WORKFORCE central

Skills Gap Analysis & Sector Strategies
at a Glance

September 2016

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Full reports

To learn more about each industry click on these links:

Health Care Industry Skills Gap Analysis & Sector Strategies Report

Construction Industry Skills Gap Analysis & Sector Strategies Report

Advanced Manufacturing Industry Skills Gap Analysis & Sector Strategies Report

Transportation Industry Skills Gap Analysis & Sector Strategies Report

ICT & Cybersecurity Industry Skills Gap Analysis & Sector Strategies Report

Military & Defense Industry Skills Gap Analysis & Sector Strategies Report

Introduction

In mid-2016, WorkForce Central on behalf of the Workforce Development Council commissioned studies of the top six employment sectors within Pierce County. The studies examined workforce supply and demand through 2023 alongside targeted stakeholder feedback to build a comprehensive picture of the Pierce County workforce. Pierce County's top six industries are:

- **Health Care**
- **Construction**
- **Military and Defense**
- **Transportation, Warehousing and Logistics**
- **Information and Communications Technology (ICT) and Cybersecurity**
- **Advanced Manufacturing**

The reports outline data and trends that can be used to inform decisions about programming, policy development and investment within and beyond the workforce development network. Key findings revealed in the reports are as follows:

Pierce County has more workers than jobs, but employers aren't enjoying the benefits of the surplus. Nearly half of its population commutes out of the county for work. Pierce County competes for qualified workers with Seattle and King County, where wages tend to be higher and "brand name" companies like Amazon, Microsoft and Boeing attract candidates due to perceptions around prestige and opportunities for advancement.

Stakeholders in every sector are experiencing a deficit in soft skills among applicants. This deficit poses a major barrier to finding and retaining qualified candidates. These essential skills impact how employees interact with their workplace and include punctuality, interview and application filing skills, dress and presentation etiquette, writing skills and interpersonal communications. Employers report frustration in trying to find employees willing to work odd hours, able to pass drug tests and inclined to exert extra effort on the job.

OTHER KEY FINDINGS:

- **Every sector** is expected to experience growth through 2023, though at different rates.
- **Registered nurses pose the greatest shortage** in available talent through 2023.
- Several key occupations lack a local pipeline of talent because there are no training programs specific to the occupation located here.
- **Career mapping** could be a helpful way to illustrate opportunities for jobseekers in cybersecurity, transportation and military contracting.

This summary outlines information from the reports specific to each of the six major industry sectors as well as to the county as a whole. Recommendations for how to improve the workforce development network are outlined on page 12. To view the reports in their entirety, visit **www.workforce-central.org/regional-strategies/data-2016.**
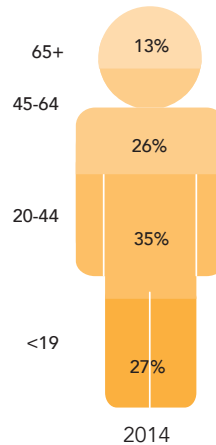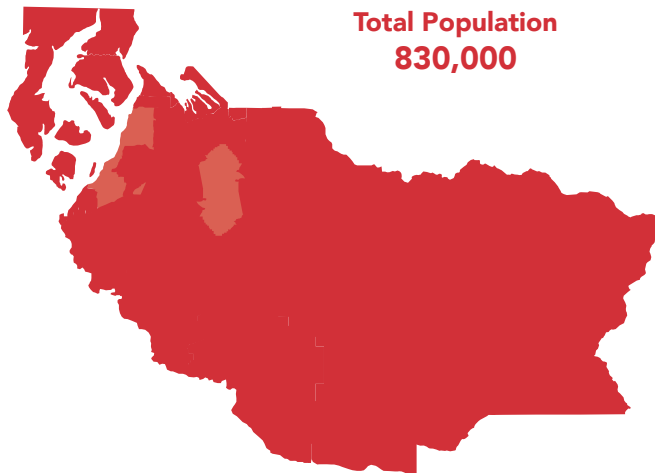
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Population & Demographics

Population[1]

**Total Population
830,000**

Pierce County is expected to grow by **1.1 percent** between 2015 and 2040 to **over 1 million people**

Pierce County is the second most populous county in Washington

Age[2]

65+	13%
45-64	26%
20-44	35%
<19	27%

2014

A larger proportion of residents in Pierce County are under 25 years of age compared to Washington and other Central Puget Sound counties.

Race and Ethnicity[2]

2% Other
3% American Indian/Alaska Native
6% Asian
7% 2 + Races
7% Black/African American
75% White

2014

Other
American Indian/Alaska Native
Asian
2 + Races
Black/African American
White

10 percent of Pierce County's population self-identifies as Hispanic or Latino.

Pierce County is more racially diverse than any other county in Washington.

15 percent of residents speak a language other than English including Spanish, Russian, Korean, German, Vietnamese, etc.
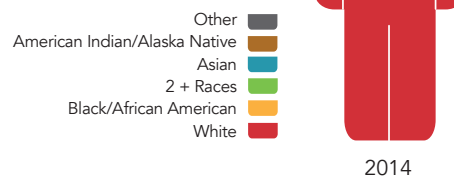
Education Attainment[2]

8.4% of the population ages 18+ don't have a high school diploma

10%
< High School

Some College/AA
38%

High School/GED
30%

Bachelor/Higher
21%
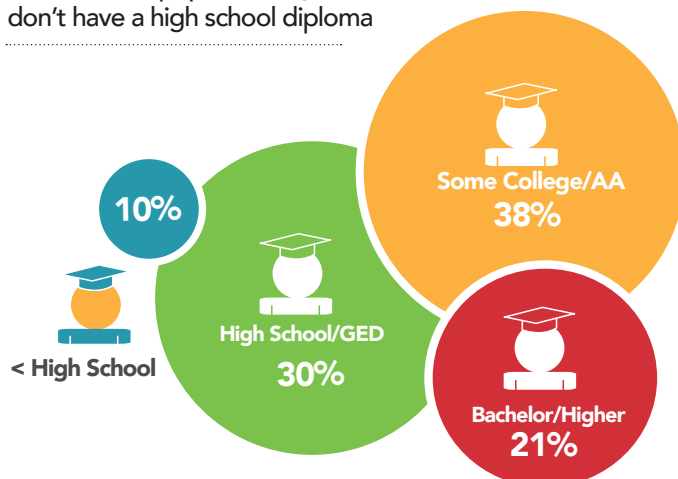
32 percent of Pierce County residents have a postsecondary degree compared to:

58% King County

37% Kitsap County

37% Snohomish

Employment

Pierce County Location Quotients and Industry Forecasted Compound Annual Growth Rates, 2014 and 2018-2023[3]

All industries expect growth through 2023, though at varying rates.

Location Quotient, 2014

Wholesale & Retail Trade

Health Care
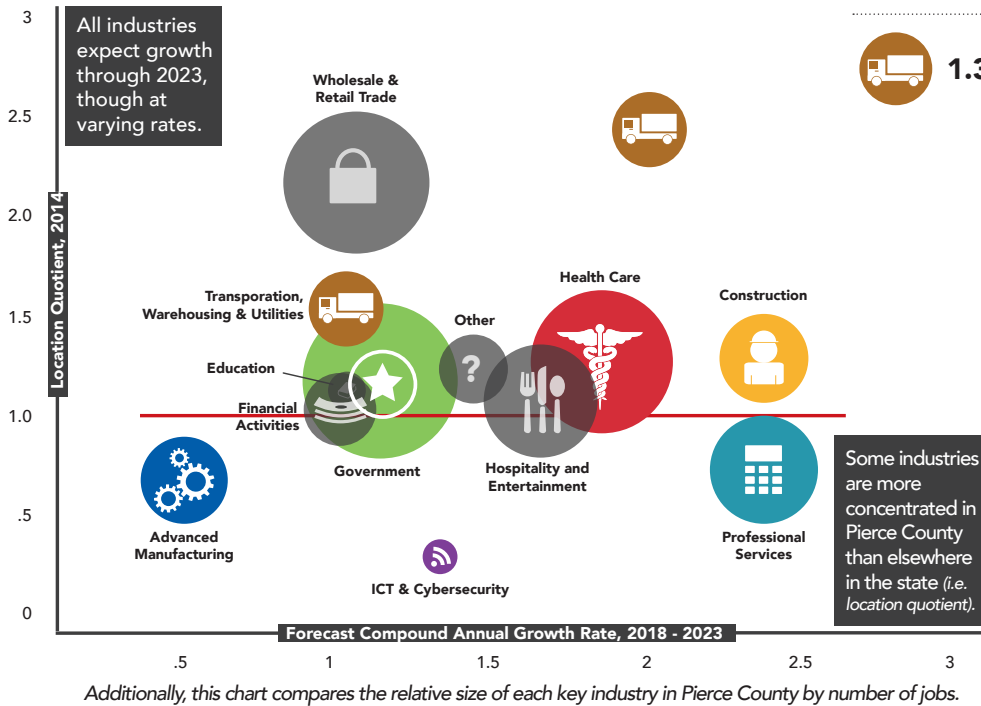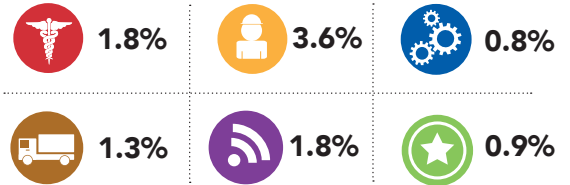
Transporation, Warehousing & Utilities

Construction

Other

Education

Financial Activities

Government

Hospitality and Entertainment

Advanced Manufacturing

Professional Services

ICT & Cybersecurity

Some industries are more concentrated in Pierce County than elsewhere in the state (*i.e. location quotient*).

Forecast Compound Annual Growth Rate, 2018 - 2023

Additionally, this chart compares the relative size of each key industry in Pierce County by number of jobs.

Projected Employment Growth 2018-2023

1.8%	3.6%	0.8%
1.3%	1.8%	0.9%

Employment by industry in the county is expected to remain stable between 2013-2023.

**9.4 percent** (289,000) of nonfarm workers Washington are from Pierce County.

2.4 percent decrease is projected in the government sector by 2023.

Health Care	Construction	Advanced Manufacturing	Transportation	ICT & Cybersecurity	Government	Professional Services	Other

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Employment by Industry Statewide[4]

Pierce County is home to a larger share of the Construction, Trade, Transportation and Logistics industries than any other county in Washington state.

Other sectors include financial activities, information, education leisure and hospitality and other services.
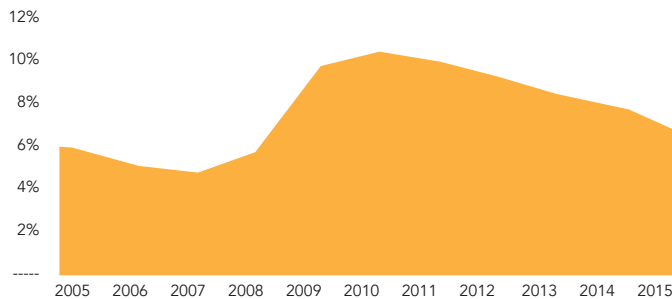
Pierce County

King County

Kitsap County

Snohomish County

Thurston County
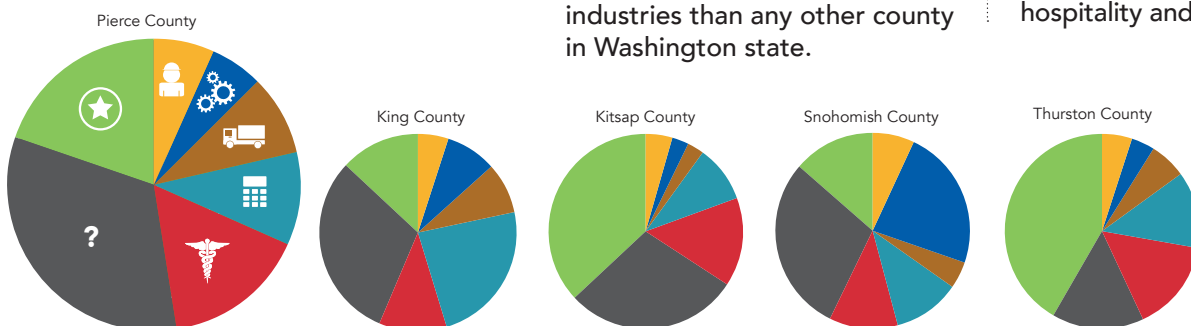
This data includes all actual filled jobs, including both full and part time jobs.

Unemployment

Unemployment Rates in Pierce County[5]

Chart showing unemployment rates:

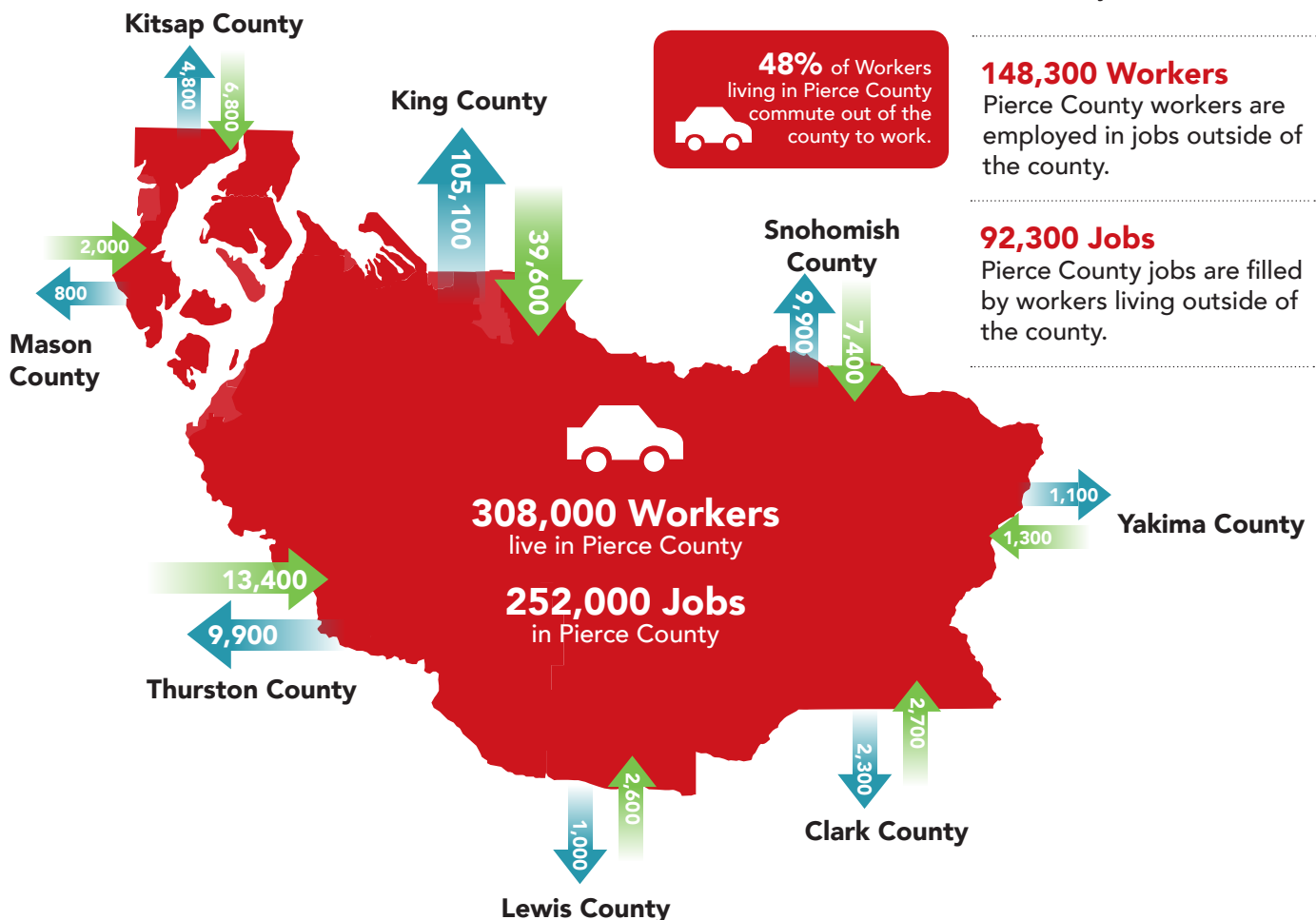| Year	Rate
2005	~6%
2006	~6%
2007	~5%
2008	~5%
2009	~9%
2010	~10%
2011	~10%
2012	~9%
2013	~8%
2014	~7%
2015	~7%

Pierce County unemployment rates follow the regional and state trends closely. However, unemployment rates in the county tend to be higher than the statewide rate and those of the Central Puget Sound counties. The county has experienced a slower recovery than King and Snohomish counties and the state as a whole.

In 2014, there were approximately **252,000 jobs** in Pierce County.

At **19 percent**, Seattle draws the largest share of workers who travel outside of Pierce County to work.

148,300 Workers
Pierce County workers are employed in jobs outside of the county.

92,300 Jobs
Pierce County jobs are filled by workers living outside of the county.

WorkForce Commuters

Pierce County Commute Trends[6]

48% of Workers living in Pierce County commute out of the county to work.

Kitsap County: 4,800 / 6,800

King County: 105,100 / 39,600

Mason County: 2,000 / 800

Snohomish County: 9,900 / 7,400

Yakima County: 1,100 / 1,300

Thurston County: 13,400 / 9,900

Lewis County: 1,000 / 2,600

Clark County: 2,300 / 2,700

308,000 Workers live in Pierce County

252,000 Jobs in Pierce County

Income & Wages

Household Income[7]

41 percent of residents earn less than 50k annually

- 18% < 25k
- 23% 25-50k
- 21% 50-75k
- 14% 75-100k
- 15% 100-150k
- 5% 150-200k
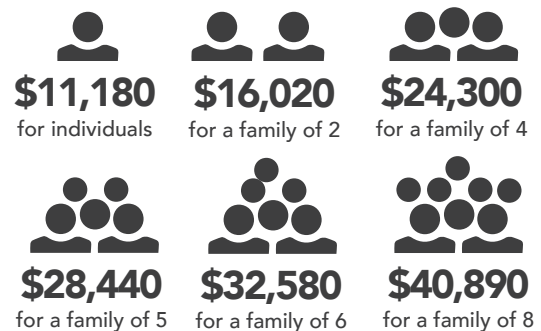- 4% 200k>
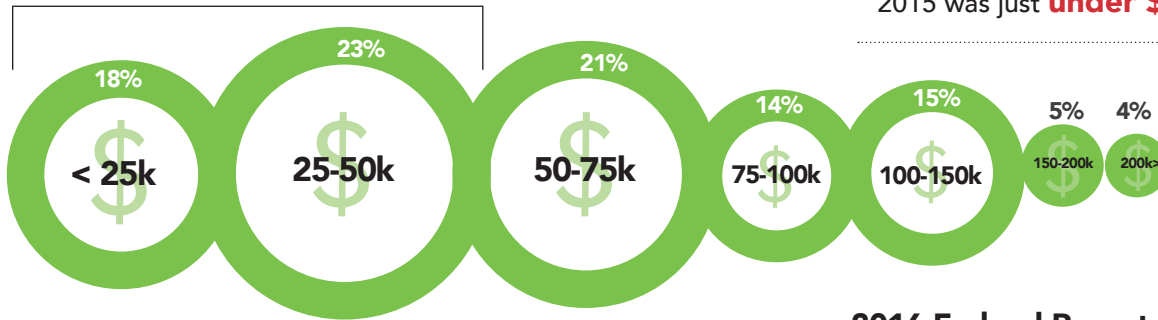
The median Pierce County wage in March 2015 was just **under $40,000 a year.**

Population Below Poverty Line, Statewide[8]

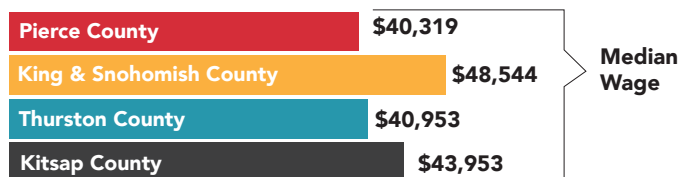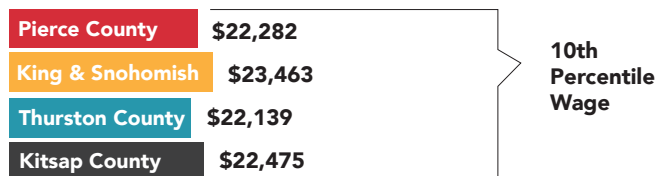| Washington State	Pierce County	King County	Snohomish County	Kitsap County
14%	13%	12%	10%	11%
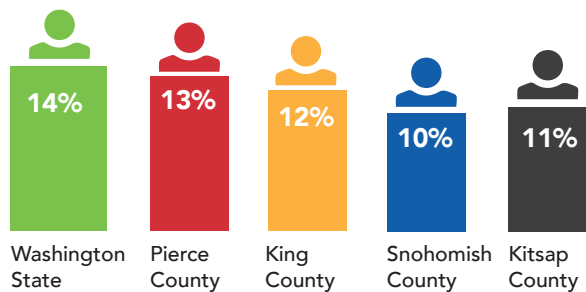
Poverty levels are defined based on household size. The poverty rate is determined by the population living below the poverty level in the past 12 months.

2016 Federal Poverty Level[9]

- **$11,180** for individuals
- **$16,020** for a family of 2
- **$24,300** for a family of 4
- **$28,440** for a family of 5
- **$32,580** for a family of 6
- **$40,890** for a family of 8

13 percent of Pierce County's population lives below the Federal Poverty Level. This is just one percent less than the state average, and higher than all three of the other Central Puget Sound counties.

The Experienced Pierce County Worker's wage is about **$60,700**. That's **$16,000** lower than in King or Snohomish Counties.

Wages in Pierce County[10]

10th Percentile Wage

County	Wage
Pierce County	$22,282
King & Snohomish	$23,463
Thurston County	$22,139
Kitsap County	$22,475

Median Wage

County	Wage
Pierce County	$40,319
King & Snohomish County	$48,544
Thurston County	$40,953
Kitsap County	$43,953

90th Percentile Wage

County	Wage
Pierce County	$85,331
King County and Snohomish County	$120,275
Thurston County	$87,183
Kitsap County	$88,954

Entry[11] Level Jobs

$24,000 Pierce County **VS.** **$26,400** King County and Snohomish County

OVERVIEW

Health care is Pierce County's largest private industry, comprising more than 15 percent of the county's total employment. When combined with government employment, more than 43,700 people work in health care here. "Direct care" is the fastest-growing segment in the industry with a projected growth rate of 2 percent annually through 2023. Direct care occupations include certified nursing assistants, medical assistants, and home health and personal care aides.

Demand for registered nurses exceeds supply, creating an ongoing shortage over the next several years. This shortage is not only the largest in the health care industry but also the largest across all major industries in the county. Simultaneously, licensed practical nurse positions are increasingly difficult to fill as they are sometimes substituted for RNs.

The supply of medical assistants, by contrast, outweighs demand. This is due in part to the abundance of graduates produced by private, for-profit colleges. While many local employers consider the graduates from public institutions to be better prepared than graduates from these trade schools, continuing education opportunities could redirect them into other positions.

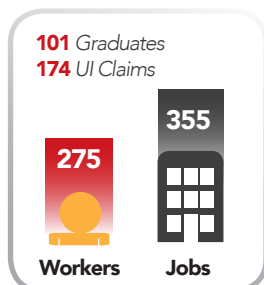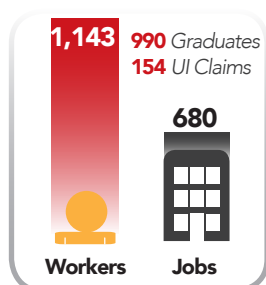**$ Median Annual Wage**
$21,750 - $179,280

2018 - 2023
Projected Talent Supply
Unemployed: 389
Newly-Trained: 1,182

2018 - 2023 PROJECTIONS FOR THE
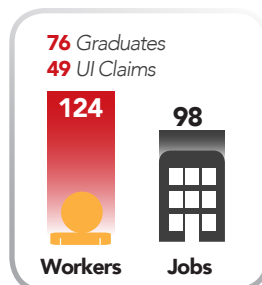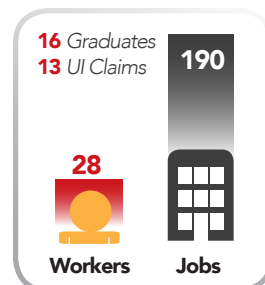### PIERCE COUNTY HEALTHCARE TALENT PIPELINE[12]

On-the-Job Training
101 Graduates
174 UI Claims
275 Workers
355 Jobs

Associate Degree or Postsecondary Award
1,143
990 Graduates
154 UI Claims
Workers
680 Jobs

Bachelor's Degree
76 Graduates
49 UI Claims
124 Workers
98 Jobs

Master's Degree or Higher
16 Graduates
13 UI Claims
190
28 Workers
Jobs

This chart outlines the annual estimate of workers and job openings by education level in Pierce County.

MATCHES FOR GRADUATES QUALIFIED TO WORK AS
REGISTERED NURSES[13]

Classification Instructional Program   *Standard Occupational Classification*

Registered Nurse — Nursing Instructors and Teachers *Postsecondary*

Adult Health Nurse — Registered Nurses

Clinical Nurse Specialist — Nurse Practicioners

Employers can't find enough registered nurses and will continue to have difficulty filling RN positions for the foreseeable future. A lack of clinical space for students in Pierce County may contribute to the shortage.

Qualifications and experience in one occupation may translate into opportunities in another. This is one way employers and employees manage talent surpluses and shortages.

On-the-Job Training

Annual Average Demand and Supply — All Occupations by Education

Demand: 355
Supply: 275 (101 Graduates, 174 UI Claims)

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 170 annual openings in sector)	Gap
1	Social and Human Service Assistants	1,505	1,887	2.3%	Demand 80 / Supply 13	(67)
2	Home Health Aides	1,160	1,673	3.7%	Demand 76 / Supply 14	(62)
3	Personal Care Aides	2,924	3,701	2.4%	Demand 73 / Supply 87	15
4	Medical Secretaries	1,173	1,477	2.3%	Demand 46 / Supply 142	96
5	Food Servers, Nonrestaurant	484	616	2.4%	Demand 27 / Supply 4	(23)
6	Health Technologists and Technicians, All Other	606	690	1.3%	Demand 17 / Supply 10	(7)

Associate Degree or Postsecondary Award

Annual Average Demand and Supply — All Occupations by Education

Demand: 680
Supply: 1,143 (990 Graduates, 154 UI Claims)

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 485 annual openings in sector)	Gap
1	Registered Nurses	6,621	7,642	1.4%	Demand 249 / Supply 139	(109)
2	Nursing Assistants	2,500	2,950	1.7%	Demand 87 / Supply 101	14
3	Licensed Practical and Licensed Vocational Nurses	1,565	1,770	1.2%	Demand 60 / Supply 155	95
4	Medical Assistants	1,118	1,395	2.2%	Demand 56 / Supply 405	349
5	Massage Therapists	1,272	1,798	3.5%	Demand 47 / Supply 12	(35)
6	Dental Assistants	937	1,095	1.6%	Demand 38 / Supply 56	18
7	Dental Hygienists	518	633	2.0%	Demand 28 / Supply 11	(17)
8	Medical Records and Health Information Technicians	518	590	1.3%	Demand 23 / Supply 65	42
9	Medical and Clinical Laboratory Technicians	246	285	1.5%	Demand 12 / Supply 15	3
10	Phlebotomists	259	312	1.9%	Demand 12 / Supply 176	164

Bachelor's Degree

Annual Average Demand and Supply — All Occupations by Education

Demand: 98
Supply: 124 (76 Graduates, 49 UI Claims)

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 83 annual openings in sector)	Gap
1	Medical and Health Services Managers	783	903	1.4%	Demand 34 / Supply 44	10
2	Social and Community Service Managers	412	516	2.3%	Demand 19 / Supply 69	50
3	Medical and Clinical Laboratory Technologists	373	429	1.4%	Demand 18 / Supply 0	(18)
4	Mental Health and Substance Abuse Social Workers	280	309	1.0%	Demand 9 / Supply 11	2

Master's Degree or Higher

Annual Average Demand and Supply — All Occupations by Education

Demand: 190
Supply: 28 (16 Graduates, 13 UI Claims)

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 38 annual openings in sector)	Gap
1	Physicians and Surgeons, All Other	751	842	1.2%	Demand 32 / Supply 0	(32)
2	Physical Therapists	539	646	1.8%	Demand 25 / Supply 1	(24)
3	Dentists, General	354	433	2.0%	Demand 17 / Supply 0	(17)
4	Mental Health Counselors	518	571	1.0%	Demand 16 / Supply 9	(8)
5	Physician Assistants	327	389	1.8%	Demand 14 / Supply 0	(14)
6	Family and General Practitioners	196	245	2.3%	Demand 11 / Supply 0	(11)
7	Occupational Therapists	341	407	1.8%	Demand 11 / Supply 1	(10)
8	Healthcare Social Workers	221	266	1.9%	Demand 10 / Supply 8	(2)

OVERVIEW

Employing more than 24,460 people in Pierce County, construction is the second-largest industry in Pierce County. Data indicate surpluses in the majority of construction occupations, but employers report difficulty recruiting enough workers to fill open positions. Demand for workers is not expected to ease: construction is one of the fastest-growing industries in the county, and employers anticipate retirements to further increase demand for workers as the workforce ages.
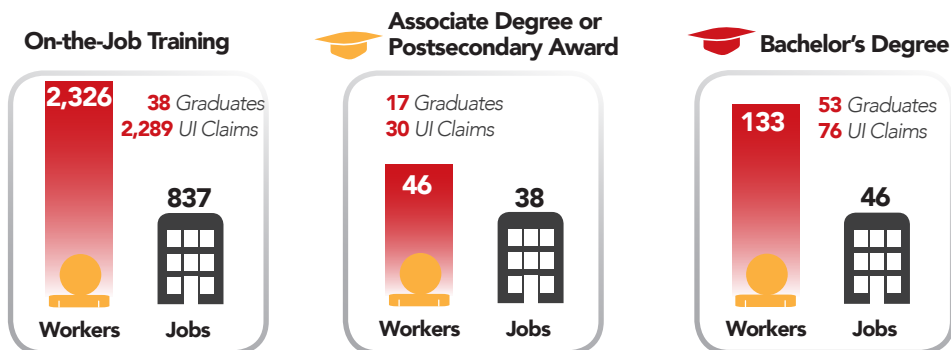
With an average annual wage of $60,899—nearly $3,000 more than the regional average wage— construction provides a viable career option regardless of education level. However, the construction industry lacks connections to high school students that otherwise would help them fill local vacancies. Students may go through high school without being exposed to opportunities in construction, finding it only after many years working low-paid retail or service jobs. Employers want to find new and increased ways to reach potential candidates sooner in their careers.
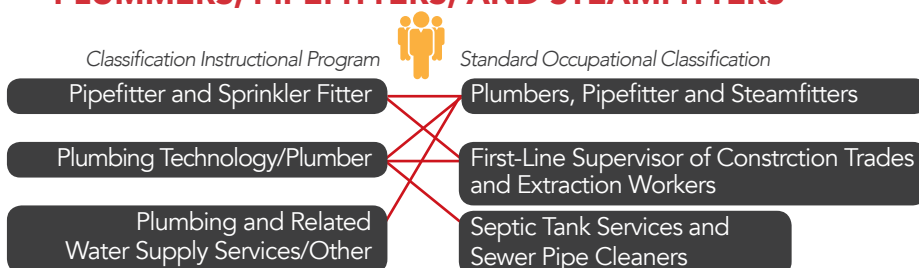
$ Median Annual Wage
$28,280 - $119,070

2018 - 2023
Projected Talent Supply
Unemployed: 2,394
Newly-Trained: 108

2018 - 2023 PROJECTIONS FOR THE
PIERCE COUNTY CONSTRUCTION TALENT PIPELINE[12]

On-the-Job Training

2,326
38 *Graduates*
2,289 *UI Claims*

837

Workers — Jobs

Associate Degree or Postsecondary Award

17 *Graduates*
30 *UI Claims*

46 — **38**

Workers — Jobs

Bachelor's Degree

133
53 *Graduates*
76 *UI Claims*

46

Workers — Jobs

This chart outlines the annual estimate of workers and job openings by education level in Pierce County.

MATCHES FOR GRADUATES QUALIFIED TO WORK AS
PLUMMERS, PIPEFITTERS, AND STEAMFITTERS[13]

Classification Instructional Program | *Standard Occupational Classification*

Pipefitter and Sprinkler Fitter — Plumbers, Pipefitter and Steamfitters

Plumbing Technology/Plumber — First-Line Supervisor of Constrction Trades and Extraction Workers

Plumbing and Related Water Supply Services/Other — Septic Tank Services and Sewer Pipe Cleaners

Qualifications and experience in one occupation may translate into opportunities in another. This is one way employers and employees manage talent surpluses and shortages.

Pierce County employs more than **24,460 construction workers**. As one of the fastest growing industries, the construction industry is a key area of focus within the county.
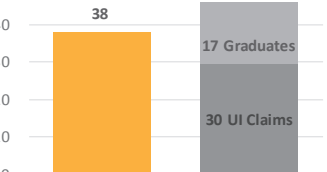
Construction Talent Pipeline
Pierce County

WORKFORCE central

On-the-Job Training

Annual Average Demand and Supply — All Occupations by Education

- Demand: 837
- Supply: 2,326 (38 Graduates, 2,289 UI Claims)

Scale: 0 - 497 annual openings in sector

#	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Demand	Supply	Gap
1	Carpenters	4,286	5,798	3.1%	157	414	256
2	Construction Laborers	2,963	4,105	3.3%	132	404	272
3	Electricians	1,772	2,425	3.2%	77	229	152
4	Painters, Construction and Maintenance	1,799	2,404	2.9%	70	118	49
5	First-Line Supervisors of Construction Trades and Extraction Workers	2,172	2,995	3.3%	69	86	16
6	Roofers	1,010	1,543	4.3%	62	137	75
7	Operating Engineers and Other Construction Equipment Operators	878	1,147	2.7%	34	232	198
8	Plumbers, Pipefitters, and Steamfitters	822	1,090	2.9%	28	103	74
9	Cement Masons and Concrete Finishers	511	770	4.2%	24	122	97
10	Electrical Power-Line Installers and Repairers	471	580	2.1%	23	14	(9)
11	Drywall and Ceiling Tile Installers	541	706	2.7%	17	64	47
12	Structural Iron and Steel Workers	223	333	4.1%	17	91	74
13	Telecommunications Line Installers and Repairers	331	447	3.0%	16	11	(6)
14	Security and Fire Alarm Systems Installers	246	342	3.3%	13	1	(13)
15	Fence Erectors	204	308	4.2%	13	7	(6)
16	Tapers	345	450	2.7%	11	12	1
17	Mobile Heavy Equipment Mechanics, Except Engines	548	618	1.2%	6	12	6
18	First-Line Supervisors of Mechanics, Installers, and Repairers	951	1,072	1.2%	6	3	(4)
19	Carpet Installers	219	277	2.4%	5	5	0
20	Insulation Workers, Floor, Ceiling, and Wall	128	170	2.9%	5	10	5

Associate Degree or Postsecondary Award

Annual Average Demand and Supply — All Occupations by Education

- Demand: 38
- Supply: 46 (17 Graduates, 30 UI Claims)

Scale: 0 - 50 annual openings in sector

#	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Demand	Supply	Gap
1	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	770	1,039	3.0%	31	42	11
2	Electrical and Electronics Drafters	82	114	3.3%	3	1	(2)
3	Architectural and Civil Drafters	186	219	1.6%	2	1	(2)
4	Audio and Video Equipment Technicians	61	81	2.9%	2	3	1
5	Mechanical Drafters	117	139	1.7%	1	0	(1)

Bachelor's Degree

Annual Average Demand and Supply — All Occupations by Education

- Demand: 133
- Supply: 129 (53 Graduates, 76 UI Claims)

Scale: 0 - 102 annual openings in sector

#	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Demand	Supply	Gap
1	Construction Managers	1,976	2,722	3.3%	85	84	(1)
2	Cost Estimators	664	967	3.8%	37	37	(0)
3	Computer Programmers	334	444	2.9%	7	2	(4)
4	Architects, Except Landscape and Naval	354	417	1.7%	3	1	(2)
5	Health and Safety Engineers, Except Mining Safety Engineers and	37	48	2.6%	2	5	3

OVERVIEW

Military and defense represents a key industry in the Pierce County economy. Not including the 33,000 active duty military personnel stationed at Joint Base Lewis-McChord, the industry employs about 12,460 workers, including more than 9,000 civilians employed on-base. Notably, Pierce County's defense industry received more than $490 million in Department of Defense contracts in 2015 alone.

Within the industry, JBLM provides a strong supply of talented workers, and programs that match transitioning military personnel with jobs seem to be effective. Commercial certification can pose a challenge to hiring, however, as highly skilled retired military personnel may not have adequate access to the necessary credentials.

While the majority of military and defense occupations show a good balance between supply and demand for workers, employers with defense contracts face difficulty finding candidates who can pass the rigorous background checks required for security clearances. Candidates must pass both criminal and financial background checks in order to be hired, and employers report losing about half of applicants through the process.
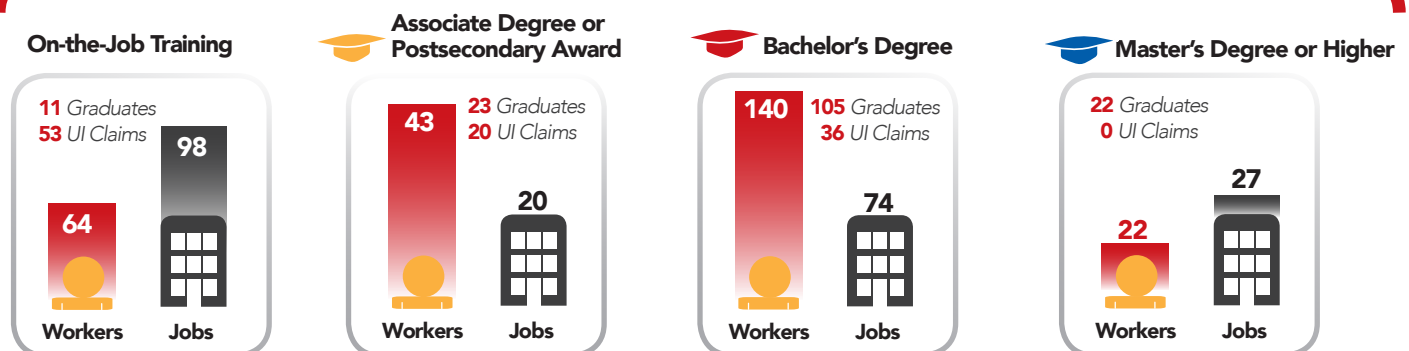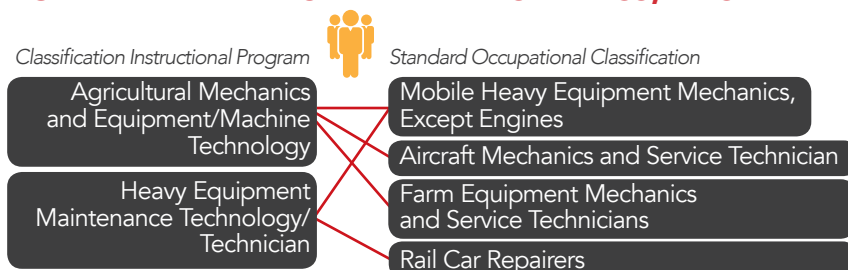
$ Median Annual Wage
$57,997 - $106,461

2018 - 2023
Projected Talent Supply
Unemployed: 109
Newly-Trained: 161

2018 - 2023 PROJECTIONS FOR THE
PIERCE COUNTY MILITARY & DEFENSE TALENT PIPELINE[12]

On-the-Job Training

11 *Graduates*
53 *UI Claims*
64 Workers
98 Jobs

Associate Degree or Postsecondary Award

23 *Graduates*
20 *UI Claims*
43 Workers
20 Jobs

Bachelor's Degree

105 *Graduates*
36 *UI Claims*
140 Workers
74 Jobs

Master's Degree or Higher

22 *Graduates*
0 *UI Claims*
22 Workers
27 Jobs

This chart outlines the annual estimate of workers and job openings by education level in Pierce County.

MATCHES FOR GRADUATES QUALIFIED TO WORK AS
MOBILE HEAVY EQUIPMENT MECHANICS, EXCEPT ENGINES[13]

Classification Instructional Program

Agricultural Mechanics and Equipment/Machine Technology

Heavy Equipment Maintenance Technology/Technician

Standard Occupational Classification

Mobile Heavy Equipment Mechanics, Except Engines

Aircraft Mechanics and Service Technician

Farm Equipment Mechanics and Service Technicians

Rail Car Repairers

JBLM provides a strong supply of qualified workers, but they many need help getting the right commercial certifications.

Qualifications and experience in one occupation may translate into opportunities in another. This is one way employers and employees manage talent surpluses and shortages.

Military & Defense Talent Pipeline
Pierce County

WORKFORCE central

On-the-Job Training

Annual Average Demand and Supply — All Occupations by Education

Demand: 98
Supply: 64 (11 Graduates, 53 UI Claims)

#	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 37 annual openings in sector)	Gap
1	Business Operations Specialists, All Other	2,335	2,567	1.0%	Demand 26 / Supply 5	(22)
2	Information and Record Clerks, All Other	791	816	0.3%	Demand 17 / Supply 0	(17)
3	Mobile Heavy Equipment Mechanics, Except Engines	548	618	1.2%	Demand 16 / Supply 31	15
4	Healthcare Support Workers, All Other	678	750	1.0%	Demand 9 / Supply 5	(5)
5	Procurement Clerks	191	192	0.1%	Demand 9 / Supply 4	(4)
6	Purchasing Agents, Except Wholesale, Retail, and Farm Products	485	544	1.2%	Demand 7 / Supply 4	(2)
7	Human Resources Assistants, Except Payroll and Timekeeping	350	370	0.6%	Demand 5 / Supply 0	(5)
8	Motor Vehicle Operators, All Other	160	184	1.4%	Demand 2 / Supply 2	0
9	Plant and System Operators, All Other	58	59	0.2%	Demand 1 / Supply 5	4

Associate Degree or Postsecondary Award

Annual Average Demand and Supply — All Occupations by Education

Demand: 20
Supply: 43 (23 Graduates, 20 UI Claims)

#	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 19 annual openings in sector)	Gap
1	Aircraft Mechanics and Service Technicians	303	307	0.1%	Demand 9 / Supply 16	7
2	Electrical and Electronics Repairers, Commercial and Industrial Equipment	171	194	1.3%	Demand 4 / Supply 3	(1)
3	Life, Physical, and Social Science Technicians, All Other	76	82	0.8%	Demand 3 / Supply 0	(3)
4	Air Traffic Controllers	45	44	-0.2%	Demand 2 / Supply 0	(2)

Bachelor's Degree

Annual Average Demand and Supply — All Occupations by Education

Demand: 74
Supply: 140 (105 Graduates, 36 UI Claims)

#	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 26 annual openings in sector)	Gap
1	Management Analysts	1,180	1,507	2.5%	Demand 22 / Supply 17	(5)
2	Computer Occupations, All Other	414	406	-0.2%	Demand 7 / Supply 14	7
3	Tax Examiners and Collectors, and Revenue Agents	297	324	0.9%	Demand 7 / Supply 3	(4)
4	Logisticians	476	476	0.0%	Demand 6 / Supply 12	5
5	Social Workers, All Other	291	319	0.9%	Demand 5 / Supply 9	3
6	Budget Analysts	147	144	-0.2%	Demand 5 / Supply 7	2
7	Teachers and Instructors, All Other	349	380	0.9%	Demand 4 / Supply 6	2
8	Occupational Health and Safety Specialists	240	263	0.9%	Demand 3 / Supply 3	(0)
9	Engineers, All Other	164	172	0.5%	Demand 3 / Supply 6	3
10	Social Scientists and Related Workers, All Other	130	125	-0.4%	Demand 3 / Supply 5	2

Master's Degree or Higher

Annual Average Demand and Supply — All Occupations by Education

Demand: 27
Supply: 22 (22 Graduates, UI Claims)

#	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 26 annual openings in sector)	Gap
1	Physicians and Surgeons, All Other	751	842	1.2%	Demand 13 / Supply 0	(13)
2	Psychologists, All Other	226	220	-0.3%	Demand 6 / Supply 22	16
3	Dentists, All Other Specialists	84	90	0.7%	Demand 3 / Supply 0	(3)
4	Health Diagnosing and Treating Practitioners, All Other	205	223	0.8%	Demand 3 / Supply 0	(3)

Transportation Warehousing & Logistics

OVERVIEW

The transportation, warehousing and logistics industry is highly concentrated in Pierce County, employing 12,000 workers and 14 percent of the statewide workforce for the industry. Though the data indicate a surplus of workers in most occupations within the industry, stakeholders report difficulty hiring and retaining qualified employees due to a lack of basic math and soft skills.

Pierce County employers in this industry compete for employees with companies in Seattle or King County that pay slightly higher wages. They also compete with other industries, such as construction and advanced manufacturing, for similarly qualified candidates.

Occupations within each specific segment of the transportation, warehousing and logistics industry require unique skills that are highly diverse across the industry. As an example, occupations in this industry include locomotive engineers, commercial airline pilots and warehouse managers. While most occupations within this industry require no post-secondary degree, employers report difficulty connecting with high school students and promoting the industry as a viable career path.
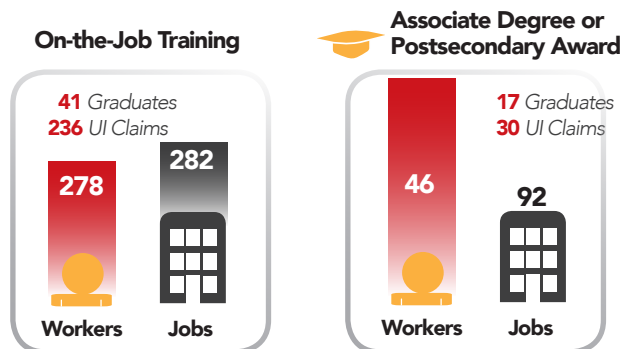
$ Median Annual Wage
$23,510 - $98,560
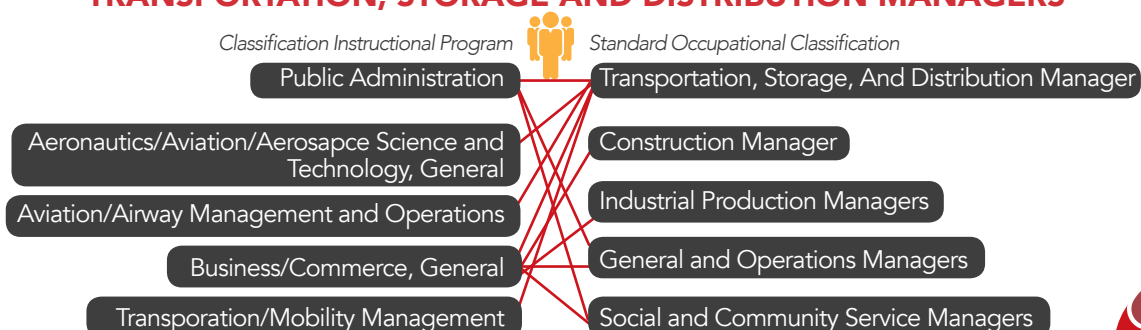
2018 - 2023
Projected Talent Supply
Unemployed: 438
Newly-Trained: 49

2018 - 2023 PROJECTIONS FOR THE
PIERCE COUNTY TRANSPORTATION, WAREHOUSING & LOGISTICS TALENT PIPELINE[12]

On-the-Job Training

41 Graduates
236 UI Claims

278 Workers
282 Jobs

Associate Degree or Postsecondary Award

17 Graduates
30 UI Claims

46 Workers
92 Jobs

The majority of technical skills required for jobs in this industry can be acquired through on-the-job training.

This chart outlines the annual estimate of workers and job openings by education level in Pierce County.

MATCHES FOR GRADUATES QUALIFIED TO WORK AS
TRANSPORTATION, STORAGE AND DISTRIBUTION MANAGERS[13]

Classification Instructional Program | Standard Occupational Classification

Public Administration — Transportation, Storage, And Distribution Manager

Aeronautics/Aviation/Aerosapce Science and Technology, General — Construction Manager

Aviation/Airway Management and Operations — Industrial Production Managers

Business/Commerce, General — General and Operations Managers

Transportation/Mobility Management — Social and Community Service Managers

Qualifications and experience in one occupation may translate into opportunities in another. This is one way employers and employees manage talent surpluses and shortages.
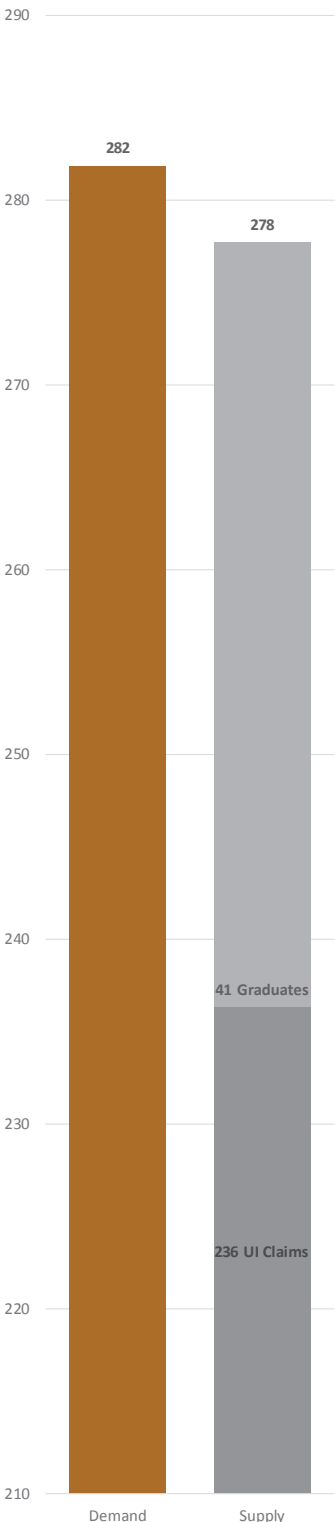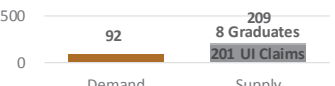
On-the-Job Training

Annual Average Demand and Supply
All Occupations by Education

282	278
Demand	Supply

41 Graduates
236 UI Claims

	Occupation (Ranked by Annual Openings (2018-2023))	Employment 2013	Employment 2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 83 annual openings in sector)		Gap
1	Laborers and Freight, Stock, and Material Movers, Hand	6,016	7,019	1.6%	Demand	69	(29)
					Supply	40	
2	Industrial Truck and Tractor Operators	2,102	2,387	1.3%	Demand	34	3
					Supply	37	
3	Packers and Packagers, Hand	1,821	2,199	1.9%	Demand	28	(14)
					Supply	14	
4	First-Line Supervisors of Transportation and Material-Moving	747	872	1.6%	Demand	15	(9)
					Supply	6	
5	Dispatchers, Except Police, Fire, and Ambulance	532	642	1.9%	Demand	15	(7)
					Supply	9	
6	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	563	653	1.5%	Demand	13	(6)
					Supply	8	
7	Industrial Machinery Mechanics	798	983	2.1%	Demand	12	(9)
					Supply	3	
8	Crane and Tower Operators	245	304	2.2%	Demand	11	1
					Supply	12	
9	Cargo and Freight Agents	227	279	2.1%	Demand	10	1
					Supply	12	
10	Light Truck or Delivery Services Drivers	1,842	2,108	1.4%	Demand	9	5
					Supply	14	
11	Material Moving Workers, All Other	209	251	1.8%	Demand	6	1
					Supply	8	
12	Transportation, Storage, and Distribution Managers	295	348	1.7%	Demand	6	29
					Supply	36	
13	Bus and Truck Mechanics and Diesel Engine Specialists	699	804	1.4%	Demand	6	16
					Supply	22	
14	Shipping, Receiving, and Traffic Clerks	1,419	1,631	1.4%	Demand	6	(1)
					Supply	5	
15	Production Workers, All Other	313	350	1.1%	Demand	6	21
					Supply	27	
16	Driver/Sales Workers	994	1,192	1.8%	Demand	6	(2)
					Supply	3	
17	Railroad Conductors and Yardmasters	109	110	0.1%	Demand	4	(4)
					Supply	0	
18	Motor Vehicle Operators, All Other	160	184	1.4%	Demand	4	1
					Supply	4	
19	Locomotive Engineers	128	130	0.2%	Demand	3	(3)
					Supply	0	
20	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	179	213	1.8%	Demand	3	(2)
					Supply	2	
21	Team Assemblers	705	805	1.3%	Demand	2	(2)
					Supply	0	
22	Rail Car Repairers	52	53	0.2%	Demand	2	(2)
					Supply	0	
23	Tank Car, Truck, and Ship Loaders	55	68	2.1%	Demand	2	(2)
					Supply	0	
24	Assemblers and Fabricators, All Other	317	396	2.3%	Demand	2	4
					Supply	6	
25	Machine Feeders and Offbearers	189	200	0.6%	Demand	1	(1)
					Supply	0	
26	Separating, Filtering, Clarifying, Precipitating, and Still Machine	59	75	2.4%	Demand	1	(1)
					Supply	0	
27	Commercial Pilots	36	39	0.8%	Demand	1	5
					Supply	6	
28	Millwrights	131	168	2.5%	Demand	1	2
					Supply	3	
29	Railroad Brake, Signal, and Switch Operators	30	30	0.0%	Demand	1	(1)
					Supply	0	
30	Signal and Track Switch Repairers	17	18	0.6%	Demand	1	(0)
					Supply	1	

Associate Degree or Postsecondary Award

Annual Average Demand and Supply
All Occupations by Education

92	209
Demand	Supply

8 Graduates
201 UI Claims

	Occupation (Ranked by Annual Openings (2018-2023))	Employment 2013	Employment 2023	CAGR 2013-2023	Annual Demand and Supply, 2018-2023 (Scale: 0 - 244 annual openings in sector)		Gap
1	Heavy and Tractor-Trailer Truck Drivers	4,843	5,609	1.5%	Demand	89	115
					Supply	204	
2	Aircraft Mechanics and Service Technicians	303	307	0.1%	Demand	3	2
					Supply	6	

ICT & Cybersecurity

OVERVIEW

Though small compared to King County, the ICT and cybersecurity industry has a growing presence in Pierce County. Employers find it easy to fill entry-level positions but difficult to fill mid- to senior-level positions. Additionally, employers note that educational programs with similar names are not always consistent in learning outcomes or rigor, confusing students, jobseekers and hiring managers.

Cybersecurity occupations, and information security analysts in particular, are projected to see the strongest growth through 2023. As more businesses put their information online, demand is increasing for workers with the skills to protect their information. It can be difficult to find qualified applicants, however, because cybersecurity jobs require a high capacity for critical thinking to counter ever-evolving security threats.

Wages in ICT and cybersecurity tend are higher than the regional average. Local employers compete with King County employers who offer higher pay and "brand name" opportunities for advancement. Additionally, employers face increasing competition from virtually all other industries as information technology grows more integral to the modern economy.
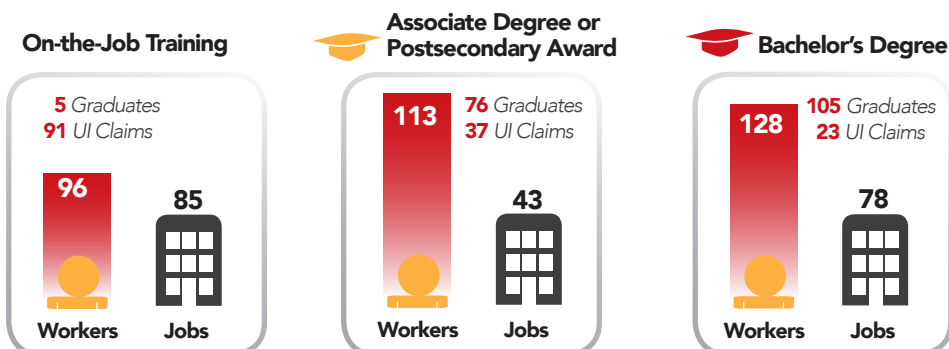
$ Median Annual Wage
$26,870 - $143,000

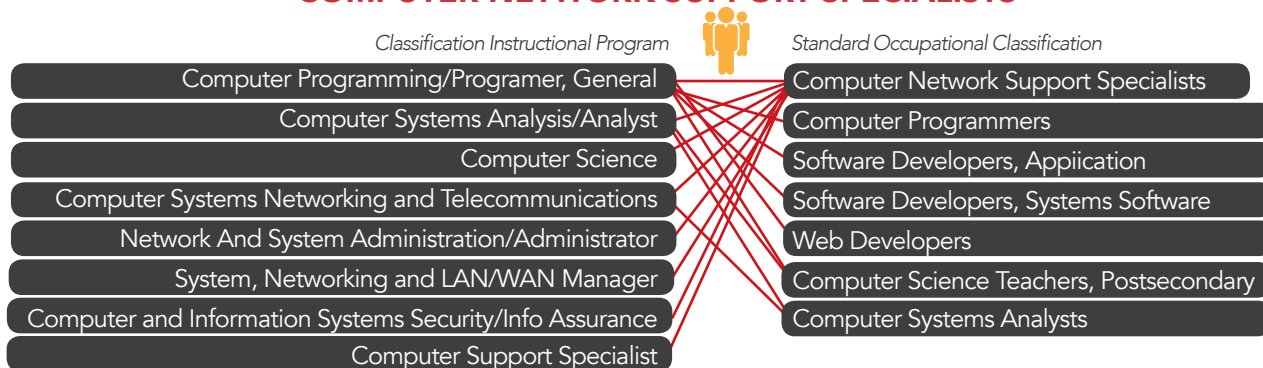**2018 - 2023**
Projected Talent Supply
Unemployed: 151
Newly-Trained: 186

PIERCE COUNTY ICT & CYBERSECURITY TALENT PIPELINE[12]

On-the-Job Training

5 *Graduates*
91 *UI Claims*

96 Workers
85 Jobs

Associate Degree or Postsecondary Award

113
76 *Graduates*
37 *UI Claims*

Workers
43 Jobs

Bachelor's Degree

128
105 *Graduates*
23 *UI Claims*

Workers
78 Jobs

This chart outlines the annual estimate of workers and job openings by education level in Pierce County.

MATCHES FOR GRADUATES QUALIFIED TO WORK AS
COMPUTER NETWORK SUPPORT SPECIALISTS[13]

Classification Instructional Program

Standard Occupational Classification

Classification Instructional Program	Standard Occupational Classification
Computer Programming/Programer, General	Computer Network Support Specialists
Computer Systems Analysis/Analyst	Computer Programmers
Computer Science	Software Developers, Appiication
Computer Systems Networking and Telecommunications	Software Developers, Systems Software
Network And System Administration/Administrator	Web Developers
System, Networking and LAN/WAN Manager	Computer Science Teachers, Postsecondary
Computer and Information Systems Security/Info Assurance	Computer Systems Analysts
Computer Support Specialist	

Qualifications and experience in one occupation may translate into opportunities in another. This is one way employers and employees manage talent surpluses and shortages.

ICT & Cybersecurity Talent Pipeline
Pierce County

WORKFORCE central

On-the-Job Training

Annual Average Demand and Supply — All Occupations by Education

- Demand: 85
- Supply: 96 (5 Graduates, 91 UI Claims)

Chart scale: 78–98

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Demand	Supply	Gap
1	Customer Service Representatives	3,904	4,903	2.3%	43	50	7
2	Sales Representatives, Services, All Other	1,302	1,628	2.3%	10	22	12
3	Computer User Support Specialists	774	992	2.5%	8	1	(7)
4	Bill and Account Collectors	257	322	2.3%	5	12	7
5	Telemarketers	154	283	6.3%	5	3	(2)
6	Computer, Automated Teller, and Office Machine Repairers	171	209	2.0%	4	2	(2)
7	Order Clerks	524	654	2.2%	4	1	(3)
8	Telephone Operators	37	51	3.3%	3	0	(3)
9	First-Line Supervisors of Non-Retail Sales Workers	582	687	1.7%	2	1	(1)

Scale: 0 - 60 annual openings in sector

Associate Degree or Postsecondary Award

Annual Average Demand and Supply — All Occupations by Education

- Demand: 43
- Supply: 113 (76 Graduates, 37 UI Claims)

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Demand	Supply	Gap
1	Medical Transcriptionists	357	448	2.3%	11	4	(7)
2	Telecommunications Equipment Installers and Repairers, Except Line	380	439	1.5%	9	29	20
3	Web Developers	308	409	2.9%	8	9	1
4	Computer Network Support Specialists	242	288	1.8%	7	59	51
5	Medical Equipment Repairers	242	292	1.9%	5	2	(3)

Scale: 0 - 70 annual openings in sector

Bachelor's Degree

Annual Average Demand and Supply — All Occupations by Education

- Demand: 78
- Supply: 128 (105 Graduates, 23 UI Claims)

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Demand	Supply	Gap
1	Software Developers, Applications	721	1,004	3.4%	29	2	(26)
2	Network and Computer Systems Administrators	428	557	2.7%	6	10	4
3	Computer Hardware Engineers	161	153	-0.5%	6	4	(2)
4	Computer and Information Systems Managers	294	356	1.9%	5	36	31
5	Statistical Assistants	132	163	2.1%	4	20	15
6	Computer Programmers	334	444	2.9%	4	2	(3)
7	Information Security Analysts	181	257	3.6%	4	12	8
8	Computer Systems Analysts	432	533	2.1%	4	7	3
9	Mechanical Engineers	227	251	1.0%	4	3	(0)
10	Software Developers, Systems Software	204	219	0.7%	3	2	(1)
11	Architectural and Engineering Managers	215	253	1.6%	2	1	(2)
12	Electronics Engineers, Except Computer	72	77	0.7%	2	0	(1)
13	Computer Network Architects	89	108	2.0%	1	27	25
14	Sales Engineers	62	72	1.5%	1	0	(1)
15	Electrical Engineers	165	187	1.3%	1	1	(0)
16	Industrial Engineers	232	241	0.4%	1	0	(1)

Scale: 0 - 44 annual openings in sector

OVERVIEW

Pierce County is part of a four-county region with a thriving advanced manufacturing industry, including aerospace, computer equipment and ship building. Although employers report having plenty of applicants for open positions, there is a high dropout rate among these applicants. Basic math and soft skills seem to be the biggest obstacle to finding qualified candidates.

As a whole, the industry would benefit from assistance in establishing stronger relationships with educational institutions that can supply qualified graduates. While many employers willingly train employees internally, they risk losing their investment when the trained worker leaves for other jobs either within the industry or in competing industries like construction.

Employers find online job boards difficult to work with and inefficient in producing qualified applicants for their open positions. They prefer working directly with workforce programs that recruit candidates and provide training in soft skills, language skills and GED attainment. Pierce County employers also benefit by having access to qualified transitioning military and military families from JBLM.
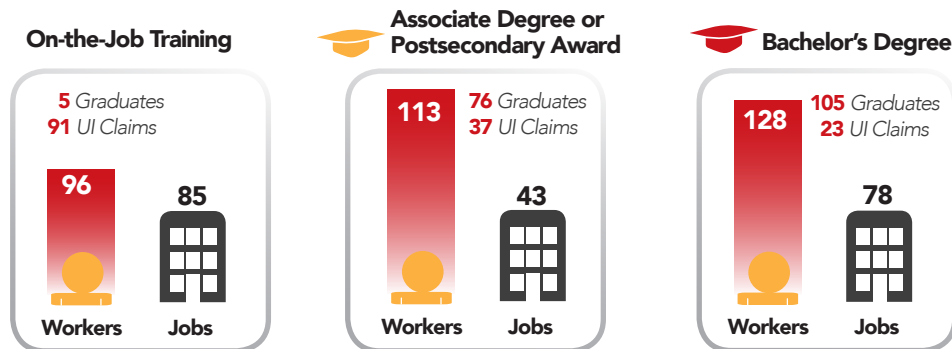
$ Median Annual Wage
$23,510 - $143,070

2018 - 2023
Projected Talent Supply
Unemployed: 241
Newly-Trained: 74

2018 - 2023 PROJECTIONS FOR THE
PIERCE COUNTY ADVANCED MANUFACTURING TALENT PIPELINE[12]

On-the-Job Training

5 Graduates
91 UI Claims

96
85
Workers — Jobs

Associate Degree or Postsecondary Award

113
76 Graduates
37 UI Claims

43
Workers — Jobs

Bachelor's Degree

128
105 Graduates
23 UI Claims

78
Workers — Jobs

This chart outlines the annual estimate of workers and job openings by education level in Pierce County.

MATCHES FOR GRADUATES QUALIFIED TO WORK AS
INDUSTRIAL PRODUCTION MANAGERS[13]

Classification Instructional Program   *Standard Occupational Classification*

Classification Instructional Program	Standard Occupational Classification
Industrial Engineering	Industrial Production Managers
Engineering/Industrial Management	Architectural and Engineering Managers
Business/Commerce, General	Industrial Engineers
Business Administration and Management, General	Engineering Teachers, Postsecondary
Logistics, Materials, and Supply Chain Management	Industrial Engineering Technicians
Operations Management and Supervision	Business Teachers, Postsecondary

Qualifications and experience in one occupation may translate into opportunities in another. This is one way employers and employees manage talent surpluses and shortages.

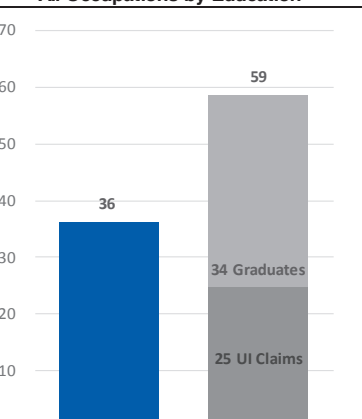# Advanced Manufacturing Talent Pipeline

On-the-Job Training

Annual Average Demand and Supply — All Occupations by Education

Demand: 79
Supply: 224 (35 Graduates, 189 UI Claims)

Scale (vertical axis): 0, 50, 100, 150, 200, 250

Annual Demand and Supply, 2018-2023 — Scale: 0 - 39 annual openings in sector

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Demand	Supply	Gap
1	Machinists	649	677	0.4%	11	27	16
2	Inspectors, Testers, Sorters, Samplers, and Weighers	783	849	0.8%	9	13	3
3	Industrial Machinery Mechanics	798	983	2.1%	7	2	(5)
4	Ophthalmic Laboratory Technicians	112	124	1.0%	6	0	(6)
5	Petroleum Pump System Operators, Refinery Operators, and Gaugers	89	99	1.1%	5	0	(5)
6	Structural Metal Fabricators and Fitters	170	209	2.1%	4	2	(2)
7	Team Assemblers	705	805	1.3%	4	0	(4)
8	Computer-Controlled Machine Tool Operators, Metal and Plastic	300	261	-1.4%	4	21	16
9	Welders, Cutters, Solderers, and Brazers	391	456	1.5%	4	28	24
10	Grinding and Polishing Workers, Hand	159	149	-0.6%	3	5	2
11	Dental Laboratory Technicians	64	69	0.8%	3	4	2
12	Production, Planning, and Expediting Clerks	491	596	2.0%	3	4	1
13	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	443	395	-1.1%	2	6	4
14	Helpers--Production Workers	510	572	1.2%	2	33	31
15	Assemblers and Fabricators, All Other	317	396	2.3%	2	6	5
16	Purchasing Agents, Except Wholesale, Retail, and Farm Products	485	544	1.2%	2	1	(1)
17	Production Workers, All Other	313	350	1.1%	2	7	6

Associate Degree or Postsecondary Award

Annual Average Demand and Supply — All Occupations by Education

Demand: 9
Supply: 33 (5 Graduates, 27 UI Claims)

Scale (vertical axis): 0, 10, 20, 30, 40

Annual Demand and Supply, 2018-2023 — Scale: 0 - 17 annual openings in sector

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Demand	Supply	Gap
1	First-Line Supervisors of Production and Operating Workers	982	1,080	1.0%	5	14	9
2	Electrical and Electronics Engineering Technicians	202	209	0.3%	2	8	6
3	Mechanical Drafters	117	139	1.7%	1	0	(1)
4	Electric Motor, Power Tool, and Related Repairers	84	82	-0.2%	0	2	2

Bachelor's Degree

Annual Average Demand and Supply — All Occupations by Education

Demand: 36
Supply: 59 (34 Graduates, 25 UI Claims)

Scale (vertical axis): 0, 10, 20, 30, 40, 50, 60, 70

Annual Demand and Supply, 2018-2023 — Scale: 0 - 16 annual openings in sector

	Occupation (Ranked by Annual Openings 2018-2023)	Employment 2013	Employment 2023	CAGR 2013-2023	Demand	Supply	Gap
1	Computer Hardware Engineers	161	153	-0.5%	6	4	(2)
2	Industrial Engineers	232	241	0.4%	6	0	(6)
3	Mechanical Engineers	227	251	1.0%	6	5	(0)
4	Software Developers, Systems Software	204	219	0.7%	3	2	(1)
5	Architectural and Engineering Managers	215	253	1.6%	3	1	(2)
6	Computer and Information Systems Managers	294	356	1.9%	2	13	12
7	Electronics Engineers, Except Computer	72	77	0.7%	2	0	(1)
8	Logisticians	476	476	0.0%	2	3	1
9	Industrial Production Managers	210	227	0.8%	2	11	10

Summary

In addition to providing data and analyses on each of the six major industries in Pierce County, the reports outline recommendations on how to improve the overall workforce development network. WorkForce Central and its partners throughout the county can use the recommendations to strengthen the skills of the local workforce, support employers and grow the economy countywide.

The reports draw from data about unemployment insurance (UI) claimants in demonstrating the availability of workers in each sector, though stakeholder interviews indicate UI claimants are often unqualified for the positions available. Developing systems to assess the skillsets of UI claimants and rehabilitate them to quickly return to the workforce would benefit workers and employers alike. Because soft skills are cited as the primary skills deficit among applicants across every sector, the workforce development system may consider building strategies to educate the public about the importance of strengthening soft skills.

Three of the six sectors—construction, advanced manufacturing, and transportation, warehousing and logistics—suffer from insufficient connections to high school talent. Accordingly, the reports recommend increasing the visibility of career paths in these sectors throughout the K-12 system, as well as establishing and/or continuing career fairs targeted to high school students. Career fairs not only introduce youth to career paths in these sectors, but also have the potential to reach their parents and a broader population who may qualify for available jobs.

More broadly, marketing the benefits of "working where you live" may increase Pierce County employers' ability to fill their open positions in light of the surplus talent here. A public awareness campaign could highlight the cost of commuting in terms of lost time, money and quality of life. Coupled with efforts to market the attractions of Pierce County more generally, employers may find it easier to fill their openings here. Several organizations within Pierce County serve to market the area, and the workforce system may find synergies by increasing those partnerships.

Finally, the reports stress the inefficiency of online recruitment tools. Employers cite them as frustrating and often unproductive in finding the right candidates to fill a vacancy. More often, employers are able to find the talent they need by working directly with the workforce development system: through programs at educational institutions, through agencies like WorkForce Central, or by working directly with other worker training programs. Fostering connections between employers and workforce organizations, and making sure applicants can easily access these organizations, increases the efficiency of the entire workforce system.

The recommendations summarized here represent just a few overarching themes from the sector reports. Each industry-specific report also lays out recommendations targeted to the sector. In the coming months, WorkForce Central and its partners across the workforce development network can review the recommendations and build upon them in formulating strategies to address the needs of Pierce County's economy.

To learn more visit **www.workforce-central.org/regional-strategies/data-2016.**

Sources & Resources

[1] Washington State Office of Financial Management, 2016; Community Attributes Inc., 2016.

[2] American Community Survey 2014 5-Year Estimates, 2016; Community Attributes Inc., 2016.

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Full Reports

To learn more about each industry click on these links:

Health Care Industry Skills Gap Analysis & Sector Strategies Report

Construction Industry Skills Gap Analysis & Sector Strategies Report

Advanced Manufacturing Industry Skills Gap Analysis & Sector Strategies Report

Transportation Industry Skills Gap Analysis & Sector Strategies Report

ICT & Cybersecurity Industry Skills Gap Analysis & Sector Strategies Report

Military & Defense Industry Skills Gap Analysis & Sector Strategies Report

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