

# Skills Centers Economic Impacts

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## 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.

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The Center for Economic and Business Research is directed by Hart Hodges, Ph.D. and James McCafferty.

## 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         |
| <b>Total</b>                     | <b>1229</b> | <b>\$77,267,609</b> | <b>\$111,838,523</b> | <b>\$176,710,943</b> |

## 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.

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 1 Workforce Development Areas in Washington State



Figure 2: All Skill Centers and Associated WFDA 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 date, 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        |
| <b>Total</b>                     | <b>141.6</b> | <b>\$8,451,143</b> | <b>\$12,279,067</b> | <b>\$19,468,697</b> |

### 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 |
|-------------------------------------|---------------------------|----------------------------|-------------------|
| <b>Automotive Systems</b>           | 86                        | \$35,400                   | \$6,925           |
| <b>Aviation</b>                     | 91.5                      | \$54,650                   | \$26,175          |
| <b>Business Principles</b>          | 21.5                      | 46,100                     | \$17,625          |
| <b>Construction Technology</b>      | 59                        | \$41,260                   | \$12,785          |
| <b>Cosmetology</b>                  | 68.5                      | \$30,100                   | \$1,625           |
| <b>Criminal Justice</b>             | 84                        | \$49,875                   | \$21,400          |
| <b>Culinary Arts</b>                | 63.5                      | \$30,800                   | \$2,325           |
| <b>Dental Assisting</b>             | 86.5                      | \$35,800                   | \$7,325           |
| <b>Diesel Technology</b>            | 64.5                      | \$35,400                   | \$6,925           |
| <b>Fashion Design</b>               | 28.5                      | \$49,000                   | \$20,525          |
| <b>Fire Fighting</b>                | 84.5                      | \$51,000                   | \$22,525          |
| <b>Hospitality &amp; Tourism</b>    | 22                        | \$29,000                   | \$525             |
| <b>Information Technology</b>       | 48                        | \$63,280                   | \$34,805          |
| <b>Pre-engineering &amp; design</b> | 40                        | \$47,100                   | \$18,625          |
| <b>Pre-nursing</b>                  | 84                        | \$30,500                   | \$2,025           |
| <b>Minimum Wage (Full-Time)</b>     | --                        | \$28,475                   | --                |
| <b>Total</b>                        | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>   | 5.4        | \$218,956        | \$335,897         | \$617,429        |
| <b>Indirect Effect</b> | 0.9        | \$38,030         | \$66,464          | \$119,805        |
| <b>Induced Effect</b>  | 1.0        | \$42,034         | \$83,235          | \$136,270        |
| <b>Total Effect</b>    | <b>7.2</b> | <b>\$299,021</b> | <b>\$485,597</b>  | <b>\$873,505</b> |

### *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              |
|-----------------------|-------------|--------------------|--------------------|---------------------|
| <b>Direct Effect</b>  | 50.6        | \$4,699,485        | \$4,983,578        | \$7,436,103         |
| <b>Induced Effect</b> | 20.7        | \$856,857          | \$1,702,985        | \$2,794,417         |
| <b>Total Effect</b>   | <b>71.3</b> | <b>\$5,556,342</b> | <b>\$6,686,563</b> | <b>\$10,230,520</b> |

## 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        |
| <b>Total</b>                     | <b>50.5</b> | <b>\$3,222,530</b> | <b>\$4,692,361</b> | <b>\$7,970,952</b> |

### 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 |
|-------------------------------------|---------------------------|----------------------------|-------------------|
| <b>Aerospace Composites</b>         | 8                         | 53,900                     | \$25,425          |
| <b>AP Computer Science</b>          | 27                        | 81,800                     | \$53,325          |
| <b>Automotive Systems</b>           | 34                        | 35,400                     | \$6,925           |
| <b>Aviation</b>                     | 8                         | 54,650                     | \$26,175          |
| <b>Construction Technology</b>      | 24                        | 41,260                     | \$12,785          |
| <b>Cosmetology</b>                  | 61                        | 30,100                     | \$1,625           |
| <b>Criminal Justice</b>             | 25                        | 49,875                     | \$21,400          |
| <b>Audio &amp; Video Production</b> | 13                        | 37,125                     | \$8,650           |
| <b>Manufacturing</b>                | 33                        | 33,500                     | \$5,025           |
| <b>Pre-engineering and Design</b>   | 16                        | 47,100                     | \$18,625          |
| <b>Pre-nursing</b>                  | 31                        | 30,500                     | \$2,025           |
| <b>Video Game Design</b>            | 27                        | 81,800                     | \$53,325          |
| <b>Minimum Wage (Full-Time)</b>     | --                        | 28,475                     | --                |
| <b>Total</b>                        | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|-----------------|-------------------|------------------|
| <b>Direct Effect</b>   | 1.2        | \$53,749        | \$87,958          | \$178,169        |
| <b>Indirect Effect</b> | 0.3        | \$12,619        | \$21,191          | \$45,168         |
| <b>Induced Effect</b>  | 0.3        | \$10,089        | \$20,108          | \$35,143         |
| <b>Total Effect</b>    | <b>1.7</b> | <b>\$76,457</b> | <b>\$129,257</b>  | <b>\$258,480</b> |

### *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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 16.1        | \$1,897,666        | \$2,084,735        | \$3,363,159        |
| <b>Induced Effect</b> | 6.8         | \$258,278          | \$523,252          | \$912,510          |
| <b>Total Effect</b>   | <b>22.9</b> | <b>\$2,155,944</b> | <b>\$2,607,987</b> | <b>\$4,275,669</b> |

## 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        |
| <b>Total</b>                     | <b>70.4</b> | <b>\$2,752,260</b> | <b>\$4,296,339</b> | <b>\$7,236,447</b> |

### 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                   | --                |
| <b>Total</b>                | <b>331.5</b>              |                            |                   |

### 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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             |
|------------------------|------------|------------------|-------------------|--------------------|
| <b>Direct Effect</b>   | 8          | \$356,716        | \$593,021         | \$1,186,673        |
| <b>Indirect Effect</b> | 2          | \$92,924         | \$161,679         | \$308,084          |
| <b>Induced Effect</b>  | 2          | \$78,582         | \$155,114         | \$263,160          |
| <b>Total Effect</b>    | <b>12</b>  | <b>\$528,222</b> | <b>\$909,814</b>  | <b>\$1,757,916</b> |

### 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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 29.5        | \$1,063,119        | \$1,115,496        | \$1,612,403        |
| <b>Induced Effect</b> | 4.9         | \$199,271          | \$397,249          | \$675,276          |
| <b>Total Effect</b>   | <b>34.4</b> | <b>\$1,262,390</b> | <b>\$1,512,744</b> | <b>\$2,287,680</b> |



## 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         |
| <b>Total</b>                     | <b>100.2</b> | <b>\$6,196,927</b> | <b>\$8,780,242</b> | <b>\$14,182,468</b> |

### 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 |
|---------------------------------|---------------------------|----------------------------|-------------------|
| <b>Animation &amp; Graphics</b> | 30.5                      | \$44,600                   | \$16,125          |
| <b>Autobody Technology</b>      | 39                        | \$35,400                   | \$6,925           |
| <b>Automotive Systems</b>       | 88                        | \$35,400                   | \$6,925           |
| <b>Construction Technology</b>  | 46                        | \$41,260                   | \$12,785          |
| <b>Cosmetology</b>              | 31.5                      | \$30,100                   | \$1,624           |
| <b>Criminal Justice</b>         | 34.5                      | \$49,875                   | \$21,400          |
| <b>Culinary Arts</b>            | 58                        | \$30,800                   | \$2,325           |
| <b>Dental Assisting</b>         | 24                        | \$35,800                   | \$7,325           |
| <b>Manufacturing</b>            | 8                         | \$33,500                   | \$5,025           |
| <b>Medical Assistant</b>        | 13                        | \$35,800                   | \$7,325           |
| <b>Pre-Nursing</b>              | 35.5                      | \$30,500                   | \$2,025           |
| <b>Pre-Vet Tech</b>             | 35.5                      | \$31,700                   | \$3,225           |
| <b>Video Game Design</b>        | 24.5                      | \$81,800                   | \$53,325          |
| <b>Welding</b>                  | 41                        | \$36,367                   | \$7,891           |
| <b>Animation Graphics</b>       | 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 | --       |
| <b>Total</b>                 | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>   | 2.2        | \$91,656         | \$145,978         | \$284,903        |
| <b>Indirect Effect</b> | 0.7        | \$31,757         | \$52,009          | \$98,994         |
| <b>Induced Effect</b>  | 2.8        | \$34,487         | \$62,546          | \$107,915        |
| <b>Total Effect</b>    | <b>5.7</b> | <b>\$157,899</b> | <b>\$260,532</b>  | <b>\$491,812</b> |

### 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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 29.4        | \$3,131,396        | \$3,250,333        | \$4,571,906        |
| <b>Induced Effect</b> | 23.1        | \$1,009,676        | \$1,837,195        | \$3,172,855        |
| <b>Total Effect</b>   | <b>52.5</b> | <b>\$4,141,072</b> | <b>\$5,087,528</b> | <b>\$7,744,762</b> |

## 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        |
| <b>Total</b>                     | <b>69</b>  | <b>\$4,334,000</b> | <b>\$6,007,000</b> | <b>\$9,415,000</b> |

### 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) |
|--|-------------------------|------------------------------------|
| <b>High school diploma</b>             | \$746                   | \$38,792                           |
| <b>Less than a high school diploma</b> | \$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                   | --                |
| <b>Total</b>                | 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    |
|-----------------------|------------|--------------|-------------------|-----------|
| <b>Induced Effect</b> | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>   | 7          | \$421,000        | \$502,000         | \$528,000        |
| <b>Indirect Effect</b> | 0          | \$5,000          | \$8,000           | \$15,000         |
| <b>Induced Effect</b>  | 2          | \$80,000         | \$154,000         | \$268,000        |
| <b>Total Effect</b>    | <b>9</b>   | <b>\$506,000</b> | <b>\$664,000</b>  | <b>\$811,000</b> |

### *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             |
|-----------------------|------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 19         | \$2,282,000        | \$2,391,000        | \$3,458,000        |
| <b>Induced Effect</b> | 13         | \$495,000          | \$965,000          | \$1,675,000        |
| <b>Total Effect</b>   | <b>32</b>  | <b>\$2,777,000</b> | <b>\$3,356,000</b> | <b>\$5,133,000</b> |

## 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         |
| <b>Total</b>                     | <b>87</b>  | <b>\$4,721,717</b> | <b>\$7,034,703</b> | <b>\$10,797,441</b> |

### 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 |
|---------------------------------|---------------------------|----------------------------|-------------------|
| <b>Aerospace Composites</b>     | 31.5                      | \$53,900                   | \$25,425          |
| <b>Aerospace Manufacturing</b>  | 37                        | \$51,133                   | \$22,658          |
| <b>Automotive Systems</b>       | 58.5                      | \$35,400                   | \$6,925           |
| <b>Construction Technology</b>  | 35.5                      | \$41,260                   | \$12,785          |
| <b>Cosmetology</b>              | 15                        | \$30,100                   | \$1,625           |
| <b>Criminal Justice</b>         | 46.5                      | \$41,875                   | \$21,400          |
| <b>Culinary Arts</b>            | 36.5                      | \$30,800                   | \$2,325           |
| <b>Firefighting</b>             | 30.5                      | \$51,000                   | \$22,525          |
| <b>Information Technology</b>   | 34.5                      | \$63,280                   | \$34,805          |
| <b>Medical Careers</b>          | 41                        | \$35,800                   | \$7,325           |
| <b>Pre-pharmacy</b>             | 17.5                      | \$37,000                   | \$8,525           |
| <b>Pre-physical Therapy</b>     | 28                        | \$36,700                   | \$8,225           |
| <b>Pre-vet Tech</b>             | 36.5                      | \$31,700                   | \$3,225           |
| <b>Video Game Design</b>        | 40                        | \$81,800                   | \$33,325          |
| <b>Minimum Wage (Full-Time)</b> | --                        | \$28,475                   | --                |
| <b>Total</b>                    | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>   | 3.4        | \$161,636        | \$259,745         | \$440,871        |
| <b>Indirect Effect</b> | 0.6        | \$29,646         | \$50,535          | \$87,757         |
| <b>Induced Effect</b>  | 0.8        | \$38,194         | \$69,912          | \$112,359        |
| <b>Total Effect</b>    | <b>4.8</b> | <b>\$229,476</b> | <b>\$380,193</b>  | <b>\$640,988</b> |

### 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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 28.3        | \$1,896,433        | \$1,929,799        | \$2,543,915        |
| <b>Induced Effect</b> | 9.2         | \$448,721          | \$824,146          | \$1,327,057        |
| <b>Total Effect</b>   | <b>37.5</b> | <b>\$2,345,155</b> | <b>\$2,753,946</b> | <b>\$3,870,972</b> |

## 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         |
| <b>Total</b>                     | <b>76.9</b> | <b>\$6,189,668</b> | <b>\$8,863,202</b> | <b>\$12,840,171</b> |

### 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          |



|   |       |          |         |
|---|-------|----------|---------|
| <b>Medical Assistant</b>                | 85.5  | \$35,800 | \$7,325 |
| <b>Outdoor Leadership</b>               | 12.5  | \$36,775 | \$8,300 |
| <b>Translation &amp; Interpretation</b> | 20    | \$35,400 | \$6,925 |
| <b>Minimum Wage (Full-Time)</b>         | --    | \$28,475 | --      |
| <b>Total</b>                            | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>   | 2.8        | \$181,797        | \$301,377         | \$499,126        |
| <b>Indirect Effect</b> | 0.8        | \$61,770         | \$98,765          | \$155,686        |
| <b>Induced Effect</b>  | 0.8        | \$46,978         | \$84,246          | \$128,835        |
| <b>Total Effect</b>    | <b>4.3</b> | <b>\$290,546</b> | <b>\$484,387</b>  | <b>\$783,647</b> |

### *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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 21.5        | \$2,787,182        | \$2,800,192        | \$3,520,277        |
| <b>Induced Effect</b> | 12.5        | \$756,085          | \$1,351,351        | \$2,079,279        |
| <b>Total Effect</b>   | <b>34.8</b> | <b>\$3,543,267</b> | <b>\$4,151,543</b> | <b>\$5,599,556</b> |

## 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        |
| <b>Total</b>                     | <b>57.6</b> | <b>\$4,169,427</b> | <b>\$6,402,913</b> | <b>\$9,429,576</b> |

### 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 |
|--|---------------------------|----------------------------|-------------------|
| <b>Administrative Medical Office Assistant</b> | 1.5                       | \$33,950                   | \$5,475           |
| <b>Aerospace Manufacturing</b>                 | 40.5                      | \$51,133                   | \$22,658          |
| <b>Animation &amp; Graphic Design</b>          | 51                        | \$44,600                   | \$16,125          |
| <b>Automotive Systems</b>                      | 26                        | \$35,400                   | \$6,925           |
| <b>Biomedical Research</b>                     | 17                        | \$45,900                   | \$17,425          |
| <b>Broadcasting Today</b>                      | 15.5                      | \$32,900                   | \$4,425           |
| <b>Construction Technology</b>                 | 26.5                      | \$41,260                   | \$12,785          |
| <b>Culinary Arts</b>                           | 83.5                      | \$30,800                   | \$2,325           |
| <b>Digital Arts &amp; Filmmaking</b>           | 34                        | \$37,125                   | \$8,650           |
| <b>Fire Fighting</b>                           | 19.5                      | \$51,000                   | \$22,525          |
| <b>Information Technology</b>                  | 31                        | \$63,280                   | \$34,805          |
| <b>Maritime Vessel Operations</b>              | 21                        | \$47,900                   | \$19,425          |
| <b>Medical Assistant</b>                       | 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 | --       |
| <b>Total</b>                          | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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          |
|------------------------|------------|-----------------|-------------------|-----------------|
| <b>Direct Effect</b>   | 0.2        | \$12,646        | \$20,965          | \$34,721        |
| <b>Indirect Effect</b> | 0.1        | \$4,297         | \$6,870           | \$10,830        |
| <b>Induced Effect</b>  | 0.1        | \$3,268         | \$5,860           | \$8,962         |
| <b>Total Effect</b>    | <b>0.3</b> | <b>\$20,211</b> | <b>\$33,696</b>   | <b>\$54,513</b> |

### *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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 11.4        | \$1,352,104        | \$1,358,415        | \$1,707,739        |
| <b>Induced Effect</b> | 6.0         | \$366,788          | \$655,561          | \$1,008,690        |
| <b>Total Effect</b>   | <b>17.4</b> | <b>\$1,718,892</b> | <b>\$2,013,976</b> | <b>\$2,716,429</b> |

## 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        |
| <b>Total</b>                     | <b>115.3</b> | <b>\$9,241,968</b> | <b>\$12,700,856</b> | <b>\$19,032,169</b> |

### 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 |
|--|---------------------------|----------------------------|-------------------|
| <b>Aerospace Manufacturing</b>             | 50                        | \$51,133                   | \$22,658          |
| <b>Autobody &amp; Collision Repair</b>     | 40                        | \$35,400                   | \$6,925           |
| <b>Auto Technology</b>                     | 40                        | \$35,400                   | \$6,925           |
| <b>Computers, Servers &amp; Networking</b> | 40                        | \$63,280                   | \$34,805          |
| <b>Construction Technology</b>             | 22                        | \$41,260                   | \$12,785          |
| <b>Cosmetology</b>                         | 30                        | \$30,100                   | \$1,625           |
| <b>Criminal Justice</b>                    | 40                        | \$49,875                   | \$21,400          |
| <b>Culinary Arts</b>                       | 38                        | \$30,800                   | \$2,325           |
| <b>Dental Assisting</b>                    | 42                        | \$35,800                   | \$7,325           |
| <b>Diesel Power Technology</b>             | 49                        | \$35,400                   | \$6,925           |
| <b>Electronics Engineer</b>                | 47                        | \$50,700                   | \$22,225          |
| <b>Fashion Designer</b>                    | 32                        | \$49,000                   | \$20,525          |
| <b>Fire Fighting</b>                       | 41                        | \$51,000                   | \$22,525          |
| <b>Medical Assistant</b>                   | 47                        | \$35,800                   | \$7,325           |
| <b>Nursing Assistant</b>                   | 33                        | \$35,800                   | \$7,325           |

|  |     |          |          |
|--|-----|----------|----------|
| <b>Machining</b>                       | 19  | \$32,900 | \$4,425  |
| <b>Vet assistant</b>                   | 44  | \$31,700 | \$3,225  |
| <b>Video Game Design</b>               | 81  | \$81,800 | \$53,325 |
| <b>Welding &amp; Metal Fabrication</b> | 49  | \$36,367 | \$7,891  |
| <b>Minimum Wage (Full-Time)</b>        | --  | \$28,475 |          |
| <b>Total</b>                           | 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        |
|-----------------------|------------|---------------|-------------------|---------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>   | 3.9        | \$164,966        | \$244,893         | \$426,234        |
| <b>Indirect Effect</b> | 0.6        | \$27,244         | \$43,741          | \$76,666         |
| <b>Induced Effect</b>  | 0.6        | \$26,850         | \$53,202          | \$84,427         |
| <b>Total Effect</b>    | <b>5.1</b> | <b>\$219,060</b> | <b>\$341,837</b>  | <b>\$587,327</b> |

### *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              |
|-----------------------|------------|--------------------|--------------------|---------------------|
| <b>Direct Effect</b>  | 31.7       | \$5,714,538        | \$5,918,127        | \$8,201,675         |
| <b>Induced Effect</b> | 21.3       | \$896,291          | \$1,784,779        | \$2,839,425         |
| <b>Total Effect</b>   | <b>53</b>  | <b>\$6,610,830</b> | <b>\$7,702,906</b> | <b>\$11,041,100</b> |

## 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        |
| <b>Total</b>                     | <b>26.7</b> | <b>\$2,056,744</b> | <b>\$2,153,927</b> | <b>\$3,537,822</b> |

### 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 |
|------------------------------------|---------------------------|----------------------------|-------------------|
| <b>Aerospace Manufacturing</b>     | 14.5                      | \$51,133                   | \$22,658          |
| <b>Biomedical Research</b>         | 15.5                      | \$45,900                   | \$17,425          |
| <b>DigiPen Art &amp; Animation</b> | 10                        | \$63,300                   | \$34,825          |
| <b>Electronics Engineering</b>     | 8.5                       | \$50,700                   | \$22,225          |
| <b>Firefighting</b>                | 37                        | \$51,000                   | \$22,525          |
| <b>Minimum Wage (Full-Time)</b>    | --                        | \$28,475                   | --                |
| <b>Total</b>                       | <b>85.5</b>               |                            |                   |

### 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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    |
|------------------------|------------|--------------|-------------------|-----------|
| <b>Direct Effect</b>   | 0.7        | \$27,706     | \$44,127          | \$86,121  |
| <b>Indirect Effect</b> | 0.2        | \$9,599      | \$15,721          | \$29,924  |
| <b>Induced Effect</b>  | 0.2        | \$10,425     | \$18,906          | \$32,621  |
| <b>Total Effect</b>    | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Direct Effect</b>  | 7.1        | \$591,135    | \$613,587         | \$863,070   |
| <b>Induced Effect</b> | 4.4        | \$190,603    | \$346,819         | \$598,961   |
| <b>Total Effect</b>   | 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         |
| <b>Total</b>                     | <b>113.8</b> | <b>\$7,023,365</b> | <b>\$10,091,197</b> | <b>\$16,781,354</b> |

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

|                                      |       |          |          |
|--------------------------------------|-------|----------|----------|
| <b>Video Game Design</b>             | 28.5  | \$81,800 | \$53,325 |
| <b>Welding</b>                       | 49.5  | \$36,367 | \$7,891  |
| <b>Teen Parent Education</b>         | 9     | \$39,067 | \$10,591 |
| <b>Health Information Technology</b> | 41    | \$36,200 | \$7,725  |
| <b>Minimum Wage (Full-Time)</b>      | --    | \$28,475 | --       |
| <b>Total</b>                         | 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        |
|-----------------------|------------|---------------|-------------------|---------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>   | 3          | \$166,549        | \$256,901         | \$470,449        |
| <b>Indirect Effect</b> | 0.7        | \$41,152         | \$65,234          | \$120,979        |
| <b>Induced Effect</b>  | 0.9        | \$40,393         | \$75,062          | \$126,140        |
| <b>Total Effect</b>    | <b>4.6</b> | <b>\$248,094</b> | <b>\$397,196</b>  | <b>\$717,568</b> |

### *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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 37.9        | \$3,698,654        | \$4,045,661        | \$6,522,900        |
| <b>Induced Effect</b> | 17.6        | \$758,879          | \$1,421,909        | \$2,392,232        |
| <b>Total Effect</b>   | <b>55.5</b> | <b>\$4,457,533</b> | <b>\$5,467,570</b> | <b>\$8,915,132</b> |

## 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          |
| <b>Total</b>                     | <b>10.3</b> | <b>\$635,918</b> | <b>\$887,107</b> | <b>\$1,407,931</b> |

### 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 |
|---|---------------------------|----------------------------|-------------------|
| <b>Automotive Systems</b>                 | 9.5                       | \$35,400                   | \$6,925           |
| <b>Cosmetology</b>                        | 15.5                      | \$30,100                   | \$1,625           |
| <b>Criminal Justice</b>                   | 14.5                      | \$49,875                   | \$21,400          |
| <b>Electronics Engineering Technology</b> | 11                        | \$50,700                   | \$22,225          |
| <b>Medical Assistant</b>                  | 5                         | \$35,800                   | \$7,325           |
| <b>Pre-Nursing</b>                        | 17.5                      | \$30,500                   | \$2,025           |
| <b>Minimum Wage (Full-Time)</b>           | --                        | \$28,475                   | --                |
| <b>Total</b>                              | <b>73</b>                 |                            |                   |

### 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    |
|-----------------------|------------|--------------|-------------------|-----------|
| <b>Induced Effect</b> | 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          |
|------------------------|------------|----------------|-------------------|-----------------|
| <b>Direct Effect</b>   | 0.1        | \$6,269        | \$10,422          | \$20,855        |
| <b>Indirect Effect</b> | 0.0        | \$1,633        | \$2,841           | \$5,414         |
| <b>Induced Effect</b>  | 0.0        | \$1,381        | \$2,726           | \$4,625         |
| <b>Total Effect</b>    | <b>0.2</b> | <b>\$9,283</b> | <b>\$15,990</b>   | <b>\$30,895</b> |

**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           |
|-----------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>  | 4.3        | \$392,618        | \$411,961         | \$595,473        |
| <b>Induced Effect</b> | 1.8        | \$73,592         | \$146,707         | \$249,385        |
| <b>Total Effect</b>   | <b>6.1</b> | <b>\$466,211</b> | <b>\$558,669</b>  | <b>\$844,858</b> |

## 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        |
| <b>Total</b>                     | <b>19.7</b> | <b>\$1,123,766</b> | <b>\$1,733,731</b> | <b>\$3,334,512</b> |

### 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 |
|--|---------------------------|----------------------------|-------------------|
| <b>Advanced Manufacturing &amp; Welding Technology</b> | 43                        | \$36,367                   | \$7,891           |
| <b>Audio &amp; Video Production</b>                    | 29                        | \$37,125                   | \$8,650           |
| <b>Construction Technology</b>                         | 34                        | \$41,260                   | \$12,785          |
| <b>Criminal Justice</b>                                | 35.5                      | \$49,875                   | \$21,400          |
| <b>Pre-Nursing</b>                                     | 36                        | \$30,500                   | \$2,025           |
| <b>Minimum Wage (Full-Time)</b>                        | --                        | \$28,475                   | --                |
| <b>Total</b>   | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|-----------------|-------------------|------------------|
| <b>Direct Effect</b>   | 1.1        | \$35,940        | \$66,552          | \$148,389        |
| <b>Indirect Effect</b> | 0.2        | \$7,372         | \$16,359          | \$34,291         |
| <b>Induced Effect</b>  | 0.2        | \$5,385         | \$11,432          | \$20,495         |
| <b>Total Effect</b>    | <b>1.5</b> | <b>\$48,697</b> | <b>\$94,343</b>   | <b>\$203,175</b> |

### *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             |
|-----------------------|------------|------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 6.6        | \$686,699        | \$827,592          | \$1,665,360        |
| <b>Induced Effect</b> | 2.5        | \$84,640         | \$183,274          | \$327,929          |
| <b>Total Effect</b>   | <b>9.1</b> | <b>\$771,339</b> | <b>\$1,010,866</b> | <b>\$1,993,289</b> |



## 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         |
| <b>Total</b>                     | <b>80.6</b> | <b>\$5,520,434</b> | <b>\$8,458,096</b> | <b>\$12,536,566</b> |

### 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 |
|---|---------------------------|----------------------------|-------------------|
| <b>Automotive Systems</b>               | 34                        | \$35,400                   | \$6,925           |
| <b>Computer Science DigiPen</b>         | 20.5                      | \$63,280                   | \$34,805          |
| <b>Culinary Arts</b>                    | 16                        | \$30,800                   | \$2,325           |
| <b>Dental Assisting</b>                 | 9                         | \$35,800                   | \$7,325           |
| <b>DigiPen Art &amp; Animation</b>      | 61.5                      | \$63,300                   | \$34,825          |
| <b>DigiPen Music &amp; Sound Design</b> | 13.5                      | \$32,133                   | \$3,658           |
| <b>Emergency Medical Tech</b>           | 5                         | \$30,300                   | \$1,825           |
| <b>Firefighter</b>                      | 33.5                      | \$51,000                   | \$22,525          |
| <b>Medical Assistant</b>                | 16                        | \$35,800                   | \$7,325           |
| <b>Medical Careers</b>                  | 30                        | \$35,800                   | \$7,325           |
| <b>Sports Medicine</b>                  | 54.5                      | \$30,500                   | \$2,025           |
| <b>Pre-Physical Therapy</b>             | 47.5                      | \$36,700                   | \$8,225           |
| <b>Video Game Design</b>                | 44                        | \$81,800                   | \$53,325          |
| <b>Cisco Systems</b>                    | 91                        | \$54,600                   | \$26,125          |
| <b>Minimum Wage (Full-Time)</b>         | --                        | \$28,475                   | --                |
| <b>Total</b>                            | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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             |
|------------------------|------------|------------------|-------------------|--------------------|
| <b>Direct Effect</b>   | 3.8        | \$248,252        | \$411,543         | \$681,578          |
| <b>Indirect Effect</b> | 1.1        | \$84,350         | \$134,868         | \$212,596          |
| <b>Induced Effect</b>  | 1.1        | \$64,151         | \$115,041         | \$175,930          |
| <b>Total Effect</b>    | <b>5.9</b> | <b>\$396,753</b> | <b>\$661,451</b>  | <b>\$1,070,103</b> |

### *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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 19.3        | \$1,741,427        | \$1,749,556        | \$2,199,464        |
| <b>Induced Effect</b> | 7.8         | \$472,400          | \$844,322          | \$1,299,130        |
| <b>Total Effect</b>   | <b>27.1</b> | <b>\$2,213,828</b> | <b>\$2,593,878</b> | <b>\$3,498,594</b> |

## 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        |
| <b>Total</b>                     | <b>48.1</b> | <b>\$2,863,499</b> | <b>\$4,275,695</b> | <b>\$7,288,324</b> |

### 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 |
|---------------------------------|---------------------------|----------------------------|-------------------|
| <b>Autobody Technology</b>      | 49                        | \$35,400                   | \$6,925           |
| <b>Automation Systems</b>       | 56                        | \$63,280                   | \$34,805          |
| <b>Construction Technology</b>  | 41.5                      | \$41,260                   | \$12,785          |
| <b>Cosmetology</b>              | 34                        | \$30,100                   | \$1,625           |
| <b>Criminal Justice</b>         | 42                        | \$49,875                   | \$21,400          |
| <b>Culinary Arts</b>            | 46.5                      | \$30,800                   | \$2,325           |
| <b>Digital Arts and Film</b>    | 16.5                      | \$37,125                   | \$8,650           |
| <b>Firefighter</b>              | 23                        | \$31,000                   | \$22,525          |
| <b>Video Game Design</b>        | 12                        | \$81,800                   | \$53,325          |
| <b>Computer Technology</b>      | 7                         | \$63,280                   | \$34,805          |
| <b>Minimum Wage (Full-Time)</b> | --                        | \$28,475                   | --                |
| <b>Total</b>                    | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|-----------------|-------------------|------------------|
| <b>Direct Effect</b>   | 1.0        | \$44,716        | \$73,175          | \$148,225        |
| <b>Indirect Effect</b> | 0.2        | \$10,498        | \$17,630          | \$37,577         |
| <b>Induced Effect</b>  | 0.2        | \$8,394         | \$16,728          | \$29,237         |
| <b>Total Effect</b>    | <b>1.4</b> | <b>\$63,607</b> | <b>\$107,533</b>  | <b>\$215,039</b> |

### *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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 14.2        | \$1,560,568        | \$1,714,405        | \$2,765,732        |
| <b>Induced Effect</b> | 5.6         | \$212,398          | \$430,302          | \$750,413          |
| <b>Total Effect</b>   | <b>19.8</b> | <b>\$1,772,965</b> | <b>\$2,144,707</b> | <b>\$3,516,145</b> |

## 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        |
| <b>Total</b>                     | <b>58.9</b> | <b>\$3,497,123</b> | <b>\$4,992,053</b> | <b>\$8,061,470</b> |

### 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 |
|---------------------------------|---------------------------|----------------------------|-------------------|
| <b>Autobody Technology</b>      | 29                        | \$35,400                   | \$6,925           |
| <b>Automotive Systems</b>       | 27                        | \$35,400                   | \$6,925           |
| <b>Construction Technology</b>  | 23                        | \$41,260                   | \$12,785          |
| <b>Cosmetology</b>              | 25                        | \$30,100                   | \$1,625           |
| <b>Criminal Justice</b>         | 29                        | \$49,875                   | \$21,400          |
| <b>Culinary Arts</b>            | 23                        | \$30,800                   | \$2,325           |
| <b>Esthetics</b>                | 16                        | \$31,900                   | \$3,425           |
| <b>Fire Fighting</b>            | 11                        | \$51,000                   | \$22,525          |
| <b>Medical Careers</b>          | 38                        | \$35,800                   | \$7,325           |
| <b>Video Game Design</b>        | 45                        | \$81,800                   | \$53,325          |
| <b>Welding</b>                  | 48.5                      | \$36,367                   | \$7,891           |
| <b>Design Tech</b>              | 9                         | \$81,800                   | \$53,325          |
| <b>Minimum Wage (Full-Time)</b> | --                        | \$28,475                   | --                |
| <b>Total</b>                    | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>   | 1.6        | \$70,798         | \$110,586         | \$221,125        |
| <b>Indirect Effect</b> | 0.4        | \$17,237         | \$27,242          | \$55,131         |
| <b>Induced Effect</b>  | 0.3        | \$12,199         | \$25,307          | \$44,197         |
| <b>Total Effect</b>    | <b>2.3</b> | <b>\$100,234</b> | <b>\$163,135</b>  | <b>\$320,453</b> |

### *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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 21.0        | \$2,119,193        | \$2,213,289        | \$3,145,432        |
| <b>Induced Effect</b> | 8.9         | \$319,963          | \$670,910          | \$1,174,940        |
| <b>Total Effect</b>   | <b>29.9</b> | <b>\$2,439,156</b> | <b>\$2,884,199</b> | <b>\$4,320,372</b> |

## 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         |
| <b>Total</b>                     | <b>92.8</b> | <b>\$5,880,745</b> | <b>\$8,190,033</b> | <b>\$13,390,277</b> |

### 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 |
|---------------------------------------|---------------------------|----------------------------|-------------------|
| <b>Autobody Technology</b>            | 44.5                      | \$35,400                   | \$6,925           |
| <b>Automotive Systems</b>             | 77                        | \$35,400                   | \$6,925           |
| <b>Business Principles</b>            | 46                        | \$46,100                   | \$17,625          |
| <b>Construction Technology</b>        | 43.5                      | \$41,260                   | \$12,785          |
| <b>Cosmetology</b>                    | 128.5                     | \$30,100                   | \$1,625           |
| <b>Criminal Justice</b>               | 45                        | \$49,875                   | \$21,400          |
| <b>Culinary Arts</b>                  | 48                        | \$30,800                   | \$2,325           |
| <b>Dental Assisting</b>               | 65.5                      | \$35,800                   | \$7,325           |
| <b>Drone Manufacturing</b>            | 28.5                      | \$54,650                   | \$26,175          |
| <b>Fire Fighting</b>                  | 16.5                      | \$51,000                   | \$22,525          |
| <b>Pre-Nursing</b>                    | 116.5                     | \$30,500                   | \$2,025           |
| <b>Pre-Physical Therapy</b>           | 46.5                      | \$36,700                   | \$8225            |
| <b>Welding</b>                        | 28.5                      | \$36,367                   | \$7,891           |
| <b>Entertainment Media Production</b> | 44                        | \$37,125                   | \$8,650           |

|                                 |      |          |          |
|---------------------------------|------|----------|----------|
| <b>Electrical</b>               | 37.5 | \$40,400 | \$11,925 |
| <b>Computer Technology</b>      | 42   | \$63,280 | \$34,805 |
| <b>Minimum Wage (Full-Time)</b> | --   | \$28,475 | --       |
| <b>Total</b>                    | 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      |
|-----------------------|------------|--------------|-------------------|-------------|
| <b>Induced Effect</b> | 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           |
|------------------------|------------|------------------|-------------------|------------------|
| <b>Direct Effect</b>   | 3.6        | \$149,155        | \$249,264         | \$496,725        |
| <b>Indirect Effect</b> | 0.8        | \$33,679         | \$60,586          | \$122,520        |
| <b>Induced Effect</b>  | 0.8        | \$30,532         | \$57,181          | \$98,999         |
| <b>Total Effect</b>    | <b>5.2</b> | <b>\$213,366</b> | <b>\$367,032</b>  | <b>\$718,244</b> |

### *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             |
|-----------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>  | 30.0        | \$3,387,839        | \$3,584,548        | \$5,307,605        |
| <b>Induced Effect</b> | 15.1        | \$598,257          | \$1,138,970        | \$1,970,105        |
| <b>Total Effect</b>   | <b>45.1</b> | <b>\$3,986,095</b> | <b>\$4,723,518</b> | <b>\$7,277,710</b> |



## 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         |
| <b>Total</b>                     | <b>1229.5</b> | <b>\$77,267,609</b> | <b>\$111,838,524</b> | <b>\$176,710,944</b> |

### 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       |
|-----------------------|------------|--------------|-------------------|--------------|
| <b>Induced Effect</b> | 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             |
|------------------------|-------------|--------------------|--------------------|--------------------|
| <b>Direct Effect</b>   | 49          | \$2,412,507        | \$3,714,404        | \$6,469,593        |
| <b>Indirect Effect</b> | 9.6         | \$508,807          | \$849,735          | \$1,536,422        |
| <b>Induced Effect</b>  | 14.1        | \$533,342          | \$1,010,606        | \$1,677,315        |
| <b>Total Effect</b>    | <b>72.7</b> | <b>\$3,454,656</b> | <b>\$5,574,745</b> | <b>\$9,683,330</b> |

### *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              |
|-----------------------|--------------|---------------------|---------------------|---------------------|
| <b>Direct Effect</b>  | 377.9        | \$39,002,056        | \$40,992,274        | \$59,480,213        |
| <b>Induced Effect</b> | 181.2        | \$7,997,699         | \$15,224,731        | \$25,247,604        |
| <b>Total Effect</b>   | <b>559.1</b> | <b>\$46,999,755</b> | <b>\$55,782,102</b> | <b>\$84,727,817</b> |