



Taking stock of the Wenatchee area's **TECH SECTOR**

A glance at key findings from WSU's Wenatchee Valley Technology and Innovation Development Analysis Report

For the full report go to ourvalleyourfuture.org



The Wenatchee Metropolitan Area is emerging as a potential technology hub thanks to growth in businesses that employ people in tech-related occupations. Continued tech sector growth will lead to more jobs and greater earnings power for the community, along with expansion of the local tax base and additional amenities.



Potential technology hub

But barriers stand in the way — the need for more infrastructure, for higher educational attainment rates and technology skills among residents, and for more housing, and recreation and cultural offerings.

The community also must decide to what degree it is willing to divert energy exports to local tech sector use.

Our Valley Our Future, with financial help from the *Port of Chelan County* and the *Port of Douglas County*, hired *Washington State University's IMPACT Center* to analyze the benefits of tech sector growth and the gaps that exist in the community for that sector. This study is a key step in the Technology Hub game-changer project in the **Our Valley Our Future Action Plan**.

STUDY PARAMETERS

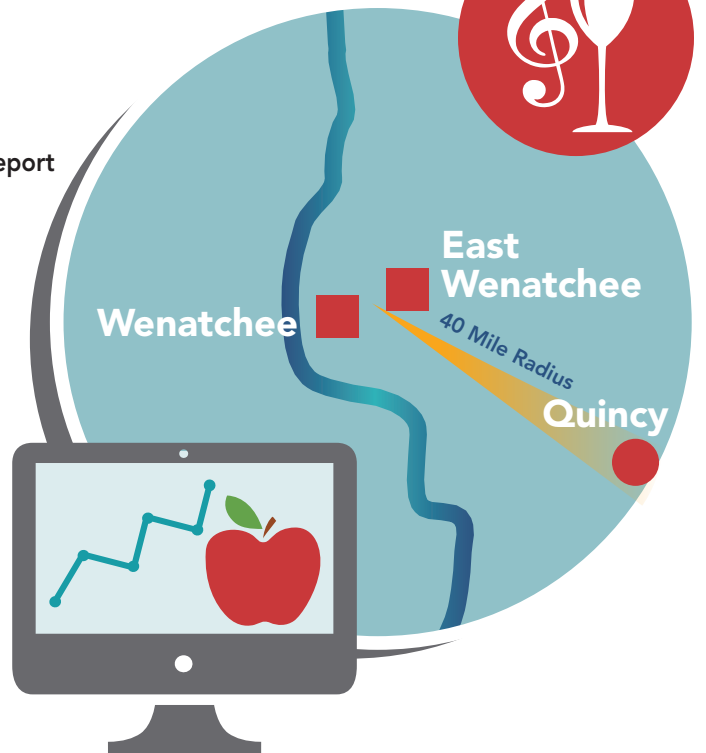
The **Wenatchee Valley Technology and Innovation Development Analysis Report** is an economic study and should not be confused for a strategy or a tactic.

The study focused on the Wenatchee Metropolitan Area. The gravitational region includes Quincy in neighboring Grant County.

The new manufacturing of the 21st century

The tech sector is defined by occupations and not industries. For example, a farmworker harvesting apples will have almost no technological component in their job. However, a farmworker monitoring apple harvest yields will almost certainly be analyzing data via technology. Today, thriving tech sectors

are considered "the new manufacturing of the 21st century" because they create so many direct and indirect jobs.



GROWING ECONOMY, WORK FORCE AND TECH SECTOR

Growth Rate in Gross Regional Product Per Capita — 2012-2017

The Wenatchee Metropolitan Area has witnessed strong growth in its **Gross Regional Product** in recent years, outpacing the state and nation in doing so.

Between 2012 and 2017, the Wenatchee area ranked

in the **TOP 11%** of all metropolitan areas in the U.S. for rate of growth.



Wenatchee Area



Washington State



United States

Job Growth Rate — 2008-2018



Between 2008 and 2018, the Wenatchee Metropolitan Area outperformed the state and nation in job growth rate, adding

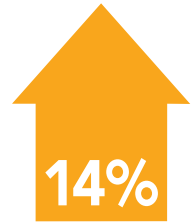
9,136 jobs for a total of **74,527 jobs.**



United States



Washington State



Wenatchee Area

Industries in Wenatchee Performing Better Than Expected in Job Growth, 2008-2018

- Agriculture
- Manufacturing • Wholesale Trade
- Government • Health Care
- Accommodation and Food Services
- Professional Services



Industries in Wenatchee Performing Worse Than Expected in Job Growth, 2008-2018

- Construction
- Real Estate
- Arts Entertainment and Recreation
- Retail Trade

Shift Share Analysis¹ of Tech Sector Job Growth by Peer Cities — 2008-18

Metropolitan Statistical Area	Jobs Added Due to National Trends	Jobs Added Due to Regional Advantages	Total Tech Jobs Added 2008-2018	Total Tech Jobs as of 2018	Metropolitan Statistical Area	Jobs Added Due to National Trends	Jobs Added Due to Regional Advantages	Total Tech Jobs Added 2008-2018	Total Tech Jobs as of 2018
Fort Collins, CO	1,368	1,288	2,656	9,468	Pueblo, CO	218	547	765	1,851
Ames, IA	391	873	1,264	3,211	Bend, OR	574	517	1,091	3,951
San Luis Obispo, CA	769	841	1,600	5,441	Wenatchee, WA	185	403	588	1,509
College Station, TX	510	639	1,149	3,689	Cheyenne, WY	267	257	524	1,854
St. George, UT	270	572	842	2,182	Boise, ID	2,998	(1,644)	1,354	16,282
Burlington, VT	1,139	570	1,709	7,382					

(1) Shift Share Analysis is a modeling method that determines how much of a region's growth is due to national trends and how much is due to unique regional factors, thus calling attention to a region's competitive or non-competitive advantages. In the chart above, the number of jobs listed in the column, 'Jobs Added Due to Regional Advantages,' can also be viewed as the number of jobs added in the tech-sector above what was expected.

CLOSING THE GAPS

The community's primary gaps — identified with information from focus groups, PUD reports, and government data — are centered around issues of financing. If the Wenatchee Metropolitan Area's tech sector is to grow, there must be more spent on education and training, power transmission, expansion of other utilities, Pangborn

Airport, other forms of transportation, and housing.

Recent research shows technology workers are attracted to amenity-rich areas. While the Wenatchee area scores well with coffee shops, breweries, wineries and co-working spaces, the community is lacking in other culture offerings and some recreation infrastructure.

Public-private partnerships are a critical component in tackling these various gaps.

AN ISSUE OF EDUCATION



14%
Wenatchee Population has a Bachelor Degree

Educational attainment, tech skills and entrepreneurship are key to technological development and industry growth. The Wenatchee area's educational attainment rates lag far behind state, national and major tech hub levels.

Educational Level	2018 Wenatchee % Population	2018 State % Population	2018 National % Population	2018 Austin, SF, San Jose % Population
Less than 9th Grade	14%	5%	7%	8%
9th Grade-12th Grade	7%	5%	7%	5%
High School Diploma	27%	23%	28%	17%
Some College	21%	24%	21%	19%
Associate Degree	9%	10%	8%	7%
Bachelor Degree	14%	21%	19%	27%
Graduate Degree-Higher	8%	12%	11%	18%

Public Higher Educational Institutions by Peer Cities (2019)

Community	Primary Public Institution	Number of Public Institutions	Community	Primary Public Institution	Number of Public Institutions
Ames, IA	Iowa State University	1	Fort Collins, CO	Colorado State University	2
Bend, OR	Oregon State University-Cascades Campus	2	Pueblo, CO	Colorado State University-Pueblo	2
Boise City, ID	Boise State University	3	San Luis Obispo-Paso Robles, CA	California Poly State University-San Luis Obispo	2
Burlington-South Burlington, VT	University of Vermont	2	St. George, UT	Dixie State University	2
Cheyenne, WY	Laramie County Community College	2	Wenatchee, WA	Wenatchee Valley College	1
College Station-Bryan, TX	Texas A & M University	2			

AN ISSUE OF TECH SKILLS

The study took a look at which tech occupations are in demand currently and which educational programs exist for supplying that trained labor. The analysis found many tech jobs are going unfilled due to a lack of local programs to train individuals. With other tech jobs, local programs are turning out a surplus of individuals.

A shortage of people with skills may stop firms from locating in the region or force those firms to recruit employees from outside the region. A surplus in other areas may lead firms to pay below market wages or lead people to exit the region and find employment elsewhere. The latter would represent a loss of skills to the region and the investments made in the training of people.

These gaps represent a severe impediment. The Wenatchee area must address this skills issue if it wishes to grow its tech sector.

Labor market gaps in the Wenatchee area

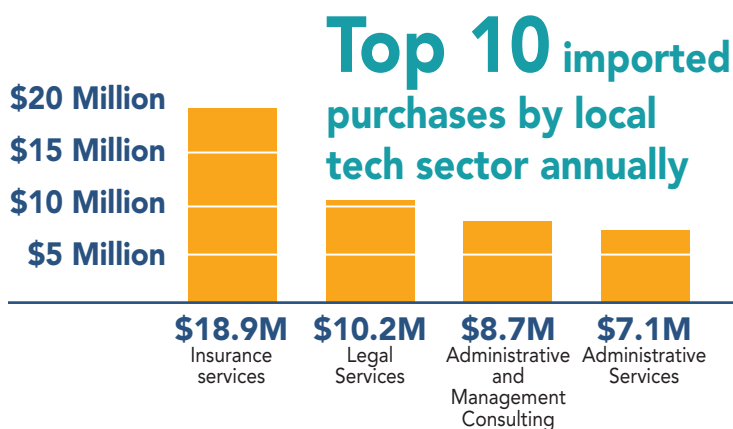
25 of 50 tech occupations have no local training program.

8 of 50 tech occupations have local training programs turning out a surplus of workers.

The unfortunate reality is that the local labor force is not being trained to grow and enhance the local technology sector, and any home grown talent is likely going to occur through on-the-job-training and employers who are willing to give uncredentialed talent a chance to prove themselves."

— Wenatchee Valley Technology and Innovation Development Analysis Report

UNDERREPRESENTED SUPPLY CHAIN BUSINESSES



The local technology sector spends approximately \$186.6 million annually on local goods and services, and \$304.7 million annually on imported goods and services. These figures represent a significant leakage for the local economy and the tech sector. Growing businesses that would provide these goods and services would reduce the money flowing out of the economy and help retain the revenues the tech sector brings into the region, further enhancing the multiplier effects of the tech sector.

IMPACT ANALYSIS: WHERE SHOULD THE POWER BE SOLD?

The Wenatchee Valley Technology and Innovation Development Analysis Report took a look at how a reduction in energy sales outside the region, coupled with an increase in energy consumption by the local tech sector, might alter economic activity and create more tech-related jobs locally.

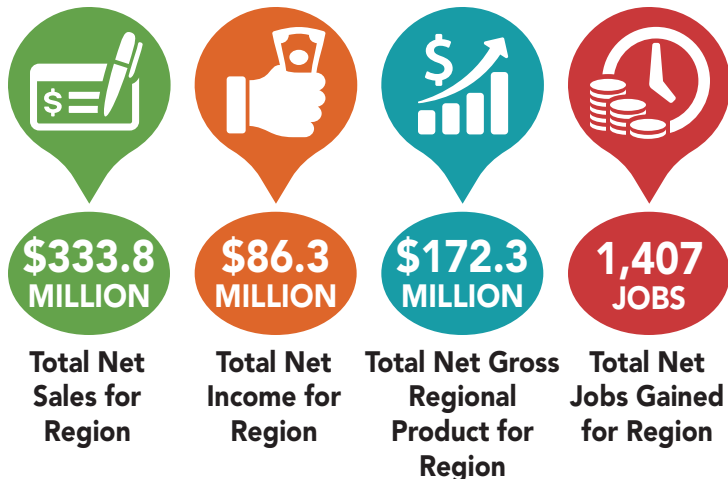
Today, the Chelan and Douglas PUDs sell about 4 million per megawatt hour (MWh) of electricity outside the region annually, generating revenues of \$160 million. This analysis assumes that 5

Two Different Scenarios

The expected impacts from this energy transfer (5 percent from wholesale to local) are studied under two different sets of assumptions. The first, known as “lower-bound” in the WSU study, assumes the PUDs will see revenue losses as they move 5 percent of their

Lower-Bound Assumption

In this modeling assumption, while the PUDs will see a loss in net revenues — \$1.9 million — from selling more electricity locally, overall there will be a net gain in the community due to sales by the local tech sector and other industries.



Conclusion

Growing the local tech sector wouldn't require a large deviation in electricity from the wholesale to local retail markets. Nor would it mean a measurable drop in revenues from power sales. The more pressing constraints to tech sector expansion are the costs associated with upgrading the local transmission and distribution infrastructure, improving education and training programs, adding more housing, improving air service, and providing more amenities. Partnerships will be necessary to address the shortcomings.

Partnerships will be necessary

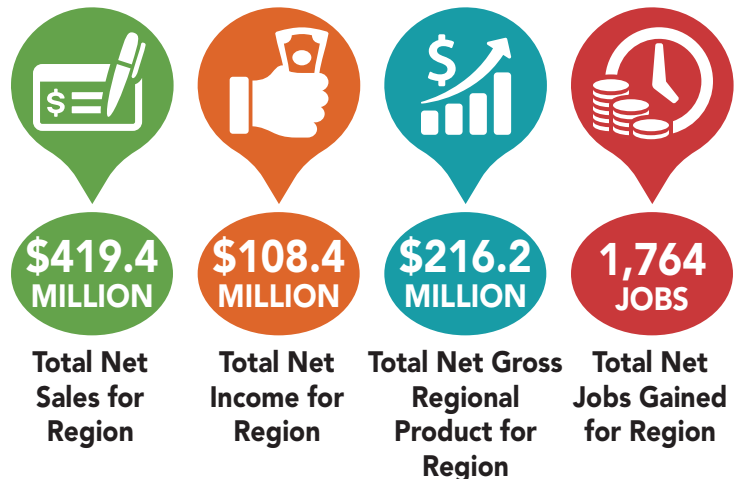
percent of those exports, or 197,000 MWh of electricity, are going to be converted to local use by the tech sector.

It also assumes most new jobs will be created by low-energy users that produce a high level of jobs per MW of electricity consumed. There also would be additional costs for more local transmission lines and substations to handle the larger local loads. Those costs are not factored in this analysis.

exports to local uses that support new tech-related jobs. The second, known as “upper-bound,” assumes the local tech sector will pay increased rates so that the PUDs are not made worse off from a revenue standpoint.

Upper-Bound Assumption

In this modeling assumption, the PUDs see no loss in net revenues from reduced electricity exports thanks to the local tech sector paying higher rates. The local tech sector and other industries also gain more sales.



In a forthcoming paper on business climate, Salaghe and others find that business relocation and expansion of high-wage firms is highly correlated with robust K-12 education, availability of fiber optics, and high-speed Internet. Access to passenger air transport within 30 minutes was also a statistically significant variable in determining a company's willingness to relocate or expand in a given geography. The main finding of their paper is that while businesses do prefer a lower tax environment (all else being equal), high-wage industries prefer the amenities provided by higher taxes more than they are repelled by high taxes.

— Wenatchee Valley Technology and Innovation Development Analysis Report



Sources: 2019 Wenatchee Valley Technology and Innovation Development Analysis, U.S. Bureau of Economic Analysis, National Center for Education Statistics, Chelan County PUD, Douglas County PUD