

Skills Centers Economic Impacts

Prepared by the Center for Economic and Business
Research

September 2021

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Table of Contents

About the Authors	3
Executive Summary.....	4
Surveying Methodology.....	5
IMPLAN Modeling Methodology	6
Wage Differential Activity Assumptions	7
Operations Activity Assumptions.....	8
Payroll Activity Assumptions.....	8
Key Terms.....	9
Economic Impacts of Individual Skills Centers.....	10
Cascadia Technical Academy Summary	11
Columbia Basin Technical Skills Center Summary	13
New Market Skills Center Summary	15
NewTech Skill Center (Spokane) Summary.....	17
Northwest Academy Summary	19
Pierce County Skills Center Summary.....	22
Puget Sound Skills Center Summary	24
Seattle Skills Center Summary	26
Sno-Isle TECH Skills Center Summary	29
Spokane Valley Tech Summary	32
Tri-Tech Summary	34
Twin Harbors Branch Skills Center Summary	37
Southeast Area Technical (SEATech) Skills Center Summary	39
Washington Network for Innovative Careers (WANIC) Skills Center Summary	41
Wenatchee Valley Tech Center Summary	43
West Sound Technical Skills Center Summary.....	45
Yakima Valley Technical Skills Center Summary.....	47
Washington State – All Skill Centers Summary.....	49

About the Authors

The Center for Economic and Business Research is an outreach center at Western Washington University located within the College of Business and Economics. In addition to publishing the Puget Sound Economic Forecaster, the Center connects the resources found throughout the University to assist for-profit, non-profit, government agencies, quasi-government entities, and tribal communities in gathering and analyzing data to respond to specific questions. We use a collaborative approach to help inform our clients so that they are better able to hold policy discussions and craft decisions.

The Center employs students, staff, and faculty from across the University as well as outside resources to meet the individual needs of those we work with. Our work is based on academic approaches and rigor that not only provide a neutral analytical perspective but also provide applied learning opportunities. We focus on developing collaborative relationships with our clients and not simply delivering an end product.

The approaches we utilize are insightful, useful, and are all a part of the debate surrounding the topics we explore; however, none are fail-safe. Data, by nature, is challenged by how it is collected and how it is leveraged with other data sources. Following only one approach without deviation is ill-advised. We provide a variety of insights within our work – not only on the topic at hand but also on the resources (data) that inform that topic.

We are always seeking opportunities to bring the strengths of Western Washington University to fruition within our region. If you are looking for analysis work or have comments on this report, we encourage you to contact us at 360-650-3909 or by email at cebr@wwu.edu.

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Executive Summary

Washington State's Skills Centers are an integral component of the state's education system. The Skills Centers provide specialized education programs for high school students and graduates. The programs teach a variety of technical and professional skills which improve outcomes for students and add value to Washington's workforce.

In this report, we quantify the values of the Skill Centers to Washington State. This is done using economic impact methodology which identifies additional values to the economy and evaluates how those values ripple through the rest of the economy. We focus on three key values: increased wages for program participants, spending on Center operations, and payroll for Center instructors. Each center was surveyed about their spending and number of program completers. We followed up with centers to gain more information as needed.

Overall, we find that the increase in student wages has a significant impact on the regional economy. The difference in wages that program completers receive compared to the wages that they would have received at a full-time minimum wage job is \$26,752,195, on average. The increase in wages contributes \$49,937,769 annually in value added to Washington's economy and adds nearly 600 jobs. Keep in mind that this figure assumes that all graduates would have otherwise worked a minimum wage full-time job, which may not necessarily be the case.

Wages for employees who work at the Skills Centers also have an important impact on the economy. Approximately 378 people work at Washington's Skills Centers, but these jobs support an additional 181 jobs due to added labor income. Operations at the Centers have relatively little impact, supporting 70 jobs and \$9,683,095 in economic activity.

There are also other impacts of the Skills Centers that are not able to be quantified such as the social benefits of having a better educated population such as lower crime rates and a better-informed voting population. However, economic impact analysis makes no evaluation of whether the money could be better spent elsewhere. The table below summarizes our best estimate of the economic impact of Washington's Skills Centers.

Table 1: Total Economic Impacts

Total Effect	Employment	Labor Income	Value-added	Output
Wage Differential (Induced Only)	598	\$26,752,195	\$49,937,769	\$82,110,028
Open Doors (Induced Only)	2	\$61,000	\$109,000	\$190,000
Operations	70	\$3,454,656	\$5,574,747	\$9,683,095
Payroll	559	\$46,999,758	\$56,217,007	\$84,727,820
Total	1229	\$77,267,609	\$111,838,523	\$176,710,943

Surveying Methodology

Accurate evaluation of each Skill Centers economic impact on local communities and Washington State being the goals of this study it was important to have consistent financial information across all facilities and programs.

To collect data consistently an Excel template was provided to the following 16 Skill Centers:

- Cascadia Technical Academy
- Columbia Basin Technical Skills Center
- New Market Skills Center
- NEWTech Skill Center
- Pierce County Skills Center
- Puget Sound Skills Center
- Southeast Area Technical (SEATech) Skills Center
- Seattle Skills Center
- Sno-Isle TECH Skills Center
- Spokane Valley Skill Center
- Tri-TechSkill Center
- Twin Harbors Branch Skills Center
- Washington Network for Innovative Careers (WANIC)
- Wenatchee Valley Tech Center
- West Sound Technical Skills Center
- Yakima Valley Technical Skills Center

As a separate study has been conducted for Northwest Academy Skill Center it was not included in this effort or this report.

The categories of data requested consisted of:

- Number of Administrative Staff (FTE) and associated salaries and benefits
- Number of Faculty per Program (FTE) and associated salaries and benefits
- Training Programs Offered
- Number of Students Completing Programs
- Operation and Supply Expenses
- Capital Expenses
- Revenue Sources

Individual Skill Centers were contacted as needed to provide clarification and supplement details.

IMPLAN Modeling Methodology

To model the economic impact of Washington State Skill Centers (for full list see Figure 2) on both the state and the region each skill center is in, the Center primarily utilized IMPLAN software. IMPLAN is an input-output region-specific economic modeling software designed by the Minnesota IMPLAN Group, Inc. (MIG). Based on this scenario modelling, we estimate the impact of each skill center on employment, income, and other macroeconomic factors both directly at the facility and on the regional economy. It is important to note that our analysis does not generalize to other geographic areas; our results are driven by region-specific spending statistics and multipliers that may not be true for other counties, municipalities, etc.

IMPLAN uses social accounting matrices (models of transactions between producers and intermediate and final consumers), local purchase percentages, multiplier effect models (accounting for direct, indirect, and induced effects), and zip-code specific statistics to quantify present economic structures and extrapolate the economic impacts of potential actions/projects. IMPLAN can help examine questions regarding the functioning of local economies, economic consequences of projects, and the effects of a given business on a community. A full glossary of terms related to IMPLAN is included in this report.

Figure 1 Workforce Development Areas in Washington State



12 total models were built for this analysis. The models represent the workforce development areas (WFDAs) in the state (see Figure 1). These 12 areas were designated by the Workforce Development Council to represent regions in which people both live and work. Thus, they often contain multiple counties and capture economic activity more accurately than at a county level. Note that the analysis for Northwest Academy is included in this report, though it has a separate report as well.

The final model is of Washington State, to capture the impacts of the skill centers across the entire state. While the WFDAs capture most of the economic activity in the state, some activity that originates in one WFDA impacts another through trade. We capture this additional activity, referred to as leakage, by running the impacts of all skill centers in the Washington State model.

Figure 2: All Skill Centers and Associated WFDEAs in Analysis

Workforce Development Areas	Skill Centers
<i>Benton-Franklin</i>	Tri-Tech
<i>Eastern</i>	SEATech
<i>North Central</i>	Wenatchee Valley, CB
<i>Northwest</i>	Northwest Academy
<i>Olympic</i>	West Sound
<i>Pacific Mountain</i>	New Market, Twin Harbor
<i>Seattle-King</i>	Puget Sound, Seattle, WaNIC
<i>Snohomish</i>	Sno-Isle
<i>South Central</i>	Yakima Valley
<i>Southwest</i>	Cascadia Tech
<i>Spokane</i>	NewTech, Spokane Valley
<i>Tacoma-Pierce</i>	Pierce County

Each model was built using economic data provided by MIG for Washington State counties in 2016, as well as a model for the entire state in 2016. The impacts of SARS-CoV-2 on the regional economy are highly uncertain and not considered in this report.

Every model contains 3 activities. These included: Operations, Payroll, and Wage Differential activities. The Operations activity models the institutional spending by each skill center, including capital expenses. The payroll activity models each skill centers'

spending on payroll for administration, staff, and faculty. Finally, the Wage Differential activity models the additional earnings of program completers, above minimum wage, over the year following graduation. We do not include earnings beyond one year as those earnings may be subject to other factors such as experience or further education.

The following is a summary of the data, calculations, and assumptions that were used as the basis for our models. All dollars are inflated to 2021 values.

Wage Differential Activity Assumptions

Impacts of students completing training programs are modeled by focusing on the impact of the students' *additional earnings* because of completing their program. These additional earnings are calculated by subtracting a full-time, Washington State minimum wage salary from the average entry-level salary of the job most similar to the content of the program of the program completer. This creates a per-program wage differential, or the difference between minimum wage earnings and the earnings of an entry-level job associated with the program

Each training program was evaluated and assigned a Standard Occupational Classification System (SOC) code for the closest occupation to the program's curriculum. Average entry-level salaries were obtained from JobsEQ, a data platform that combines multiple governmental and private data sources, by searching for these SOC codes. The appropriate minimum wage salary is equivalent to \$28,475 a year in 2021 dollars, based on Washington State minimum wage law. The wage differential calculated per-program was multiplied by the annual average number of program completers across 2018 and 2019, and these per-program totals were summed together. Finally, this number was entered into a Household Income Change activity in IMPLAN. Because additional income affects different income brackets uniquely, income changes were broken down by \$20k household income bracket (i.e., \$50-70k).

All program completers are assumed to work a job in the WFDA of their skill center in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by the individual skill centers. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from each skill center's vocational programs. This assumption may not be especially accurate as many programs had wildly different numbers of completers between the two years.

Operations Activity Assumptions

Using operational and capital expense budgets provided by the skill centers, we averaged the data provided across 2018 and 2019 by skill center to create an annual average operational and capital budget expenditure per skill center. We expect annual expenditures on supplies/operations and capital expenses to total approximately \$2.4 million when aggregating all skill centers in this analysis. We assume this money is spent in a similar way to the "state/local government education" operational spending pattern for each WFDA, which is designated by IMPLAN based on government and business expenditures in the region. The one change made to this model was to remove employee compensation from the spending pattern provided by IMPLAN, as this is accounted for with the third portion of the model, the Payroll Activity.

Payroll Activity Assumptions

Data for this model comes directly from each skill center's records of expenditures on salaries and benefits. FTE and salaries and benefits by Skills Center was averaged between the two years of data provided to account for fluctuation across years. Annual combined salaries and benefits of all Skills Centers in this analysis are assumed to be approximately \$39 million. This money was modelled via a two-step "analysis by parts" process. Direct effects were modelled separately from induced effects.

For direct effects, all salary and benefit information were summed for each Skills Center and entered as employee compensation into an Industry Change activity in IMPLAN. IMPLAN's estimated employment amount based off this employee compensation was replaced with actuals from FTE data provided by each Skills Center.

For induced effects, the total salary and benefit amount from above was entered into a Household Income Change activity in the \$100k-150k household income bracket. This was run separately from the direct effects above to avoid double-counting.

Key Terms

Program Completer: a student that has passed through an entire program at a Washington State Skills Center.

Direct Effect: The initial employment or spending changes being studied in an impact analysis; the input for the economic impact model.

Economic Impact: Quantified through direct, indirect, and induced effects. These are further broken down into employment impacts, labor income impacts, value-added impacts, and output impacts.

Employment: Full-time/part-time annual average. Thus 1 job lasting 12 months equals 2 jobs lasting 6 months. Similarly, a job that lasts one quarter of the year would be 0.25 jobs. Note that a person can hold more than one job, so the job count is not necessarily the same as the count of employed persons. This is expressed similarly to full-time equivalent employment (FTE).

Indirect Effect: When a sector experiences growth (or contraction), it will demand more (or less) goods and services from sectors that support it, encouraging those sectors to also grow (or contract). This business-to-business spending is known as the indirect effect. It stems from the initial change, or direct effect.

Induced Effect: When a job is created in one sector, new income is introduced into a community in the form of wages paid to that employee. That employee takes that income and spends it on goods and services in other industries, in turn promoting growth and job creation in those industries as well. This is the induced effect of the original change, or direct effect.

Labor Income: The sum of employee compensation (wages and benefits) and proprietor income. Represents the total value of all forms of employment income paid.

Output: The value of production by industry in a calendar year.

Value-Added: Value-added is equivalent to the industry's contribution to GDP. Represents output net of the cost of intermediate inputs throughout a defined economy during a specified period of time.

Economic Impacts of Individual Skills Centers

In an economic impact analysis, we estimate the impacts of a specific change, such as adding or subtracting jobs from a particular sector in the economy and region. We refer to the change being analyzed as the direct effects. Those effects have other, related impacts, which we capture under the categories of indirect and induced effects. In this case, the direct effects are the jobs and operational spending at each Skills Center. The addition of skilled workers to Washington State through the Skills Centers' training programs have corresponding business expenditures, which we capture in the indirect category. Those jobs, and the jobs of businesses supported by program completers, also result in additional household spending. We capture that impact in the induced effects category. For a more thorough explanation and definition of the terms used in this section, see the glossary on page 9.

In this report, we calculate the direct, indirect, and induced impacts in terms of employment, labor income, value-added, and output. It may be important to note that these (employment, labor income, value-added, and output) are different ways of measuring or describing the impacts. They are not different impacts that you should add together. Employment gives the number of jobs created, labor income is the sum of the income from those additional jobs, value-added is the gross output minus intermediate inputs (consumption of goods and services from other industries; equivalent to GDP contribution). Output gives the value of production in a calendar year, in technical terms, annual revenues plus net inventory change.

Readers will note that in the text, numbers are often rounded up to the thousands or millions. This is because economic impact analysis only provides an estimate of the true impact, which is often unknowable. While the tools and methodologies used to develop these analyses are useful and informed by theory and practice, they are not as precise as scientific instruments used in a lab due to the difficulties involved in truly understanding the complexities of economic systems. Regardless, these estimates are built using real economic data to simulate the changes being measured and the Center is confident in the reasonableness of all estimates below.

Cascadia Technical Academy Summary

The following section explores the impacts of Cascadia Technical Academy through three categories: wage differentials of completers, operational spending, and payroll. Table 3 below shows the total impacts across the entire model. the Cascadia Technical Academy creates a total of 142 jobs and \$12 million in value-added to the economy of the Southwest WFDA.

Table 3: Total Cascadia Technical Academy Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	63.1	\$2,595,780	\$5,106,907.7	\$8,364,672.9
Operations	7.2	\$299,021	\$485,597	\$873,505
Payroll	71.3	\$5,556,342	\$6,686,563	\$10,230,520
Total	141.6	\$8,451,143	\$12,279,067	\$19,468,697

Wage Differential Model: Inputs

An average of **932 students** completed Cascadia Technical Academy's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 4 below. All 932 completers are assumed to work a job in the Southwest WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by Cascadia Technical Academy. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the Skills Center's vocational programs.

Table 4: Cascadia Technical Academy Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Automotive Systems	86	\$35,400	\$6,925
Aviation	91.5	\$54,650	\$26,175
Business Principles	21.5	46,100	\$17,625
Construction Technology	59	\$41,260	\$12,785
Cosmetology	68.5	\$30,100	\$1,625
Criminal Justice	84	\$49,875	\$21,400
Culinary Arts	63.5	\$30,800	\$2,325
Dental Assisting	86.5	\$35,800	\$7,325
Diesel Technology	64.5	\$35,400	\$6,925
Fashion Design	28.5	\$49,000	\$20,525
Fire Fighting	84.5	\$51,000	\$22,525
Hospitality & Tourism	22	\$29,000	\$525
Information Technology	48	\$63,280	\$34,805
Pre-engineering & design	40	\$47,100	\$18,625
Pre-nursing	84	\$30,500	\$2,025
Minimum Wage (Full-Time)	--	\$28,475	--
Total	932		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 932 annual completers from Cascadia Technical Academy training programs support an additional 63 local jobs, \$2.5 million in labor income, \$5.1 million in total value-added, and \$8.4 million in output.

Table 5: Economic Impacts of Cascadia Technical Academy Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	63.1	\$2,595,780	\$5,106,907	\$8,364,672

Operational Impacts

Annual operations expenditures at Cascadia Technical Academy are modeled to support approximately 5 jobs at the Skills Center and 2 local jobs outside of the center, for a total of 7 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$299,000 in labor income, \$485,000 in value-added, and \$873,000 in total output. Payroll impacts are calculated separately.

Table 6: Economic Impacts of Cascadia Technical Academy Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	5.4	\$218,956	\$335,897	\$617,429
Indirect Effect	0.9	\$38,030	\$66,464	\$119,805
Induced Effect	1.0	\$42,034	\$83,235	\$136,270
Total Effect	7.2	\$299,021	\$485,597	\$873,505

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 51 jobs at the Skills Center and 21 additional local jobs, with labor income totaling \$5.6 million annually. Total value-added is calculated to be approximately \$6.7 million each year with total output of \$10.2 million per year.

Table 7: Economic Impacts of Cascadia Technical Academy Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	50.6	\$4,699,485	\$4,983,578	\$7,436,103
Induced Effect	20.7	\$856,857	\$1,702,985	\$2,794,417
Total Effect	71.3	\$5,556,342	\$6,686,563	\$10,230,520

Columbia Basin Technical Skills Center Summary

The following section explores the impacts of the Columbia Basin Technical Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 8 below shows the total impacts across the entire model. The Columbia Basin Technical Skills Center creates a total of 51 jobs and \$4.7 million in value-added to the economy of the North Central WFDA.

Table 8: Total Columbia Basin Technical Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	25.9	\$990,129	\$1,955,117	\$3,436,803
Operations	1.7	\$76,457	\$129,257	\$258,480
Payroll	22.9	\$2,155,944	\$2,607,987	\$4,275,669
Total	50.5	\$3,222,530	\$4,692,361	\$7,970,952

Wage Differential Model: Inputs

A total of **307 students** completed Columbia Basin Technical Skills Center's vocational programs annually in the 2019 school year; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 9 below. All 307 completers are assumed to work a job in the North Central WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by Columbia Basin Technical Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 9: Columbia Basin Technical Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Aerospace Composites	8	53,900	\$25,425
AP Computer Science	27	81,800	\$53,325
Automotive Systems	34	35,400	\$6.925
Aviation	8	54,650	\$26,175
Construction Technology	24	41,260	\$12,785
Cosmetology	61	30,100	\$1.625
Criminal Justice	25	49,875	\$21,400
Audio & Video Production	13	37,125	\$8.650
Manufacturing	33	33,500	\$5.025
Pre-engineering and Design	16	47,100	\$18,625
Pre-nursing	31	30,500	\$2,025
Video Game Design	27	81,800	\$53,325
Minimum Wage (Full-Time)	--	28,475	--
Total	307		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 307 annual completers from Columbia Basin Technical Skills Center training programs support an additional 26 local jobs, \$0.99 million in labor income, \$2.0 million in total value-added, and \$3.4 million in output.

Table 10: Economic Impacts of Columbia Basin Technical Skills Center Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	25.9	\$990,129	\$1,955,117	\$3,436,803

Operational Impacts

Annual operations expenditures at Columbia Basin Technical Skills Center are modeled to support approximately 1 job at the skill center and 0.5 local jobs outside of the skill center, for a total of 1.7 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$76,000 in labor income, \$129,000 in value-added, and \$258,000 in total output. Payroll impacts are calculated separately.

Table 11: Economic Impacts of Columbia Basin Technical Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	1.2	\$53,749	\$87,958	\$178,169
Indirect Effect	0.3	\$12,619	\$21,191	\$45,168
Induced Effect	0.3	\$10,089	\$20,108	\$35,143
Total Effect	1.7	\$76,457	\$129,257	\$258,480

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 16 jobs at the skill center and 7 additional local jobs, with labor income totaling \$2.1 million annually. Total value-added is calculated to be approximately \$2.6 million each year with total output of \$4.3 million per year.

Table 12: Economic Impacts of Columbia Basin Technical Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	16.1	\$1,897,666	\$2,084,735	\$3,363,159
Induced Effect	6.8	\$258,278	\$523,252	\$912,510
Total Effect	22.9	\$2,155,944	\$2,607,987	\$4,275,669

New Market Skills Center Summary

The following section explores the impacts of the New Market Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 13 below shows the total impacts across the entire model. The New Market Skills Center creates a total of 70 jobs and \$4.3 million in value-added to the economy of the Pacific Mountain WFDA.

Table 13: Total New Market Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	23.9	\$961,648	\$1,873,781	\$3,190,851
Operations	12.1	\$528,222	\$909,814	\$1,757,680
Payroll	34.4	\$1,262,390	\$1,512,744	\$2,287,680
Total	70.4	\$2,752,260	\$4,296,339	\$7,236,447

Wage Differential Model: Inputs

An average of **332 students** completed New Market Skills Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 14 below. All 332 completers are assumed to work a job in the Pacific Mountain WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by New Market Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 14: New Market Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Collision repair technology	30.5	\$35,400	\$6,925
Automotive Systems	20.5	\$35,400	\$6,925
DigiPen Art & Animation	30	\$63,300	\$34,825
Construction Technology	40.5	\$41,260	\$12,785
Cosmetology	27.5	\$30,100	\$1,625
Criminal Justice	33	\$49,875	\$21,400
Culinary Arts	21.5	\$30,800	\$2,325
Cyber Security	12	\$54,600	\$26,125
Animation & Graphics	5.5	44,600	\$16,125
Fire Fighting	26	\$51,000	\$22,525
Medical Assistant	35.5	\$35,800	\$7,325
Pre-vet Tech	28	\$31,700	\$3,225
business principles	7	\$46,100	\$17,625
Outdoor Leadership	14	\$36,775	\$8,300
Minimum Wage (Full-Time)	--	\$28,475	--
Total	331.5		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 307 annual completers from New Market Skills Center training programs support an additional 24 local jobs, \$0.96 million in labor income, \$1.9 million in total value-added, and \$3.2 million in output.

Table 15: Economic Impacts of New Market Skills Center Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	23.9	\$961,648	\$1,873,781	\$3,190,851

Operational Impacts

Annual operations expenditures at New Market Skills Center are modeled to support approximately 8 jobs at the skill center and 4 local jobs outside of the skill center, for a total of 12 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$528,000 in labor income, \$910,000 in value-added, and \$1.8 million in total output. Payroll impacts are calculated separately.

Table 16: Economic Impacts of New Market Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	8	\$356,716	\$593,021	\$1,186,673
Indirect Effect	2	\$92,924	\$161,679	\$308,084
Induced Effect	2	\$78,582	\$155,114	\$263,160
Total Effect	12	\$528,222	\$909,814	\$1,757,916

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 30 jobs at the skill center and 5 additional local jobs, with labor income totaling \$1.3 million annually. Total value-added is calculated to be approximately \$1.5 million each year with total output of \$2.3 million per year.

Table 17: Economic Impacts of New Market Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	29.5	\$1,063,119	\$1,115,496	\$1,612,403
Induced Effect	4.9	\$199,271	\$397,249	\$675,276
Total Effect	34.4	\$1,262,390	\$1,512,744	\$2,287,680

NewTech Skill Center (Spokane) Summary

The following section explores the impacts of the NewTech Skill Center through three categories: wage differentials of completers, operational spending, and payroll. Table 18 below shows the total impacts across the entire model. The NewTech Skill Center creates a total of 100 jobs and \$8.8 million in value-added to the economy of the Spokane WFDA.

Table 18: Total NewTech Skill Center (Spokane) Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	44	\$1,897,955	\$3,432,182	\$5,945,894
Operations	3.7	\$157,899	\$260,532	\$491,812
Payroll	52.5	\$4,141,072	\$5,087,528	\$7,744,762
Total	100.2	\$6,196,927	\$8,780,242	\$14,182,468

Wage Differential Model: Inputs

An average of **557 students** completed NewTech Skill Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 19 below. All 557 completers are assumed to work a job in the Spokane WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by NewTech Skill Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 19: NewTech Skill Center (Spokane) Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Animation & Graphics	30.5	\$44,600	\$16,125
Autobody Technology	39	\$35,400	\$6,925
Automotive Systems	88	\$35,400	\$6,925
Construction Technology	46	\$41,260	\$12,785
Cosmetology	31.5	\$30,100	\$1,624
Criminal Justice	34.5	\$49,875	\$21,400
Culinary Arts	58	\$30,800	\$2,325
Dental Assisting	24	\$35,800	\$7,325
Manufacturing	8	\$33,500	\$5,025
Medical Assistant	13	\$35,800	\$7,325
Pre-Nursing	35.5	\$30,500	\$2,025
Pre-Vet Tech	35.5	\$31,700	\$3,225
Video Game Design	24.5	\$81,800	\$53,325
Welding	41	\$36,367	\$7,891
Animation Graphics	18	\$44,600	\$16,125

Fish and Wildlife management	22	\$29,020	\$545
Construction	3	\$41,260	\$12,785
Nursing	4.5	\$30,500	\$2,025
Minimum Wage (Full-Time)	--	\$28,475	--
Total	556.5		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 307 annual completers from NewTech Skill Center training programs support an additional 44 local jobs, \$1.9 million in labor income, \$3.4 million in total value-added, and \$5.9 million in output.

Table 20: Economic Impacts of NewTech Skill Center (Spokane) Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	44	\$1,897,955	\$3,432,182	\$5,945,894

Operational Impacts

Annual operations expenditures at NewTech Skill Center are modeled to support approximately 2 jobs at the skill center and 4 local jobs outside of the skill center, for a total of 6 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$158,000 in labor income, \$261,000 in value-added, and \$492,000 in total output. Payroll impacts are calculated separately.

Table 21: Economic Impacts of NewTech Skill Center (Spokane) Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	2.2	\$91,656	\$145,978	\$284,903
Indirect Effect	0.7	\$31,757	\$52,009	\$98,994
Induced Effect	2.8	\$34,487	\$62,546	\$107,915
Total Effect	5.7	\$157,899	\$260,532	\$491,812

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 29 jobs at the skill center and 23 additional local jobs, with labor income totaling \$4.1 million annually. Total value-added is calculated to be approximately \$5.1 million each year with total output of \$7.8 million per year.

Table 22: Economic Impacts of NewTech Skill Center (Spokane) Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	29.4	\$3,131,396	\$3,250,333	\$4,571,906
Induced Effect	23.1	\$1,009,676	\$1,837,195	\$3,172,855
Total Effect	52.5	\$4,141,072	\$5,087,528	\$7,744,762

Northwest Academy Summary

The following section explores the impacts of the Northwest Academy through four categories: Open Doors program, wage differentials of completers, operational spending, and payroll. This Skills Center is unique in that it also includes the Open Doors program which is designed to help youth who have dropped out of high school or are not expected to graduate to complete their high school degree. Table 23 below shows the total impacts across the entire model. The Northwest Academy Skills Center creates a total of 69 jobs and \$6.0 million in value-added to the economy of the Northwest WFDA.

Table 23: Total Northwest Academy Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	26	\$990,000	\$1,878,000	\$3,281,000
Open Doors (Induced Only)	2	\$61,000	\$109,000	\$190,000
Operations	9	\$506,000	\$664,000	\$811,000
Payroll	32	\$2,777,000	\$3,356,000	\$5,133,000
Total	69	\$4,334,000	\$6,007,000	\$9,415,000

Open Doors Model

Last year, in the first year of this program, **27 students** graduated from high school in Whatcom and Skagit due (in part) to support received from this program. This model specifically looks at the impact of the NW Academy's Open Doors program in terms of the *additional income* graduates are expected to earn due to completing high school. Nationally, the average high school graduate earned approximately \$8,000 more per year than the average person without a high school degree in 2019, according to the Bureau of Labor Statistics. It should be noted that this is a nation-wide average of all individuals who have completed a certain level of education, not entry-level salaries for Skagit and Whatcom – as is the case in the Wage Differential model. It is assumed that all Open Doors graduates will work in Skagit or Whatcom the year after graduation.

Table 24: Weekly and Annual Earnings with and without High School Diploma

Education	Average Weekly Earnings	Average Annual Earnings (52 Weeks)
High school diploma	\$746	\$38,792
Less than a high school diploma	\$592	\$30,784

Wage Differential Model: Inputs

Impacts of students completing training programs are modeled similarly to Open Doors, in that it focuses on the impact of the students' *additional earnings* as a result of completing the program. **380 students** graduated from NW Academy's vocational programs in the 2018-2019 school year; the number of graduates from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in the table below. All 380 trainees are assumed to work a job in Skagit or Whatcom in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the

programs offered by NW Technical Academy. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from NW Academy's vocational programs.

Table 25: Northwest Academy Trainees, Estimated Salaries, and Difference from Minimum Wage

Occupation	# Graduates	Average Entry-Level Salary	\$ Above Min Wage
Fire Science	60	\$52,667	\$24,587
Aerospace Manufacturing	40	\$31,900	\$3,820
Applied Medical Science	40	\$42,800	\$14,720
Culinary Arts	40	\$28,900	\$820
Dental Assisting	40	\$33,150	\$5,070
Veterinary Assisting	40	\$29,700	\$1,620
Marine Services	20	\$34,600	\$6,520
Money & Business	20	\$39,800	\$11,720
Automotive Services	20	\$33,300	\$5,220
Aviation Technology	20	\$53,025	\$24,945
Construction Skilled Trades	20	\$36,000	\$7,920
Criminal Justice	20	\$44,225	\$16,145
Minimum Wage (Full-Time)	--	\$28,080	--
Total	380		

Open Doors Impacts

Uncertainty in the exact jobs worked by graduates means that only an induced effect can be estimated based on the additional earnings of high school graduates compared to the average worker who did not graduate high school. This implies that the estimate below is lower than the true impact, for it excludes the additional direct effect (exact wage differential) and indirect effect (business expenditures of their workplaces). For every 27 students who graduate high school through the Open Doors program, their extra earnings can be expected to support an additional 2 local jobs through their spending. Their spending is also forecasted to support an additional labor income of \$61,000 annually, total value added of \$109,000 per year, and an output of \$190,000.

Table 26: Economic Impacts of NW Academy Open Doors

Impact Type	Employment	Labor Income	Total Value Added	Output
Induced Effect	2	\$61,000	\$109,000	\$190,000

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to forecast induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 380 annual graduates from NW Academy training programs, support and additional 26 local jobs, \$0.99 million in labor income, \$1.88 million in total value added, and \$3.28 million in output.

Table 27: Economic Impacts of Northwest Academy Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	26	\$990,000	\$1,878,000	\$3,281,000

Operational Impacts

Annual operations expenditures at Pierce County Skills Center are modeled to support approximately 3.4 jobs at the skill center and 1.4 local jobs outside of the skill center, for a total of 5 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$229,000 in labor income, \$380,000 in value-added, and \$641,000 in total output. Payroll impacts are calculated separately.

Table 28: Economic Impacts of Pierce County Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	7	\$421,000	\$502,000	\$528,000
Indirect Effect	0	\$5,000	\$8,000	\$15,000
Induced Effect	2	\$80,000	\$154,000	\$268,000
Total Effect	9	\$506,000	\$664,000	\$811,000

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 29 jobs at the skill center and 9 additional local jobs, with labor income totaling \$2.3 million annually. Total value-added is calculated to be approximately \$2.7 million each year with total output of \$3.9 million per year.

Table 29: Economic Impacts of Pierce County Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	19	\$2,282,000	\$2,391,000	\$3,458,000
Induced Effect	13	\$495,000	\$965,000	\$1,675,000
Total Effect	32	\$2,777,000	\$3,356,000	\$5,133,000

Pierce County Skills Center Summary

The following section explores the impacts of the Pierce County Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 30 below shows the total impacts across the entire model. The Pierce County Skills Center creates a total of 87 jobs and \$7.0 million in value-added to the economy of the Tacoma-Pierce WFDA.

Table 30: Total Pierce County Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	44.6	\$2,147,087	\$3,900,565	\$6,285,482
Operations	4.8	\$229,476	\$380,193	\$640,988
Payroll	37.5	\$2,345,155	\$2,753,946	\$3,870,972
Total	87	\$4,721,717	\$7,034,703	\$10,797,441

Wage Differential Model: Inputs

An average of **489 students** completed Pierce County Skills Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 31 below. All 489 completers are assumed to work a job in the Tacoma-Pierce WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by Pierce County Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 31: Pierce County Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Aerospace Composites	31.5	\$53,900	\$25,425
Aerospace Manufacturing	37	\$51,133	\$22,658
Automotive Systems	58.5	\$35,400	\$6,925
Construction Technology	35.5	\$41,260	\$12,785
Cosmetology	15	\$30,100	\$1,625
Criminal Justice	46.5	\$41,875	\$21,400
Culinary Arts	36.5	\$30,800	\$2,325
Firefighting	30.5	\$51,000	\$22,525
Information Technology	34.5	\$63,280	\$34,805
Medical Careers	41	\$35,800	\$7,325
Pre-pharmacy	17.5	\$37,000	\$8,525
Pre-physical Therapy	28	\$36,700	\$8,225
Pre-vet Tech	36.5	\$31,700	\$3,225
Video Game Design	40	\$81,800	\$33,325
Minimum Wage (Full-Time)	--	\$28,475	--
Total	488.5		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 307 annual completers from Pierce County Skills Center training programs support an additional 45 local jobs, \$2.1 million in labor income, \$3.9 million in total value-added, and \$6.3 million in output.

Table 32: Economic Impacts of Pierce County Skills Center Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	44.6	\$2,147,087	\$3,900,565	\$6,285,482

Operational Impacts

Annual operations expenditures at Pierce County Skills Center are modeled to support approximately 3.4 jobs at the skill center and 1.4 local jobs outside of the skill center, for a total of 5 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$229,000 in labor income, \$380,000 in value-added, and \$641,000 in total output. Payroll impacts are calculated separately.

Table 33: Economic Impacts of Pierce County Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	3.4	\$161,636	\$259,745	\$440,871
Indirect Effect	0.6	\$29,646	\$50,535	\$87,757
Induced Effect	0.8	\$38,194	\$69,912	\$112,359
Total Effect	4.8	\$229,476	\$380,193	\$640,988

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 29 jobs at the skill center and 9 additional local jobs, with labor income totaling \$2.3 million annually. Total value-added is calculated to be approximately \$2.7 million each year with total output of \$3.9 million per year.

Table 34: Economic Impacts of Pierce County Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	28.3	\$1,896,433	\$1,929,799	\$2,543,915
Induced Effect	9.2	\$448,721	\$824,146	\$1,327,057
Total Effect	37.5	\$2,345,155	\$2,753,946	\$3,870,972

Puget Sound Skills Center Summary

The following section explores the impacts of the Puget Sound Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 35 below shows the total impacts across the entire model. The Puget Sound Skills Center creates a total of 77 jobs and \$8.9 million in value-added to the economy of the Seattle-King WFDA.

Table 35: Total Puget Sound Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	38.7	\$2,355,856	\$4,227,271	\$6,456,968
Operations	4.3	\$290,546	\$484,387	\$783,647
Payroll	34	\$3,543,267	\$4,151,543	\$5,599,556
Total	76.9	\$6,189,668	\$8,863,202	\$12,840,171

Wage Differential Model: Inputs

An average of **549 students** completed Puget Sound Skills Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 36 below. All 549 completers are assumed to work a job in the Seattle-King WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by Puget Sound Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 36: Puget Sound Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Aviation	42	\$54,650	\$26,175
Aerospace Manufacturing	36.5	\$51,133	\$22,658
Animation & Graphics	12.5	\$44,600	\$16,125
Autobody Technology	20	\$35,400	\$6,925
Automotive Systems	27.5	\$35,400	\$6,925
Biomedical Research	18	\$45,900	\$17,425
College IT	18.5	\$54,600	\$26,125
Construction Technology	17.5	\$41,260	\$12,785
Criminal Justice	36	\$49,875	\$21,400
Culinary Arts	63.5	\$30,800	\$2,325
Dental Assisting	41	\$35,800	\$7,325
DigiPen Art & Animation	18.5	\$63,300	\$34,825
Fashion Design	23.5	\$49,000	\$20,525
Firefighting	34.5	\$51,000	\$22,525
Maritime Vessel Operations	21	\$47,900	\$19,425

Medical Assistant	85.5	\$35,800	\$7,325
Outdoor Leadership	12.5	\$36,775	\$8,300
Translation & Interpretation	20	\$35,400	\$6,925
Minimum Wage (Full-Time)	--	\$28,475	--
Total	548.5		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 549 annual completers from Puget Sound Skills Center training programs support an additional 39 local jobs, \$2.4 million in labor income, \$4.2 million in total value-added, and \$6.5 million in output.

Table 37: Economic Impacts of Puget Sound Skills Center Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	38.7	\$2,355,856	\$4,227,271	\$6,456,968

Operational Impacts

Annual operations expenditures at Puget Sound Skills Center are modeled to support approximately 3 jobs at the skill center and 1.5 local jobs outside of the skill center, for a total of 4.5 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$290,000 in labor income, \$484,000 in value-added, and \$784,000 in total output. Payroll impacts are calculated separately.

Table 38: Economic Impacts of Puget Sound Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	2.8	\$181,797	\$301,377	\$499,126
Indirect Effect	0.8	\$61,770	\$98,765	\$155,686
Induced Effect	0.8	\$46,978	\$84,246	\$128,835
Total Effect	4.3	\$290,546	\$484,387	\$783,647

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 22 jobs at the skill center and 13 additional local jobs, with labor income totaling \$3.5 million annually. Total value-added is calculated to be approximately \$4.2 million each year with total output of \$5.6 million per year.

Table 39: Economic Impacts of Puget Sound Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	21.5	\$2,787,182	\$2,800,192	\$3,520,277
Induced Effect	12.5	\$756,085	\$1,351,351	\$2,079,279
Total Effect	34.8	\$3,543,267	\$4,151,543	\$5,599,556

Seattle Skills Center Summary

The following section explores the impacts of the Seattle Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 40 below shows the total impacts across the entire model. The Seattle Skills Center creates a total of 58 jobs and \$6.4 million in value-added to the economy of the Seattle-King WFDA.

Table 40: Total Seattle Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	39.9	\$2,430,323	\$4,355,241	\$6,658,634
Operations	0.3	\$20,211	\$33,696	\$54,513
Payroll	17.4	\$1,718,892	\$2,013,976	\$2,716,429
Total	57.6	\$4,169,427	\$6,402,913	\$9,429,576

Wage Differential Model: Inputs

An average of **596 students** completed Seattle Skills Center’s vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 41 below. All 596 completers are assumed to work a job in the Seattle-King WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by Seattle Skills Center. SOC codes and average entry-level salaries were obtained from Chmura’s economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center’s vocational programs.

Table 41: Seattle Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Administrative Medical Office Assistant	1.5	\$33,950	\$5,475
Aerospace Manufacturing	40.5	\$51,133	\$22,658
Animation & Graphic Design	51	\$44,600	\$16,125
Automotive Systems	26	\$35,400	\$6,925
Biomedical Research	17	\$45,900	\$17,425
Broadcasting Today	15.5	\$32,900	\$4,425
Construction Technology	26.5	\$41,260	\$12,785
Culinary Arts	83.5	\$30,800	\$2,325
Digital Arts & Filmmaking	34	\$37,125	\$8,650
Fire Fighting	19.5	\$51,000	\$22,525
Information Technology	31	\$63,280	\$34,805
Maritime Vessel Operations	21	\$47,900	\$19,425
Medical Assistant	9	\$35,800	\$7,325

Medical Careers	32	\$35,800	\$7,325
Pre-engineering & Design	39	\$47,100	\$18,625
Pre-Nursing	27	\$30,500	\$2,025
Teaching Academy Careers in Education	11	\$33,267	\$4,791
Translation & Interpretation	10	\$35,400	\$6,925
Video Game Design	27	\$81,800	\$33,325
Recording Arts	10	\$32,133	\$3,658
Family Health	45	\$35,800	\$7,325
Horticulture	19	\$29,020	\$545
Minimum Wage (Full-Time)	--	\$28,475	--
Total	596		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 596 annual completers from Seattle Skills Center training programs support an additional 40 local jobs, \$2.4 million in labor income, \$4.3 million in total value-added, and \$6.7 million in output.

Table 42: Economic Impacts of Seattle Skills Center Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	39.9	\$2,430,323	\$4,355,241	\$6,658,634

Operational Impacts

Note: full operations data was not provided by the Seattle Skills Center.

Annual operations expenditures at Seattle Skills Center are modeled to support approximately 0.2 jobs at the skill center and 0.1 local jobs outside of the skill center, for a total of 0.3 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$20,000 in labor income, \$34,000 in value-added, and \$54,000 in total output. Payroll impacts are calculated separately.

Table 43: Economic Impacts of Seattle Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	0.2	\$12,646	\$20,965	\$34,721
Indirect Effect	0.1	\$4,297	\$6,870	\$10,830
Induced Effect	0.1	\$3,268	\$5,860	\$8,962
Total Effect	0.3	\$20,211	\$33,696	\$54,513

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 11 jobs at the skill center and 6 additional local jobs, with labor income totaling \$1.7 million annually. Total value-added is calculated to be approximately \$2.0 million each year with total output of \$2.7 million per year.

Table 44: Economic Impacts of Seattle Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	11.4	\$1,352,104	\$1,358,415	\$1,707,739
Induced Effect	6.0	\$366,788	\$655,561	\$1,008,690
Total Effect	17.4	\$1,718,892	\$2,013,976	\$2,716,429

Sno-Isle TECH Skills Center Summary

The following section explores the impacts of the Sno-Isle TECH Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 45 below shows the total impacts across the entire model. The Sno-Isle TECH Skills Center creates a total of 115 jobs and \$12.7 million in value-added to the economy of the Snohomish WFDA.

Table 45: Total Sno-Isle TECH Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	57.2	\$2,412,078	\$4,656,114	\$7,403,742
Operations	5.1	\$219,060	\$341,837	\$587,327
Payroll	53.0	\$6,610,830	\$7,702,906	\$11,041,100
Total	115.3	\$9,241,968	\$12,700,856	\$19,032,169

Wage Differential Model: Inputs

An average of **784 students** completed Sno-Isle TECH Skills Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 46 below. All 784 completers are assumed to work a job in the Snohomish WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by Sno-Isle TECH Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 46: Sno-Isle TECH Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Aerospace Manufacturing	50	\$51,133	\$22,658
Autobody & Collision Repair	40	\$35,400	\$6,925
Auto Technology	40	\$35,400	\$6,925
Computers, Servers & Networking	40	\$63,280	\$34,805
Construction Technology	22	\$41,260	\$12,785
Cosmetology	30	\$30,100	\$1,625
Criminal Justice	40	\$49,875	\$21,400
Culinary Arts	38	\$30,800	\$2,325
Dental Assisting	42	\$35,800	\$7,325
Diesel Power Technology	49	\$35,400	\$6,925
Electronics Engineer	47	\$50,700	\$22,225
Fashion Designer	32	\$49,000	\$20,525
Fire Fighting	41	\$51,000	\$22,525
Medical Assistant	47	\$35,800	\$7,325
Nursing Assistant	33	\$35,800	\$7,325

Machining	19	\$32,900	\$4,425
Vet assistant	44	\$31,700	\$3,225
Video Game Design	81	\$81,800	\$53,325
Welding & Metal Fabrication	49	\$36,367	\$7,891
Minimum Wage (Full-Time)	--	\$28,475	
Total	784		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 784 annual completers from Sno-Isle TECH Skills Center training programs support an additional 57.2 local jobs, \$2.4 million in labor income, \$4.7 million in total value-added, and \$7.4 million in output.

Table 47: Economic Impacts of Sno-Isle TECH Skills Center Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	57.2	\$2,412,078.3	\$4,656,113.6	\$7,403,742.0

Operational Impacts

Annual operations expenditures at Sno-Isle TECH Skills Center are modeled to support approximately 4 jobs at the skill center and 1 local jobs outside of the skill center, for a total of 5 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$219,000 in labor income, \$342,000 in value-added, and \$587,000 in total output. Payroll impacts are calculated separately.

Table 48: Economic Impacts of Sno-Isle TECH Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	3.9	\$164,966	\$244,893	\$426,234
Indirect Effect	0.6	\$27,244	\$43,741	\$76,666
Induced Effect	0.6	\$26,850	\$53,202	\$84,427
Total Effect	5.1	\$219,060	\$341,837	\$587,327

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 32 jobs at the skill center and 21 additional local jobs, with labor income totaling \$6.6 million annually. Total value-added is calculated to be approximately \$7.7 million each year with total output of \$11 million per year.

Table 49: Economic Impacts of Sno-Isle TECH Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	31.7	\$5,714,538	\$5,918,127	\$8,201,675
Induced Effect	21.3	\$896,291	\$1,784,779	\$2,839,425
Total Effect	53	\$6,610,830	\$7,702,906	\$11,041,100

Spokane Valley Tech Summary

The following section explores the impacts of Spokane Valley Tech through three categories: wage differentials of completers, operational spending, and payroll. Table 50 below shows the total impacts across the entire model. Spokane Valley Tech creates a total of 13 jobs and \$12.7 million in value-added to the economy of the Spokane WFDA.

Table 50: Total Spokane Valley Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	14.1	\$613,652	\$1,114,765	\$1,927,125
Operations	1.1	\$47,730	\$78,754	\$148,666
Payroll	11.5	\$781,739	\$960,407	\$1,462,032
Total	26.7	\$2,056,744	\$2,153,927	\$3,537,822

Wage Differential Model: Inputs

An average of **85.5 students** completed Spokane Valley Tech Skills Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 51 below. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by Spokane Valley Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ.

Table 51: Spokane Valley Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Aerospace Manufacturing	14.5	\$51,133	\$22,658
Biomedical Research	15.5	\$45,900	\$17,425
DigiPen Art & Animation	10	\$63,300	\$34,825
Electronics Engineering	8.5	\$50,700	\$22,225
Firefighting	37	\$51,000	\$22,525
Minimum Wage (Full-Time)	--	\$28,475	--
Total	85.5		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 85.5 annual completers from Spokane Valley Skills Center training programs support an additional 14.1 local jobs, \$613,652 in labor income, \$1.1 million in total value-added, and \$1.9 million in output.

Table 52

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	14.1	\$613,652	\$1,114,765	\$1,927,125

Operational Impacts

Annual operations expenditures at Spokane Valley Tech are modeled to support approximately 0.7 jobs at the skill center and 0.5 local jobs outside of the skill center, for a total of 1 job. Looking at total impacts, we calculate that the annual impact of operations is \$48,000 in labor income, \$79,000 in value-added, and \$149,000 in total output. Payroll impacts are calculated separately.

Table 53: Economic Impacts of Spokane Valley Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	0.7	\$27,706	\$44,127	\$86,121
Indirect Effect	0.2	\$9,599	\$15,721	\$29,924
Induced Effect	0.2	\$10,425	\$18,906	\$32,621
Total Effect	1.1	\$47,730	\$78,754	\$148,666

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 7 jobs at the skill center and 4 additional local jobs, with labor income totaling \$781,000 annually. Total value-added is calculated to be approximately \$960,000 each year with total output of \$1.5 million per year.

Table 54: Economic Impacts of Spokane Valley Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	7.1	\$591,135	\$613,587	\$863,070
Induced Effect	4.4	\$190,603	\$346,819	\$598,961
Total Effect	11.5	\$781,739	\$960,407	\$1,462,032

Tri-Tech Summary

The following section explores the impacts of Tri-Tech through three categories: wage differentials of completers, operational spending, and payroll. Table 55 below shows the total impacts across the entire model. Tri-Tech creates a total of 114 jobs and \$10.1 million in value-added to the economy of the Benton-Franklin WFDA.

Table 55: Total Tri-Tech Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	53.8	\$2,317,738	\$4,226,432	\$7,148,653
Operations	4.6	\$248,094	\$397,196	\$717,568
Payroll	55.5	\$4,457,533	\$5,467,570	\$8,915,132
Total	113.8	\$7,023,365	\$10,091,197	\$16,781,354

Wage Differential Model: Inputs

An average of **822 students** completed Tri-Tech's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 56 below. All 822 completers are assumed to work a job in the Benton-Franklin WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by Tri-Tech. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 56: Tri-Tech Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Autobody Technology	40	\$35,400	\$6,925
Automotive Systems	48	\$35,400	\$6,925
Broadcasting Today	26.5	\$32,900	\$4,425
Construction Technology	44	\$41,260	\$12,785
Cosmetology	41	\$30,100	\$1,625
Criminal Justice	35.5	\$49,875	\$21,400
Culinary Arts	30.5	\$30,800	\$2,325
Cyber Security	40.5	\$54,600	\$26,125
Dental Assisting	57	\$35,800	\$7,325
Diesel Technology	45.5	\$35,400	\$6,925
Digital Arts & Filmmaking	27.5	\$37,125	\$8,650
Drone Manufacturing	26.5	\$54,650	\$26,175
Early Childhood Education	28.5	\$39,067	\$10,591
Fire Fighter	44	\$51,000	\$22,525
Pre-Nursing	82	\$30,500	\$2,025
Pre-Physical Therapy	34	\$36,700	\$8,225
Pre-Vet Tech	42.5	\$31,700	\$3,225

Video Game Design	28.5	\$81,800	\$53,325
Welding	49.5	\$36,367	\$7,891
Teen Parent Education	9	\$39,067	\$10,591
Health Information Technology	41	\$36,200	\$7,725
Minimum Wage (Full-Time)	--	\$28,475	--
Total	821.5		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 784 annual completers from Tri-Tech training programs support an additional 53.8 local jobs, \$2.3 million in labor income, \$4.2 million in total value-added, and \$7.1 million in output.

Table 57: Economic Impacts of Tri-Tech Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	53.8	\$2,317,738.0	\$4,226,431.6	\$7,148,653.3

Operational Impacts

Annual operations expenditures at Tri-Tech are modeled to support approximately 3 jobs at the skill center and 2 local jobs outside of the skill center, for a total of 5 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$248,000 in labor income, \$397,000 in value-added, and \$718,000 in total output. Payroll impacts are calculated separately.

Table 58: Economic Impacts of Tri-Tech Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	3	\$166,549	\$256,901	\$470,449
Indirect Effect	0.7	\$41,152	\$65,234	\$120,979
Induced Effect	0.9	\$40,393	\$75,062	\$126,140
Total Effect	4.6	\$248,094	\$397,196	\$717,568

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 38 jobs at the skill center and 18 additional local jobs, with labor income totaling \$4.5 million annually. Total value-added is calculated to be approximately \$5.5 million each year with total output of \$8.9 million per year.

Table 59: Economic Impacts of Tri-Tech Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	37.9	\$3,698,654	\$4,045,661	\$6,522,900
Induced Effect	17.6	\$758,879	\$1,421,909	\$2,392,232
Total Effect	55.5	\$4,457,533	\$5,467,570	\$8,915,132

Twin Harbors Branch Skills Center Summary

The following section explores the impacts of Twin Harbors Branch Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 60 below shows the total impacts across the entire model. The Twin Harbors Branch Skills Center creates a total of 10 jobs and \$636,000 in value-added to the economy of the Pacific Mountain WFDA.

Table 60: Total Twin Harbors Branch Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	4.0	\$160,424	\$312,449	\$532,178
Operations	0.2	\$9,283	\$15,990	\$30,895
Payroll	6.1	\$466,211	\$558,669	\$844,858
Total	10.3	\$635,918	\$887,107	\$1,407,931

Wage Differential Model: Inputs

An average of **73 students** completed Twin Harbors Branch Skills Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 61 below. All 73 completers are assumed to work a job in the Pacific Mountain WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by the Twin Harbors Branch Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 61: Twin Harbors Branch Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Automotive Systems	9.5	\$35,400	\$6,925
Cosmetology	15.5	\$30,100	\$1,625
Criminal Justice	14.5	\$49,875	\$21,400
Electronics Engineering Technology	11	\$50,700	\$22,225
Medical Assistant	5	\$35,800	\$7,325
Pre-Nursing	17.5	\$30,500	\$2,025
Minimum Wage (Full-Time)	--	\$28,475	--
Total	73		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 73 annual completers from Twin Harbors Branch Skills Center training programs support an additional 4 local jobs, \$160,000 in labor income, \$312,000 in total value-added, and \$532,000 in output.

Table 62: Economic Impacts of Twin Harbors Branch Skills Center Training

Impact Type	Employment	Labor Income	Total Value-added	Output
Induced Effect	4	\$160,424	\$312,449	\$532,178

Operational Impacts

Annual operations expenditures at the Twin Harbors Branch Skills Center are modeled to support approximately 0 jobs at the skill center and 0 local jobs outside of the skill center, for a total of 0 jobs (based on data provided by Twin Harbors). Looking at total impacts, we calculate that the annual impact of operations is \$9,000 in labor income, \$16,000 in value-added, and \$31,000 in total output. Payroll impacts are calculated separately.

Table 63: Economic Impacts of Twin Harbors Branch Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	0.1	\$6,269	\$10,422	\$20,855
Indirect Effect	0.0	\$1,633	\$2,841	\$5,414
Induced Effect	0.0	\$1,381	\$2,726	\$4,625
Total Effect	0.2	\$9,283	\$15,990	\$30,895

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 4 jobs at the skill center and 2 additional local jobs, with labor income totaling \$466,000 annually. Total value-added is calculated to be approximately \$559,000 each year with total output of \$845,000 per year.

Table 64: Economic Impacts of Twin Harbors Branch Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	4.3	\$392,618	\$411,961	\$595,473
Induced Effect	1.8	\$73,592	\$146,707	\$249,385
Total Effect	6.1	\$466,211	\$558,669	\$844,858

Southeast Area Technical (SEATech) Skills Center Summary

The following section explores the impacts of SEATech Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 65 below shows the total impacts across the entire model. The SEATech Skills Center creates a total of 20 jobs and \$1.7 million in value-added to the economy of the Eastern WFDA.

Table 65: Total Southeast Area Technical (SEATech) Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	9.1	\$303,730	\$628,522	\$1,138,048
Operations	1.5	\$48,697	\$94,343	\$203,175
Payroll	9.1	\$771,339	\$1,010,866	\$1,993,289
Total	19.7	\$1,123,766	\$1,733,731	\$3,334,512

Wage Differential Model: Inputs

An average of **178 students** completed SEATech Skills Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 66 below. All 178 completers are assumed to work a job in the Eastern WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by the SEATech Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 66: Southeast Area Technical (SEATech) Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Advanced Manufacturing & Welding Technology	43	\$36,367	\$7,891
Audio & Video Production	29	\$37,125	\$8,650
Construction Technology	34	\$41,260	\$12,785
Criminal Justice	35.5	\$49,875	\$21,400
Pre-Nursing	36	\$30,500	\$2,025
Minimum Wage (Full-Time)	--	\$28,475	--
Total	177.5		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 178 annual completers from SEATech Skills Center training programs support an additional 9 local jobs, \$304,000 in labor income, \$629,000 in total value-added, and \$1.1 million in output.

Table 67: Economic Impacts of Southeast Area Technical (SEATech) Skills Center Training

Impact Type	Employment	Labor Income	Total Value-added	Output
Induced Effect	9.1	\$303,730	\$628,522	\$1,138,048

Operational Impacts

Annual operations expenditures at the SEATech Skills Center are modeled to support approximately 1 job at the skill center and 0.5 local jobs outside of the skill center, for a total of 1.5 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$49,000 in labor income, \$94,000 in value-added, and \$203,000 in total output. Payroll impacts are calculated separately.

Table 68: Economic Impacts of Southeast Area Technical (SEATech) Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	1.1	\$35,940	\$66,552	\$148,389
Indirect Effect	0.2	\$7,372	\$16,359	\$34,291
Induced Effect	0.2	\$5,385	\$11,432	\$20,495
Total Effect	1.5	\$48,697	\$94,343	\$203,175

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 7 jobs at the skill center and 3 additional local jobs, with labor income totaling \$771,000 annually. Total value-added is calculated to be approximately \$1.0 million each year with total output of \$2.0 million per year.

Table 69: Economic Impacts of Southeast Area Technical (SEATech) Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	6.6	\$686,699	\$827,592	\$1,665,360
Induced Effect	2.5	\$84,640	\$183,274	\$327,929
Total Effect	9.1	\$771,339	\$1,010,866	\$1,993,289

Washington Network for Innovative Careers (WANIC) Skills Center Summary

The following section explores the impacts of WANIC Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 70 below shows the total impacts across the entire model. The WANIC Skills Center creates a total of 81 jobs and \$8.5 million in value-added to the economy of the Seattle-King WFDA.

Table 70: Total WANIC Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	47.6	\$2,909,853	\$5,202,766	\$7,967,869
Operations	5.9	\$396,753	\$661,451	\$1,070,103
Payroll	27.1	\$2,213,828	\$2,593,878	\$3,498,594
Total	80.6	\$5,520,434	\$8,458,096	\$12,536,566

Wage Differential Model: Inputs

An average of **479 students** completed WANIC Skills Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 71 below. All 479 completers are assumed to work a job in the Seattle-King WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by the WANIC Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 71: WANIC Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Automotive Systems	34	\$35,400	\$6,925
Computer Science DigiPen	20.5	\$63,280	\$34,805
Culinary Arts	16	\$30,800	\$2,325
Dental Assisting	9	\$35,800	\$7,325
DigiPen Art & Animation	61.5	\$63,300	\$34,825
DigiPen Music & Sound Design	13.5	\$32,133	\$3,658
Emergency Medical Tech	5	\$30,300	\$1,825
Firefighter	33.5	\$51,000	\$22,525
Medical Assistant	16	\$35,800	\$7,325
Medical Careers	30	\$35,800	\$7,325
Sports Medicine	54.5	\$30,500	\$2,025
Pre-Physical Therapy	47.5	\$36,700	\$8,225
Video Game Design	44	\$81,800	\$53,325
Cisco Systems	91	\$54,600	\$26,125
Minimum Wage (Full-Time)	--	\$28,475	--
Total	479		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 479 annual completers from WANIC Skills Center training programs support an additional 48 local jobs, \$2.9 million in labor income, \$5.2 million in total value-added, and \$8.0 million in output.

Table 72: Economic Impacts of WANIC Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	47.6	\$2,909,853	\$5,202,766	\$7,967,869

Operational Impacts

Annual operations expenditures at the WANIC Skills Center are modeled to support approximately 4 jobs at the skill center and 2 local jobs outside of the skill center, for a total of 6 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$397,000 in labor income, \$661,000 in value-added, and \$1.1 million in total output. Payroll impacts are calculated separately.

Table 73: Economic Impacts of WANIC Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	3.8	\$248,252	\$411,543	\$681,578
Indirect Effect	1.1	\$84,350	\$134,868	\$212,596
Induced Effect	1.1	\$64,151	\$115,041	\$175,930
Total Effect	5.9	\$396,753	\$661,451	\$1,070,103

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 20 jobs at the skill center and 8 additional local jobs, with labor income totaling \$2.2 million annually. Total value-added is calculated to be approximately \$2.6 million each year with total output of \$3.5 million per year.

Table 74: Economic Impacts of WANIC Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	19.3	\$1,741,427	\$1,749,556	\$2,199,464
Induced Effect	7.8	\$472,400	\$844,322	\$1,299,130
Total Effect	27.1	\$2,213,828	\$2,593,878	\$3,498,594

Wenatchee Valley Tech Center Summary

The following section explores the impacts of Wenatchee Valley Tech Center through three categories: wage differentials of completers, operational spending, and payroll. Table 75 below shows the total impacts across the entire model. The Wenatchee Valley Tech Center creates a total of 48 jobs and \$4.3 million in value-added to the economy of the North Central WFDA.

Table 75: Total Wenatchee Valley Tech Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	36.9	\$1,026,926	\$2,023,455	\$3,557,141
Operations	1.4	\$63,607	\$107,533	\$215,039
Payroll	19.8	\$1,772,965	\$2,144,707	\$3,516,145
Total	48.1	\$2,863,499	\$4,275,695	\$7,288,324

Wage Differential Model: Inputs

An average of **328 students** completed Wenatchee Valley Tech Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 76 below. All 328 completers are assumed to work a job in the North Central WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by the Wenatchee Valley Tech Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 76: Wenatchee Valley Tech Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Autobody Technology	49	\$35,400	\$6,925
Automation Systems	56	\$63,280	\$34,805
Construction Technology	41.5	\$41,260	\$12,785
Cosmetology	34	\$30,100	\$1,625
Criminal Justice	42	\$49,875	\$21,400
Culinary Arts	46.5	\$30,800	\$2,325
Digital Arts and Film	16.5	\$37,125	\$8,650
Firefighter	23	\$31,000	\$22,525
Video Game Design	12	\$81,800	\$53,325
Computer Technology	7	\$63,280	\$34,805
Minimum Wage (Full-Time)	--	\$28,475	--
Total	327.5		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those

working minimum wage jobs. This means that the extra earnings of the 328 annual completers from Wenatchee Valley Tech Center training programs support an additional 27 local jobs, \$1.0 million in labor income, \$2.0 million in total value-added, and \$3.6 million in output.

Table 77: Economic Impacts of Wenatchee Valley Tech Center Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	26.9	\$1,026,926	\$2,023,455	\$3,557,141

Operational Impacts

Annual operations expenditures at the Wenatchee Valley Tech Center are modeled to support approximately 1 job at the skill center and 0.5 local jobs outside of the skill center, for a total of 1.5 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$64,000 in labor income, \$108,000 in value-added, and \$215,000 in total output. Payroll impacts are calculated separately.

Table 78: Economic Impacts of Wenatchee Valley Tech Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	1.0	\$44,716	\$73,175	\$148,225
Indirect Effect	0.2	\$10,498	\$17,630	\$37,577
Induced Effect	0.2	\$8,394	\$16,728	\$29,237
Total Effect	1.4	\$63,607	\$107,533	\$215,039

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 14 jobs at the skill center and 6 additional local jobs, with labor income totaling \$1.8 million annually. Total value-added is calculated to be approximately \$2.1 million each year with total output of \$3.5 million per year.

Table 79: Economic Impacts of Wenatchee Valley Tech Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	14.2	\$1,560,568	\$1,714,405	\$2,765,732
Induced Effect	5.6	\$212,398	\$430,302	\$750,413
Total Effect	19.8	\$1,772,965	\$2,144,707	\$3,516,145

West Sound Technical Skills Center Summary

The following section explores the impacts of West Sound Technical Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 80 below shows the total impacts across the entire model. The West Sound Technical Skills Center creates a total of 59 jobs and \$5.0 million in value-added to the economy of the Olympic WFDA.

Table 80: Total West Sound Technical Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	26.7	\$957,733	\$1,944,718	\$3,420,645
Operations	2.3	\$100,234	\$163,135	\$320,453
Payroll	29.9	\$2,439,156	\$2,884,199	\$4,320,372
Total	58.9	\$3,497,123	\$4,992,053	\$8,061,470

Wage Differential Model: Inputs

An average of **324 students** completed West Sound Technical Skills Center’s vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 81 below. All 324 completers are assumed to work a job in the Olympic WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by the West Sound Technical Skills Center. SOC codes and average entry-level salaries were obtained from Chmura’s economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center’s vocational programs.

Table 81: West Sound Technical Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Autobody Technology	29	\$35,400	\$6,925
Automotive Systems	27	\$35,400	\$6,925
Construction Technology	23	\$41,260	\$12,785
Cosmetology	25	\$30,100	\$1,625
Criminal Justice	29	\$49,875	\$21,400
Culinary Arts	23	\$30,800	\$2,325
Esthetics	16	\$31,900	\$3,425
Fire Fighting	11	\$51,000	\$22,525
Medical Careers	38	\$35,800	\$7,325
Video Game Design	45	\$81,800	\$53,325
Welding	48.5	\$36,367	\$7,891
Design Tech	9	\$81,800	\$53,325
Minimum Wage (Full-Time)	--	\$28,475	--
Total	323.5		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 324 annual completers from West Sound Technical Skills Center training programs support an additional 27 local jobs, \$1.0 million in labor income, \$2.0 million in total value-added, and \$3.4 million in output.

Table 82: Economic Impacts of West Sound Technical Skills Center Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	26.7	\$957,733	\$1,944,718	\$3,420,645

Operational Impacts

Annual operations expenditures at the West Sound Technical Skills Center are modeled to support approximately 2 jobs at the skill center and 0.5 local jobs outside of the skill center, for a total of 2.5 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$100,000 in labor income, \$163,000 in value-added, and \$320,000 in total output. Payroll impacts are calculated separately.

Table 83: Economic Impacts of West Sound Technical Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	1.6	\$70,798	\$110,586	\$221,125
Indirect Effect	0.4	\$17,237	\$27,242	\$55,131
Induced Effect	0.3	\$12,199	\$25,307	\$44,197
Total Effect	2.3	\$100,234	\$163,135	\$320,453

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 21 jobs at the skill center and 9 additional local jobs, with labor income totaling \$2.4 million annually. Total value-added is calculated to be approximately \$2.9 million each year with total output of \$4.3 million per year.

Table 84: Economic Impacts of West Sound Technical Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	21.0	\$2,119,193	\$2,213,289	\$3,145,432
Induced Effect	8.9	\$319,963	\$670,910	\$1,174,940
Total Effect	29.9	\$2,439,156	\$2,884,199	\$4,320,372

Yakima Valley Technical Skills Center Summary

The following section explores the impacts of Yakima Valley Technical Skills Center through three categories: wage differentials of completers, operational spending, and payroll. Table 85 below shows the total impacts across the entire model. The Yakima Valley Technical Skills Center creates a total of 93 jobs and \$8.2 million in value-added to the economy of the South Central WFDA.

Table 85: Total Yakima Valley Technical Skills Center Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	42.5	\$1,681,283	\$3,099,484	\$5,394,323
Operations	5.2	\$213,366	\$367,032	\$718,244
Payroll	45.1	\$3,986,095	\$4,723,518	\$7,277,710
Total	92.8	\$5,880,745	\$8,190,033	\$13,390,277

Wage Differential Model: Inputs

An average of **858 students** completed Yakima Valley Technical Skills Center's vocational programs annually in the 2018 and 2019 school years; the number of completers from individual programs and wage differentials between average entry-level salaries and full-time work at minimum wage are detailed in Table 86 below. All 858 completers are assumed to work a job in the South Central WFDA in the year following graduation. Entry-level wages were determined by matching SOC codes for occupations to the programs offered by the Yakima Valley Technical Skills Center. SOC codes and average entry-level salaries were obtained from Chmura's economic data analytics platform, JobsEQ. This model assumes a similar level of graduation every year from the skill center's vocational programs.

Table 86: Yakima Valley Technical Skills Center Trainees, Estimated Salaries, and Difference from Minimum Wage

Vocational Program	Annual Average Completers	Average Entry-Level Salary	\$ Above Min Wage
Autobody Technology	44.5	\$35,400	\$6,925
Automotive Systems	77	\$35,400	\$6,925
Business Principles	46	\$46,100	\$17,625
Construction Technology	43.5	\$41,260	\$12,785
Cosmetology	128.5	\$30,100	\$1,625
Criminal Justice	45	\$49,875	\$21,400
Culinary Arts	48	\$30,800	\$2,325
Dental Assisting	65.5	\$35,800	\$7,325
Drone Manufacturing	28.5	\$54,650	\$26,175
Fire Fighting	16.5	\$51,000	\$22,525
Pre-Nursing	116.5	\$30,500	\$2,025
Pre-Physical Therapy	46.5	\$36,700	\$8,225
Welding	28.5	\$36,367	\$7,891
Entertainment Media Production	44	\$37,125	\$8,650

Electrical	37.5	\$40,400	\$11,925
Computer Technology	42	\$63,280	\$34,805
Minimum Wage (Full-Time)	--	\$28,475	--
Total	858		

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the 858 annual completers from Yakima Valley Technical Skills Center training programs support an additional 43 local jobs, \$1.7 million in labor income, \$3.1 million in total value-added, and \$5.4 million in output.

Table 87: Economic Impacts of Yakima Valley Technical Skills Center Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	42.5	\$1,681,283	\$3,099,484	\$5,394,323

Operational Impacts

Annual operations expenditures at the Yakima Valley Technical Skills Center are modeled to support nearly 4 jobs at the skill center and roughly 1.5 local jobs outside of the skill center, for an estimated total of just over 5 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$213,000 in labor income, \$367,000 in value-added, and \$718,000 in total output. Payroll impacts are calculated separately.

Table 88: Economic Impacts of Yakima Valley Technical Skills Center Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	3.6	\$149,155	\$249,264	\$496,725
Indirect Effect	0.8	\$33,679	\$60,586	\$122,520
Induced Effect	0.8	\$30,532	\$57,181	\$98,999
Total Effect	5.2	\$213,366	\$367,032	\$718,244

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 30 jobs at the skill center and 15 additional local jobs, with labor income totaling \$4.0 million annually. Total value-added is calculated to be approximately \$4.7 million each year with total output of \$7.3 million per year.

Table 89: Economic Impacts of Yakima Valley Technical Skills Center Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	30.0	\$3,387,839	\$3,584,548	\$5,307,605
Induced Effect	15.1	\$598,257	\$1,138,970	\$1,970,105
Total Effect	45.1	\$3,986,095	\$4,723,518	\$7,277,710

Washington State – All Skill Centers Summary

The following section explores the impacts of all skill centers in this report. As with the previous analyses of individual skill centers, these impacts are sorted into three categories: wage differentials of completers, operational spending, and payroll. Impacts from the Open Door program are included in the Wage Differential component. Table 83 below shows the total impacts across the entire model. Washington State skill centers in this analysis creates a total of 1229.5 jobs and \$111.8 million in value-added to the state economy.

Table 90: Total All Skills Center Summary Economic Impacts

Total Effect	Employment	Labor Income	Value-Added	Output
Wage Differential (Induced Only)	600	\$26,813,195	\$50,046,770	\$82,300,029
Operations	70.4	\$3,454,656	\$5,574,747	\$9,683,095
Payroll	559.1	\$46,999,758	\$56,217,007	\$84,727,820
Total	1229.5	\$77,267,609	\$111,838,524	\$176,710,944

Wage Differential Impacts

Due to uncertainty about the exact job that each graduate will work, we are only able to estimate induced effects based on the extra dollars earned by graduates compared to those working minimum wage jobs. This means that the extra earnings of the completers from all skill center training programs support an additional 600 Washington State jobs, \$26.8 million in labor income, \$50 million in total value-added, and \$82.3 million in output.

Table 91: Economic Impacts of All Skills Center Summary Training

Impact Type	Employment	Labor Income	Total Value-Added	Output
Induced Effect	600	\$26,813,195	\$50,046,770	\$82,300,029

Operational Impacts

Annual operations expenditures at all skill centers are modeled to support approximately 49 jobs at the center and 58 local jobs outside of the skill center, for an estimated total of just over 72 jobs. Looking at total impacts, we calculate that the annual impact of operations is \$3.4 million in labor income, \$5.6 million in value-added, and \$9.7 million in total output. Payroll impacts are calculated separately.

Table 92: Economic Impacts of All Skills Center Summary Operational Spending

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	49	\$2,412,507	\$3,714,404	\$6,469,593
Indirect Effect	9.6	\$508,807	\$849,735	\$1,536,422
Induced Effect	14.1	\$533,342	\$1,010,606	\$1,677,315
Total Effect	72.7	\$3,454,656	\$5,574,745	\$9,683,330

Payroll Impacts

In this model, it is important to note that indirect effects are omitted because they are captured under *Operational Impacts*. Including them here would be double-counting. Payroll activities support 377.9 jobs at all skill centers and 181.2 additional Washington State jobs, with labor income totaling \$47 million annually. Total value-added is calculated to be approximately \$55.8 million each year with total output of \$84.7 million per year.

Table 93: Economic Impacts of All Skills Center Summary r Payroll

Impact Type	Employment	Labor Income	Total Value-Added	Output
Direct Effect	377.9	\$39,002,056	\$40,992,274	\$59,480,213
Induced Effect	181.2	\$7,997,699	\$15,224,731	\$25,247,604
Total Effect	559.1	\$46,999,755	\$55,782,102	\$84,727,817