in the world and is the leading hydro-electric power producer in the nation. Hydro-electric power accounts for nearly three-quarters of State electricity generation. Most of this comes from the power of the Columbia River. The federally operated Grand Coulee hydro-electric power plant on the Columbia River is the highest capacity electric plant in the United States and provides the cheapest electricity to those in the region. The average price of industrial electricity (energy charge) in Washington is 4.02 cents/kWh.

Washington's hydro-rich environment is augmented by rapidly growing wind energy. The [American Wind Energy Association \(AWEA\) Year End 2010 Market Report](#) noted that Washington pulled ahead of Minnesota to have the fifth largest installed wind capacity in the United States. The state's total wind generated power was up to 2,104 mw at the end of 2010. Harnessing the wind's power is part of the state's concerted effort to diversify its energy mix.

### **Washington's Renewable Energy**

In Washington, 15% of new electricity generation will be generated through new renewable energy sources such as wind, tidal, bio-fuel, bio-mass, and solar sources according to Initiative 937 which passed in 2006. Washington also has a renewable fuel standard, which requires motor fuels to be comprised of at least 2% ethanol and/or biodiesel. Once 2% of fuels are met by in state feed stocks the requirement will rise to 5%.

The net result of these initiatives will be to contribute to the availability of an ongoing sustainable and cost-effective power supply in Washington.

### **Electric Power**

Washington State's economy benefits from cost-effective and reliable electricity supplies since the beginning of major hydro-electric development in the 1930's. The Washington State Department of Commerce Energy division provides an overview of electricity data for the state:

- Hydro-power provides 73% of Washington's electric power.
- Washington State is served by both public and private utilities. The state's fuel mix is changing as new power supplies are developed.
- Washington State will continue to be served by increasingly reliable and competitive electric power supplies. Washington energy prices compare favorably with neighboring states.

## Natural Gas

Natural gas pipelines serve Washington State from British Columbia and Alberta, providing competitive prices for commercial buildings. Building of liquefied gas terminals (LNG) are currently being explored, which would create access to additional supplies.

The [Washington State Department of Commerce Energy division](#) provides detailed information on natural gas supplies in Washington State.



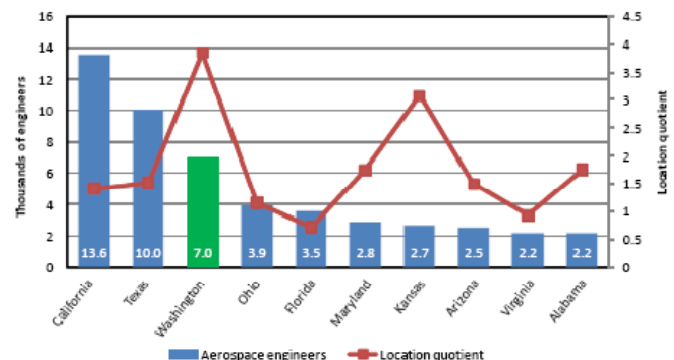
# Generations of Ingenuity



Your company stands to benefit from Washington State’s highly skilled aerospace workforce, consisting of the highest concentration of aerospace engineers in the nation. Washington’s location quotient, which quantifies how concentrated a particular occupation is in a region, ranks at 4.0 for aerospace engineers, much higher than any other state. A global leader in aerospace R&D and commercial aircraft products, we offer more than 7,000 skilled aerospace engineers.

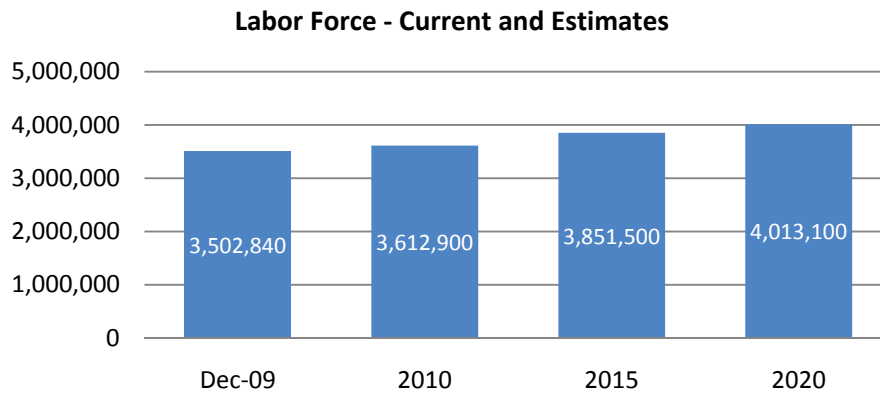
Washington State is equipped to provide a steady stream of highly skilled aerospace workers for your company. In 2009, Washington State Governor Christine Gregoire established the Washington Council on Aerospace, with a specific mandate to facilitate coordination among Washington’s worker training programs, community colleges, and universities. Washington State offers industry-wide support for aerospace companies with worker retraining opportunities, specialized aerospace programs, and tier one research institutions.

Figure 1: Aerospace Engineers by State



## LABOR FORCE STATISTICS

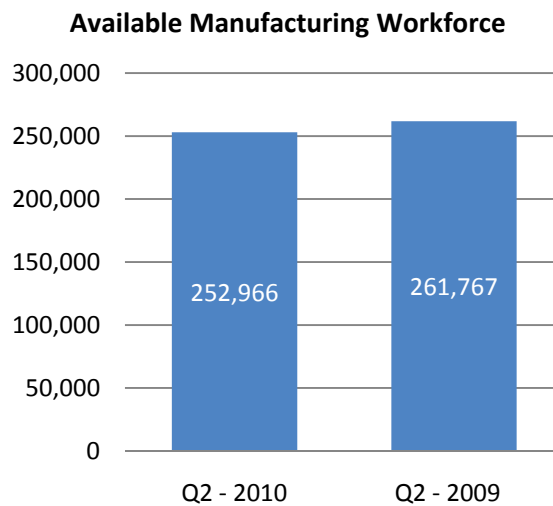
Figure 1: labor force



Source: Washington Employment Security Department; Office of Financial Management (OFM) Forecasting Division

The labor force is forecasted to grow at an annual average of 0.8 percent between 2010 and 2030.

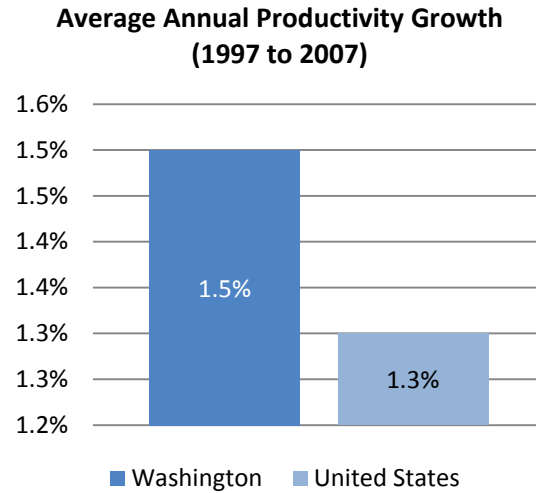
Figure 2: Manufacturing Workforce



Source: Workforce Explorer, Washington State Employment Security Department.

Note: numbers only represent employed people in the industry. The Employment Security Department is not counting people filing for unemployment.

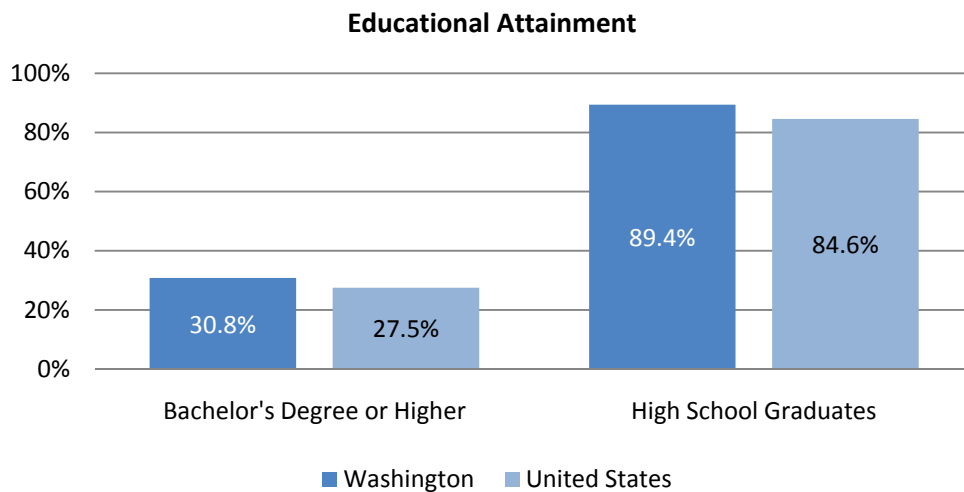
Figure 3: Productivity



Source: Washington Employment Security Department, Workforce Explorer, 2008.

In 2008, Washington had above average GDP and productivity growth and larger than average relative contributions to total national GDP growth. It ranks between 13 and 14 for intensive indicators among 51 areas (50 states and District of Columbia).

Figure 4: Education



Source: U.S. Census Bureau, The 2010 Statistical Abstract.

Washington ranks 10th among all states for adults (25 and older) with a bachelors degree or more according to the United States Census Bureau.

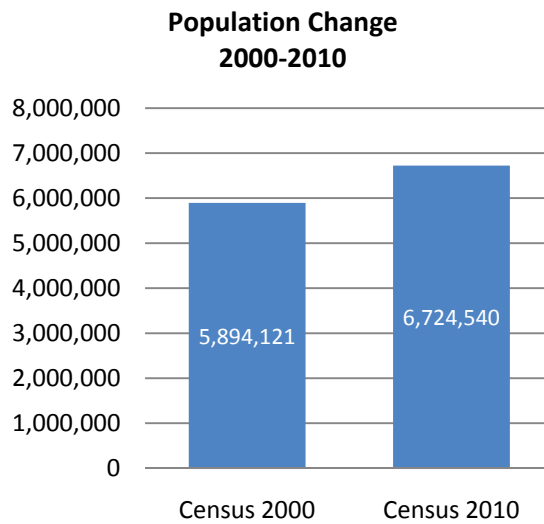
Table 7: Number of patents issued to companies or individuals per 1,000 workers

The Top Five	Adjusted Patents per 1,000 Workers
1 Idaho	2.47
2 Washington	2.18
3 California	1.53
4 Vermont	1.32
5 Delaware	1.25
U.S. Average	0.73

Source: The 2010 State New Economy Index.

## DEMOGRAPHICS

Figure 5: Population



Source: U.S. Census, 2010 Census Data

## WAGES

Washington’s workforce is one of the most educated and skilled in the nation. The Washington State Department of Labor and Industries makes an annual cost of living assessment to determine if an adjustment is required to the minimum wage. Information in regards to workforce, workers compensation, and unemployment insurance can be found at the following departments:

- [Employment Security Department](#) (Washington State Employment Security Dept.)
- [Workforce Explorer: Wage Rates](#) (Washington State Employment Security Dept.)
- [Workers’ Comp Industrial Rates](#) (Washington State Dept. of Labor and Industries)

*Table 8: Mean Hourly Wage and Number of workers*

Job Profile	Mean Hourly Wage	Number of Workers*
Aerospace Engineering and Operations Technicians	\$29.27	470
Aerospace Engineers	\$44.73	6,673
General and Operations Managers	\$63.83	21,653
First-Line Supervisors/Managers of Production and Operating Workers	\$30.57	10,747
Cutting, Punching, and Press Machine Setters, Ops	\$16.82	2,214
Helpers--Production Workers	\$13.50	6,035
Laborers and Freight, Stock, and Material Movers	\$13.16	44,257
Industrial Truck and Tractor Operators	\$17.88	13,192
Office Clerks, General	\$14.48	58,583

*Source: Washington State Employment Security Department, Workforce Explorer, March 2010.*

*\*2011 2<sup>nd</sup> Quarter, Employment Projections.*

## TRAINING

Washington leaders recognize that the aerospace workforce throughout the country is aging. Therefore, Washington is committed to providing world-class training to workers entering the industry, in order to replace the knowledge retiring workers will take with them.

Washington offers a broad range of aerospace training opportunities at locations throughout the state.

Thirty-four colleges, with geographic distribution throughout Washington, provide critical workforce training in aerospace-related fields.

Since 2004, Washington's community and technical colleges have enrolled 13,000 full-time equivalent students and invested more than \$22 million in programs directly supporting aerospace manufacturing alone. Examples include:

- Advanced composites manufacturing
- Robotics
- Precision machining
- Nanotechnology
- Computer integrated manufacturing
- Electrical design
- Electromechanical technology
- Engineering
- Computer-aided drafting and design
- Aerospace composite maintenance programs

### Aerospace and Advanced Materials Manufacturing Center of Excellence

Washington has created an Aerospace and Advanced Materials Manufacturing Center of Excellence to serve as a liaison between the aerospace industry and the state's educational system. The CoE for Aerospace and Advanced Materials Manufacturing is committed to working with industry leaders to develop customized programs critical to our industries that need just in time training for current and future workers.

Examples of Washington's training network include:

- **Edmonds Community College** developed a partnership with Dassault Systemes to deliver Computer-Aided Three-dimensional Interactive Application (CATIA) software training to primarily Boeing employees.
- **Everett Community College** developed an airframe apprenticeship program and a machinist apprenticeship program in partnership with the [Aerospace Joint Apprenticeship Committee \(AJAC\)](#).
- **Clover Park Technical College**, in partnership with Boeing, launched an aerospace composite program. The college has also developed a state-of-the-art training facility located at Thun Field.
- **South Seattle Community College** developed four aerospace apprenticeship programs in partnership with the Aerospace Joint Apprenticeship Committee, Boeing and the International Association of Machinists.

- **Spokane Community College** developed strategic partnerships resulting in the relocation of its aviation mechanics program to Geiger Field.
- A new partnership has formed between the aerospace industry and **Edmonds Community College** to provide industry-wide training opportunities at Everett's Paine Field, just south of Boeing's production facility.

### Aerospace Apprenticeships

\$3 million was provided to the State Board for Community and Technical Colleges (SBCTC) to support apprenticeships in the aerospace sector. Of the \$3 million, \$2.15 million is to support program development, curriculum development, equipment purchases, training, and related expenses of the apprenticeship program. The remaining \$85,000 is the support 130 enrollment slots at no more than three community and technical colleges, with at least one college being located east of the Cascade Mountains.

### UNIVERSITIES AND RESEARCH

Washington's world class research institutions and universities provide aerospace companies with the skilled employees, managers and business executives needed to maintain world leadership in this critical industry. Aerospace companies have hired thousands of University of Washington and Washington State University engineers over the years, from a wide range of disciplines within engineering.

Washington institutions also offer programs uniquely focused on the industry, including:

- **University of Washington:** Master in Aerospace Engineering in Composite Materials and Structures, Master in Applied Mathematics, and special programs offered in Everett in Global Integrated Systems Engineering, Aircraft Composite Structural Analysis and Design, Aircraft Composite Materials and Manufacturing, Modern Aircraft Structures.
- **Washington State University:** Masters in Material Science Engineering, Certificate in Sustainable Design and Manufacturing, Certificate in Electrical Systems for Airplanes.
- **Central Washington University:** MBA in Supply Chain Management, Flight Technology.
- **Seattle Pacific University:** Masters in Business Administration (offered in Everett at Boeing).
- **Western Washington University:** \$1.2 million was provided to establish an interdisciplinary Advanced Materials Science and Engineering Center. This center integrates chemistry, physics, and engineering into the production of materials that are employed in industries such as aerospace, microelectronics, and biotechnology.

The UW's 4,000 member faculty has won six Nobel Prizes, two Pulitzer Prizes and two National Book Awards. There have been five National Medal of Science winners and 13 MacArthur Fellows. As reported in The Economist, China's Shanghai Jiao Tong University ranks the UW number 16 among the world's leading research universities. U.S. News & World Report ranks the UW as the 11th top public university

in the nation. Every year since 1974, UW faculty has been awarded more federal research funding than any other public institution in the country.

## APPLIED RESEARCH

Washington has invested more than \$21 million in aerospace and other applied research programs. The Washington Technology Center's Research and Technology Development program awards grants annually to Washington researchers in partnership with a company. The competitive process includes ranking by specialist committees. Some of the projects funded by the program include:

- Boeing and HEATCON Composite Systems: Pre-Repair Thermal Mapping and Leak Detection, to improve the efficiency of composite-structural repairs.
- Insitu (now a wholly-owned Boeing subsidiary): a three-phase RTD award recipient. In phase 3, UW tested flight software in a geophysical survey UAV.
- dB Systems: With UW developed and tested a new approach to voice recognition, to be used for controlling various avionics instruments during noisy in-flight conditions.
- StressWave: With a UW researcher optimized a new automated process, which makes fastener holes more resistant to fatigue.

## STEM (SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS)

In December 2007, Governor Gregoire announced a far-reaching Math and Science Initiative with the following goals:

- Recruit and train 750 new math and science teachers.
- Establish a bonus structure for nationally certified teachers who teach math and science in challenging schools.
- Align the state math curricula with international standards.
- Increase access to scholarships in STEM fields.

In March 2011, [Washington STEM](#) (Science, Technology, Engineering and Mathematics) a new privately funded program to improve teaching and learning in the critical disciplines of science, technology, engineering, and math, was officially launched. Washington STEM has made an inaugural investment of \$2.4 million to 15 educators, schools and education nonprofits from all corners of the state, including such well-known and well-respected programs as MESA, a leader in STEM education programs for students from traditionally under-represented populations; Teach for America, which recruits outstanding recent college graduates to teach for at least two years in urban or rural schools; and the Technology Access Foundation Academy, which serves students in Federal Way and is looking to expand to serve Renton as well. Schools from around the state, from Bellevue to Neah Bay and from Chimum to Tacoma, will receive grants to support and expand programs that are already effectively improving student achievement in the STEM disciplines. Washington STEM seeks to raise \$100 million over the next 10 years to increase the quality of STEM education throughout the state. So far, it has raised nearly \$20 million, with Microsoft, Boeing, McKinstry and the Bill & Melinda Gates Foundation as major donors.

# Globally Connected

## PORTS

Washington has seven deep-draft ports on Puget Sound, one on its Pacific Coast and three on the Columbia River. These ports work together to move goods into, through, and out of the state for distribution all over the nation. Asia Pacific markets can be reached one to two days faster from Washington than from California.



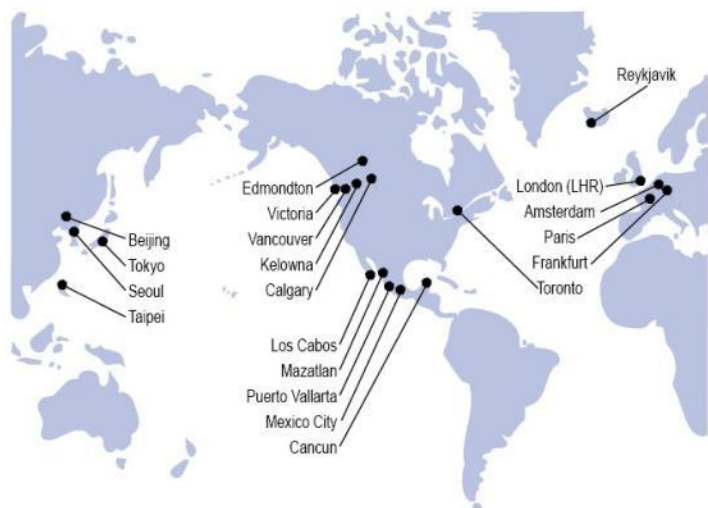
The ports of Seattle and Tacoma are world-class facilities that move a combined cargo volume ranking them as the third largest port complex in the nation. The Port of Tacoma provides double-stack service for railroad shippers and operates its own intermodal rail facility and dockside-to-mainline switching rail.

Ports on Washington’s Pacific Coast and lower Columbia River are also important trans-shipment points for ocean vessels and river barges. The state’s water transport system extends 352 river miles inland with additional port facilities on the mid and upper Columbia River and Snake River.

## AIRPORTS

### Multiple Direct Flights around the World.

Washington State is supported by an air infrastructure of 129 public-use airports, including 14 scheduled commercial-service airports and 2 international airports providing passenger service access across the state, the nation, and the world.



Direct International Flights

## Air Freight

Sea-Tac Airport is the country's 20th busiest cargo airport and offers almost 900,000 square feet (85,000 square meters) of cargo warehouse, airmail, and office space for the dynamic mix of domestic and international air cargo activity, totaling 341,952 metric tons in 2006. The airport also has more than 1.5 million square feet of aircraft parking apron, including multiple wide-body and nose-loading 747-F positions. Sea-Tac has six cargo-only carriers.

- 16 miles (27 kilometers) from downtown Seattle
- Operating 24/7 year-round
- Category 3B air traffic control capability ensures operating reliability
- Parallel runways are 11,500 feet (3,505 meters) and 9,425 feet (2,875 meters)
- Total air cargo area covers 3 million square feet (280 thousand square meters)

## Freighter and Widebody Passenger Services

Seattle's location in the northwest corner of the United States makes it a great Asian gateway for much of North America. Sea-Tac also offers convenient trans-Atlantic cargo schedules for its primary catchment area within the Northwest region with nonstop freighter services as well as the belly capacity available on nonstop wide-body passenger flights. Sea-Tac currently has nonstop flights to both Europe and Asia. Additional international service is available through Federal Express and Northwest flights connecting in Anchorage.

## RAILROAD

Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) are the major transcontinental rail providers in Washington. Both offer intermodal double-stack container rail transport that allows goods to be transported to the Midwest in less than three days, while eastern US Coastal cities can be reached within five days. Intermodal facilities are located in Seattle, Tacoma, and Spokane. There are 17 additional local service railroads.



Click to enlarge

- [Burlington Northern Santa Fe \(BNSF\)](#)
- [Union Pacific \(UP\)](#)
- [Intermodal Connector Listing](#) (U.S. Dept. Of Transportation, Federal Highway Administration)
- [Map--Intermodal](#) (BNSF)
- [Map-- Rail](#) (UP)
- [Washington State Rail Map](#) (Washington State Dept. of Transportation)
- [Washington Rail info](#) (Washington State Dept. of Transportation)

## TRUCKING/SHIPPING

Washington carriers provide scheduled daily departures to principal urban areas in the western, mountain, and mid-western regions of the US and western Canada. Washington ranks among the top ten states in general freight tonnage carried by truck interstate. This level of competition results in favorable negotiated freight rates.

Overland shipping distances from the state's metropolitan areas to the Midwest are shorter than routes from other major western coastal cities. Typical shipping times:

- Neighboring states in the U.S., including San Francisco: 1 day
- Los Angeles: 2 days
- Midwest: 2-3 days
- East Coast cities: 5-7 days

For more information, please visit the following pages:

- [Regulations, Vehicle Size and Weight](#) (Washington State Dept. Of Transportation)
- [Truck Licenses and Permits](#) (Washington State Dept. of Licensing)

## MAJOR HIGHWAYS

Four major interstate highways, I-5, I-405, I-90 and I-82 serve Washington and provide direct access to markets within the state and throughout the North American continent. Additionally, I-205 and I-182 allow inter-loop connections for the Vancouver and Tri-Cities (Richland-Kennewick-Pasco) areas.

- [State Highway Map](#) (Washington State Dept. of Transportation)
- [Mileage Charts](#) (Washington State Dept. of Transportation)
- [Traffic Report](#) (Washington State Dept. of Transportation)

## Definitively Northwest



Washington's high quality of life attracts top talent from around the world and the overall well-being of its residents result in more productive workers. Employees — from rank and file laborers to research scientists — want to live in Washington and raise their families here. They love the clean air and water, the mountains and lakes, and the safe and friendly communities.

In its 18th year, the Most Livable State Award was issued in conjunction with the publication of each year's new edition of *State Rankings*. Annually the editors collect data and select the factors that reflect a state's basic quality of life. The 2008 award is based on 44 factors ranging from median household income to crime rate, sunny days to infant mortality. Washington went from being 31<sup>st</sup> in 2007 to being rated 18<sup>th</sup> overall in 2008.

In 2009, CNBC rated Washington as having the 9<sup>th</sup> best quality of life in the nation. This ranking was based on several aspects ranging from access to healthcare to crime rate.

Washington's distinctive Northwest lifestyle mixes a progressive, creative culture with a casual nature that makes the state a very attractive place to live, work, and play. Washington also offers a variety of climates that will suit family's needs year round.

In September of 2009, The Wall Street Journal ranked Seattle the number 1 “Youth Magnet City”. Six expert panelists were asked which 10 cities will emerge as the hottest, hippest destinations for highly mobile, educated workers in their 20s when the U.S. economy gets moving again. The panelists—demographers, economists, geographers and authors on urban issues—picked Seattle based on the criteria they deem most important, from economic diversity to lifestyle.

Anchor to a region of corporate innovators, from Amazon.com to Starbucks, Seattle is “a high-tech and lifestyle Mecca,” panelist Dr. Florida says. Expert panelist Mr. DeVol says, “The city’s high-tech sector, with 226,300 workers, is just slightly smaller than Silicon Valley’s. City officials see rapid growth in biotech; Seattle also has tens of thousands of jobs in music and interactive media. And it enjoys a reputation as home to a lot of brainy people.”

Seattle, and Washington as a whole, continues to attract the best and the brightest our nation has to offer. In spite of layoffs in the finance, aerospace and tech sectors, net migration is up. This is due to the commitment people have to our region as a place they want to live, work and establish their lives.

## Summary

- **Washington's business climate is consistently rated among the top tier states for business.** Our business taxes on aerospace compare favorably with those in our competitor states. We have a healthy and sustainable Unemployment Insurance fund.
- **Washington provides aerospace companies with the lowest production risk of any location.** Our deep and strong aerospace cluster provides you with flexibility and stability in process development.
- **Washington's workforce is bigger, more highly trained, and far better experienced than that of our competition.** With over 83,700 people working in the aerospace industry, and thousands of others with aerospace experience, Washington's talent pool is unmatched by any competing state.
- **Washington's government is stable and is dedicated to providing the infrastructure our economy needs.** Our elected officials at all levels are strong advocates for the needs of our aerospace industry. Even through these difficult economic times, we are investing billions of dollars in our transportation infrastructure.
- **Finally, Washington offers workers the highest quality of life of any competitor state.** Objective analysts regularly rank Washington among the most livable states. This quality of life attracts top talent, improves the well-being of our residents, and increases worker productivity



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