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REGIONAL LABOR MARKET ASSESSMENT FAR NORTH REGION



January 2019 Update

Prepared by:
The North/Far North Center of Excellence
and Compass Policy Strategies



COMPASS
POLICY STRATEGIES

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INTRODUCTION

This report prepared by the North/Far North Center of Excellence (COE) focuses on employment levels, occupational demand projections, and wages for middle-skill occupations, those occupations which are well suited to community college education because they require some education or training, but less than a bachelor's degree. The report also includes trends in community college awards and student headcounts related to the major occupational groups selected for this study's analysis.



The purpose of the report is to serve as a reference for regional governance efforts that involve sector- and cluster-based initiatives, through which regional stakeholders collaborate on developing strategies and programs. The following sections offer findings that can help identify and inform educational and training opportunities. Furthermore, this report can serve as a touchstone for program development strategies and planning for Strong Workforce Program (SWP) investments. State legislation calls for a regional planning process that identifies priorities for SWP investments based on labor market data.

DATA & METHODOLOGY: HOW TO USE THE REPORT

To facilitate its use as a general reference, this report is organized according to the 23 major occupational groups in the Standard Occupational Classification (SOC) System. The major groups contain occupations that are not industry specific and that may occur in several different industries. Individual occupations are differentiated by skills, tasks, and education and training requirements. The report only includes the major occupational groups, of which there are 20, that met the occupational selection criteria.

The data represents an estimate of the size and performance of occupational employment. The COE uses a "middle-skill" definition and criteria to narrow the universe of occupations for analysis in the report. For each occupational category, award data is presented related to education and training programs offered by community colleges in the region. This data was identified using Taxonomy of Programs (TOP) codes. The report does not include private training providers or other educational program data.

A comparison between occupational demand and educational program supply is not an absolute measure of a shortage or oversupply of workers in the region, but can be used as an approximation to indicate unmet workforce demand to assist with program planning. This report's findings shed light on the following questions, which can be useful when determining the need for workforce investments:

- Which occupations and major occupational groups display significant employment, high growth, and substantial job openings?
- Are the programs currently offered by community colleges meeting demand?
- Does the data analysis indicate areas for further investigation related to program investment?

The first section of the report presents an overview of the findings, including the broader employment picture for the Far North Region, including the breakdown of below-middle-skill, middle-skill, and above-middle-skill jobs. There is an overview of the major occupational groups by total current employment, projected job growth, annual openings, and wages over the next five years. The following sections of the report present detailed findings on individual occupations within the major groups and data on corresponding community college programs, including a three-year average of awards.

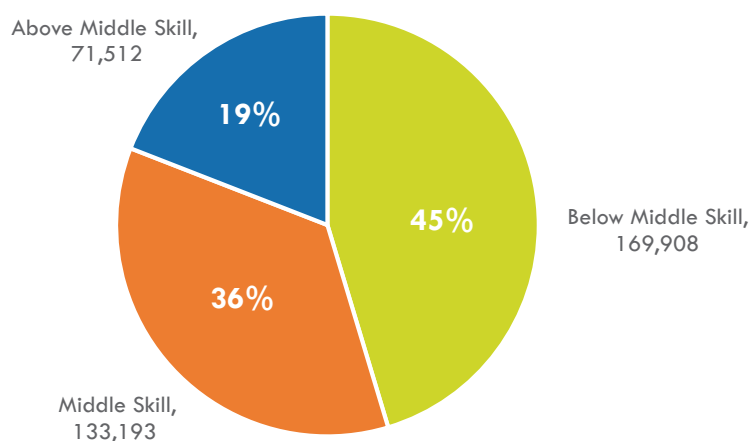
The Far North Region encompasses 15 counties: Butte, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama, and Trinity. Seven community colleges serve this geography: Butte College, Feather River College, Lassen College, Mendocino College, College of the Redwoods, Shasta College, and College of the Siskiyou.

For more specifics on how the study was conducted, please refer to Appendix A: Methodology & Implications for Analysis.

OVERVIEW OF OCCUPATIONAL FINDINGS BY SKILL LEVEL

Middle-skill jobs are a critical part of the Far North economy, accounting for 133,000 jobs, 36 percent of all jobs in 2017 (Exhibit 1). Nearly half of all occupational employment in the Far North Region, 45 percent, the equivalent of 170,000 jobs, consists of below-middle-skill jobs, which require little or no education or training. Above-middle-skill jobs account for about a fifth of employment. These jobs require at least a bachelor's degree for entry-level positions.

Exhibit 1. Employment by skill level in the Far North Region, 2017¹

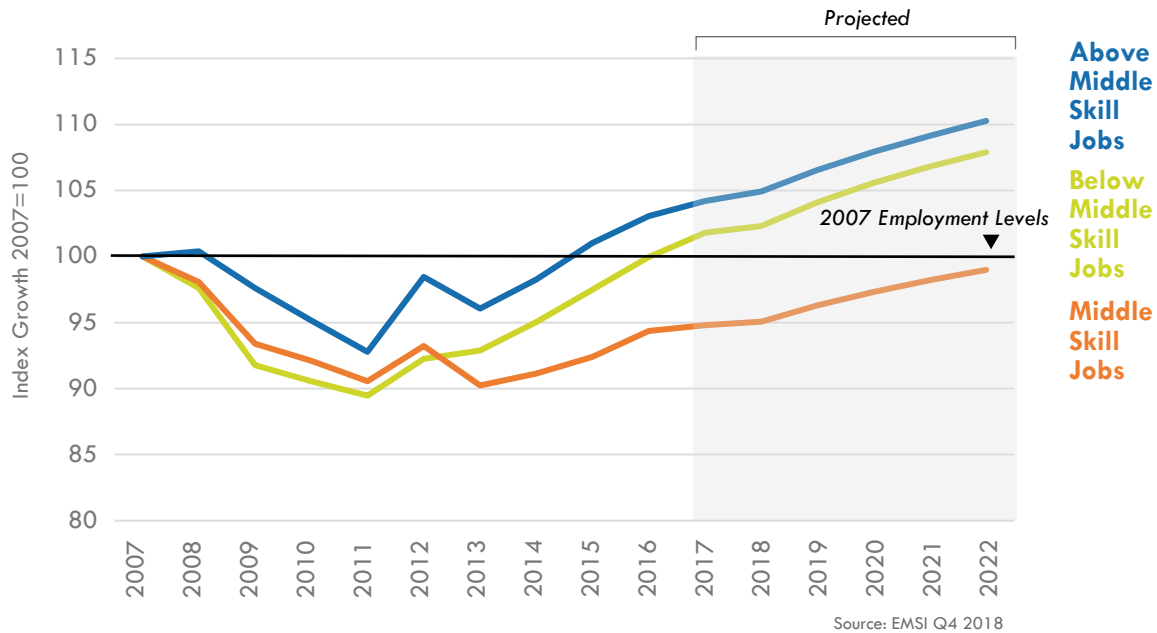


Between 2013 and 2017, total employment in the Far North Region increased 7.7 percent, to 374,600 jobs. During the same period, the number of middle-skill jobs increased by 5 percent but trailed other skill-level employment trends (Exhibit 2).



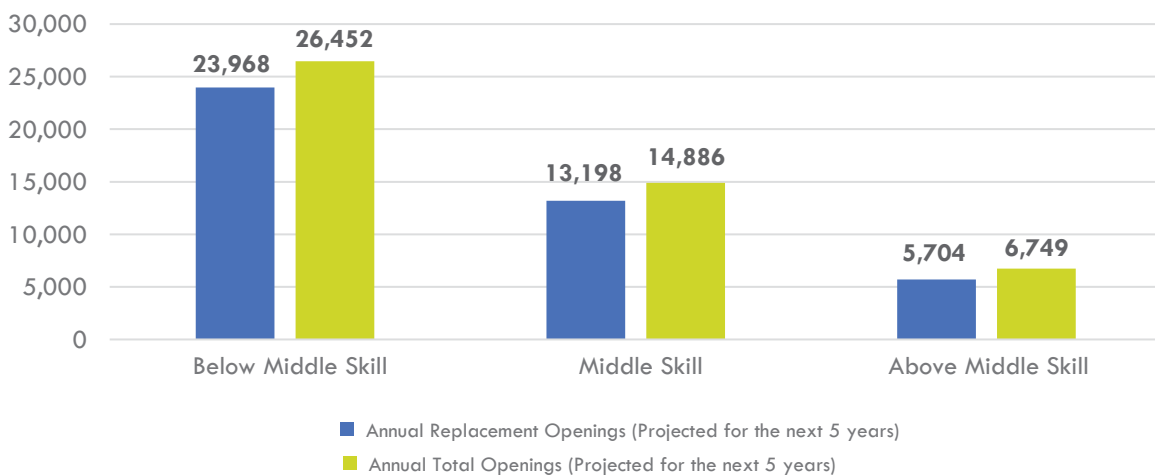
¹ Source: EMSI Q4 2018 Data Set, accessed 12/18/2018. Skill-Level Crosswalk from Northern California Center of Excellence, 2018. Source data is for this chart and others in this report as well.

Exhibit 2. Indexed historical and projected growth in employment by skill level, Far North Region



There will be thousands of job openings at all skill levels over the next five years. The greatest number of openings will be for below-middle-skill jobs, 26,452 total openings, followed by middle-skill jobs, 14,886 total openings (Exhibit 3). For each skill level, the amount of job openings projected annually over the next five years reflect employment totals, projected growth, and replacements needed due to retirements and separations.

Exhibit 3. Projected annual job openings by skill level, Far North Region, 2017-2022

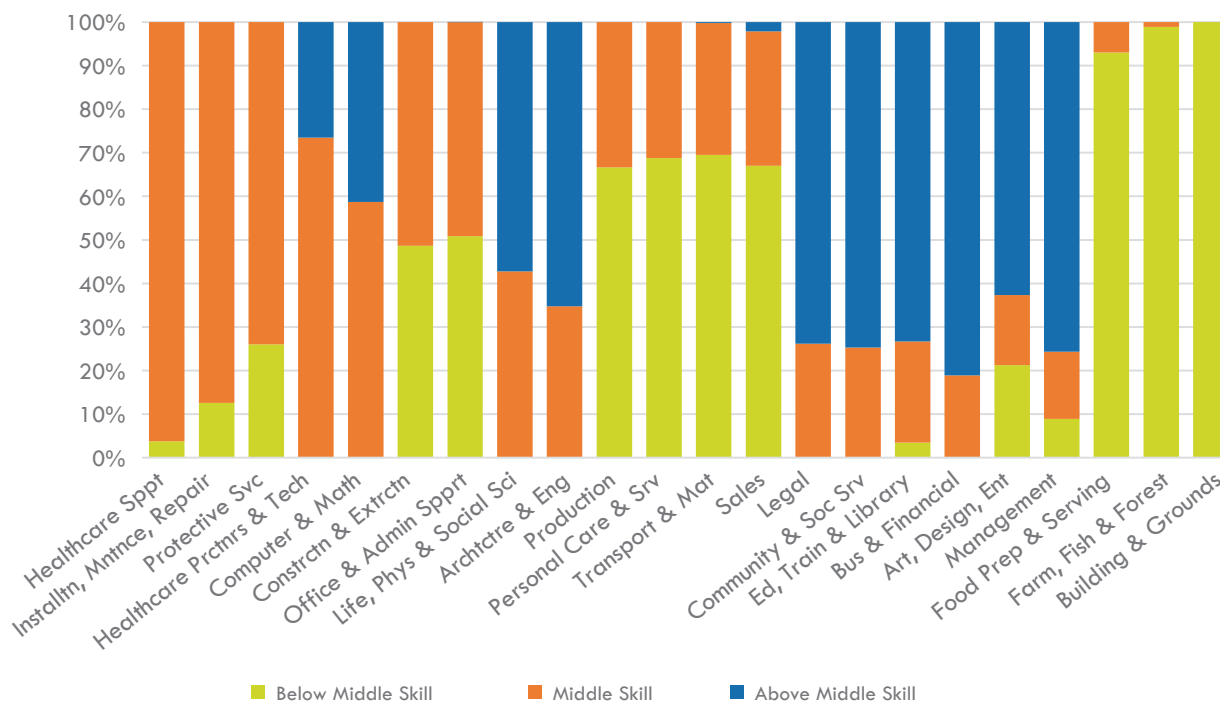


OVERVIEW OF OCCUPATIONAL GROUP EMPLOYMENT

The major occupational groups vary substantially with respect to the share of occupational employment for each skill level. In the Far North Region, for the baseline year 2017, three occupational groups had the highest share of middle-skill jobs: healthcare support; installation, maintenance, and repair; and protective service (Exhibit 4).

Three occupational groups are majority below-middle-skill jobs in the region: food preparation and serving; farming, fishing, and forestry; and building and grounds cleaning maintenance. (Food preparation and serving is included in the detailed analysis in this report, but the other two categories are not included.)

Exhibit 4. Percentage of middle-skill jobs in each occupational group, Far North Region, 2017



The major occupational group with the most middle-skill jobs in the Far North Region is office and administrative support, which had more than 24,600 middle skill jobs in 2017 (Exhibit 5). Healthcare practitioners and technical had nearly 15,000 jobs, and employment totaled nearly 13,000 jobs in installation, maintenance, and repair.

Office and administrative support is expected to offer the greatest number of annual openings, 2,818, followed by installation, maintenance and repair, 1,374 annual openings. Projections show sales and related will have 1,364 annual openings, nearly the same amount as healthcare support.

The highest median wage is offered by protective service, \$36.66/hour. The second highest median wage is offered by healthcare practitioners and technical, \$34.50/hour.

➤ Key Findings

Major groups with the most middle-skill jobs:

1. Office & Administrative Support
2. Healthcare Practitioners & Technical
3. Installation, Maintenance & Repair

Major groups with the most annual openings:

1. Office & Administrative Support
2. Installation, Maintenance & Repair
3. Sales and Related
4. Healthcare Support

Major groups with the highest paying jobs:

1. Protective Service
2. Healthcare Practitioners & Technical
3. Business & Financial Operations



Exhibit 5. Five-year occupational projections for middle-skill jobs by major group, Far North Region, 2017-2022

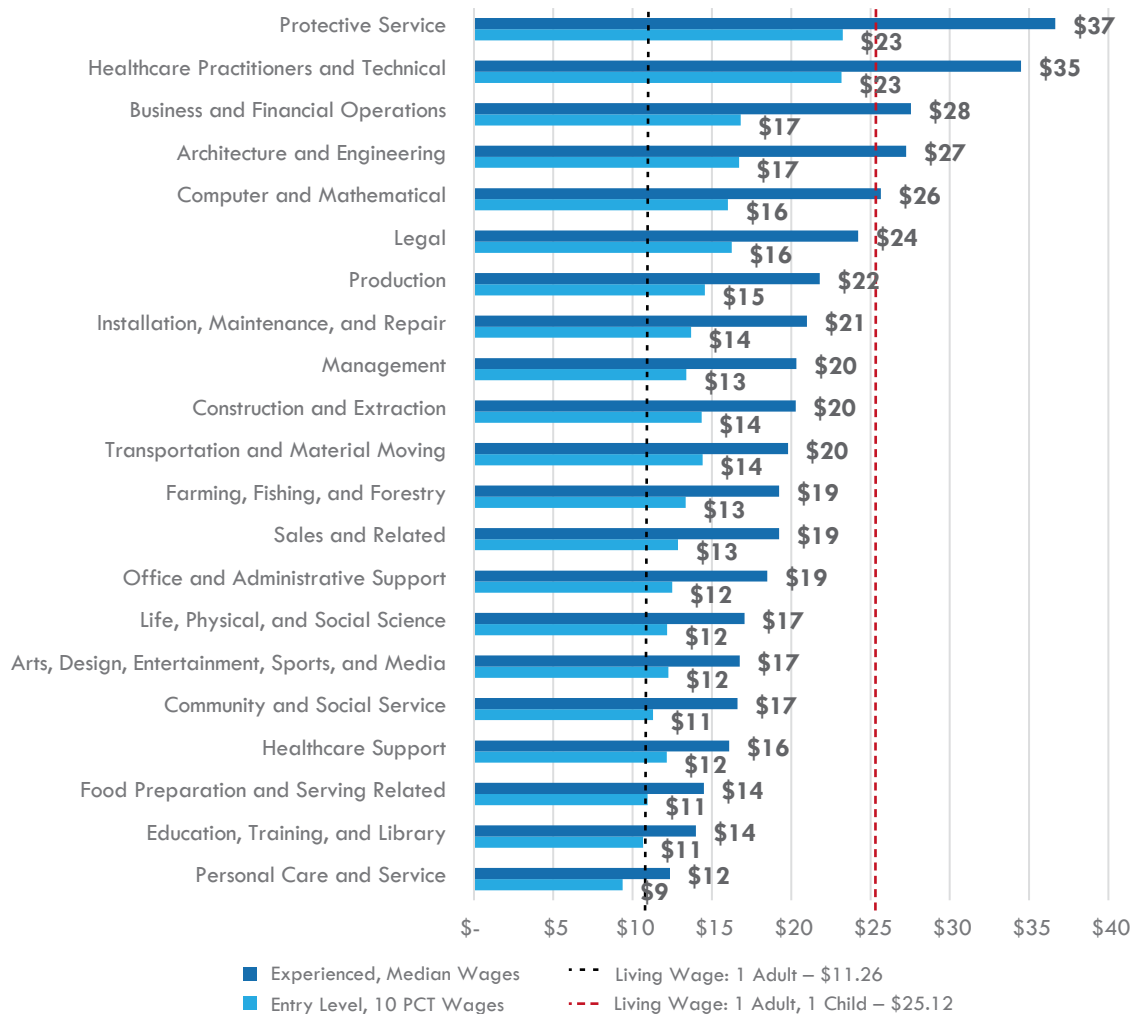
Occupational Group*	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings	Median Wage
Office and Administrative Support (22)	24,602	235	1%	13,322	2,818	\$18.50
Healthcare Practitioners and Technical (25)	14,977	1,317	9%	4,381	1,155	\$34.50
Installation, Maintenance, and Repair (39)	12,860	644	5%	6,071	1,374	\$20.98
Sales and Related (10)	11,477	606	5%	6,020	1,363	\$19.24
Construction and Extraction (20)	9,312	426	5%	4,682	1,081	\$20.28
Healthcare Support (15)	8,709	992	11%	5,064	1,236	\$16.10
Personal Care and Service (11)	8,190	(133)	(2%)	5,711	1,201	\$12.35
Protective Service (13)	6,944	189	3%	2,418	539	\$36.66
Education, Training, and Library (2)	6,620	226	3%	3,347	738	\$14.00
Transportation and Material Moving (16)	6,021	185	3%	3,242	716	\$19.80
Production (29)	5,064	363	7%	2,620	615	\$21.80
Management (5)	3,195	85	3%	1,185	270	\$20.34
Community and Social Service (2)	2,689	253	9%	1,616	376	\$16.62
Life, Physical, and Social Science (9)	2,505	20	1%	1,425	302	\$17.05
Computer and Mathematical (6)	2,313	143	6%	811	195	\$25.65
Food Preparation and Serving Related (2)	2,270	115	5%	1,588	342	\$14.49
Business and Financial Operations (9)	2,119	59	3%	898	204	\$27.55
Architecture and Engineering (13)	1,153	76	7%	506	119	\$27.25
Arts, Design, Entertainment, Sports, and Media (10)	759	35	5%	330	76	\$16.75
Legal (4)	505	33	6%	242	56	\$24.22
Farming, Fishing, and Forestry (1)	154	6	4%	102	22	\$19.24
Building and Grounds Cleaning and Maintenance (0)	0	0	N/A	0	N/A	N/A
TOTAL	133,193	5,872	4%	65,991	14,886	\$21.36

*Number of occupations in each group are shown in parentheses.

The wage range for middle-skill jobs is dramatic, demonstrating the importance of career fields for training and education (Exhibit 6). At the upper end, protective service (\$37 per hour), healthcare practitioners and technical (\$35 per hour) and business and financial operations (\$28 per hour) have the highest median wages for middle-skill jobs. Personal care and service (\$12 per hour), education and training (\$14 per hour), and food preparation and serving related (\$14 per hour) have the lowest median wages of the occupational groups.

According to Massachusetts Institute of Technology’s (MIT’s) living wage calculator, the Living Wage for one adult (with no dependents) in the Far North Region is \$11.26 per hour (assuming full-time work) in 2017. The living wage for a one-adult, one-child household is \$25.12 per hour. While median earnings in middle-skill jobs exceed the living wage for one adult in most occupational groups, only the top five occupational groups rise above the living wage for one adult and one child.

Exhibit 6. Comparison of entry-level and experienced wages with regional living wage, Far North Region, 2017²



² Living wages are sourced from MIT’s Living Wage Calculator. A living wage is a geographically-based estimate of the wage required to cover the cost of basic needs for families. It is higher than the federal poverty threshold.

WHAT IS THE LABOR MARKET DEMAND FOR OCCUPATIONS IN EACH OCCUPATIONAL GROUP?



➤ Key Findings

- Architecture and engineering is a small category, with just over 1,100 middle-skill jobs.
- This major occupational group is projected to grow by 7 percent in the next five years and will have 120 annual openings.
- Employment within this occupational group is solidly middle skill. All occupations require an associate degree for entry-level positions.
- Technician and drafter occupations have healthy projected growth, but none of the occupations is projected to have a windfall of annual openings.
- Median wages are strong, ranging from \$23 per hour to \$32 per hour.
- The three-year average annual student headcount is nearly 3,000 in related programs. On average, nearly 140 awards are conferred each year in related programs.
- Student headcounts in engineering technology-related programs are robust and annual awards are roughly in line with estimated annual openings.

Exhibit 7. Employment and projected occupational demand for architecture and engineering occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
17-3022	Civil Engineering Technicians	284	14	5%	123	28
17-3011	Architectural and Civil Drafters	201	12	6%	86	20
17-3031	Surveying and Mapping Technicians	174	10	6%	92	21
17-3029	Engineering Technicians, Except Drafters, All Other	160	4	3%	68	15
17-3023	Electrical and Electronics Engineering Technicians	130	13	10%	57	14
17-3025	Environmental Engineering Technicians	63	4	7%	28	7
17-3013	Mechanical Drafters	40	6	14%	18	5
	All Other Architecture & Engineering Occupations	101	13	13%	34	9
TOTAL		1,153	76	7%	506	119



Exhibit 8. Comparison of architecture and engineering entry-level and experienced wages with the regional living wage, Far North Region, 2017

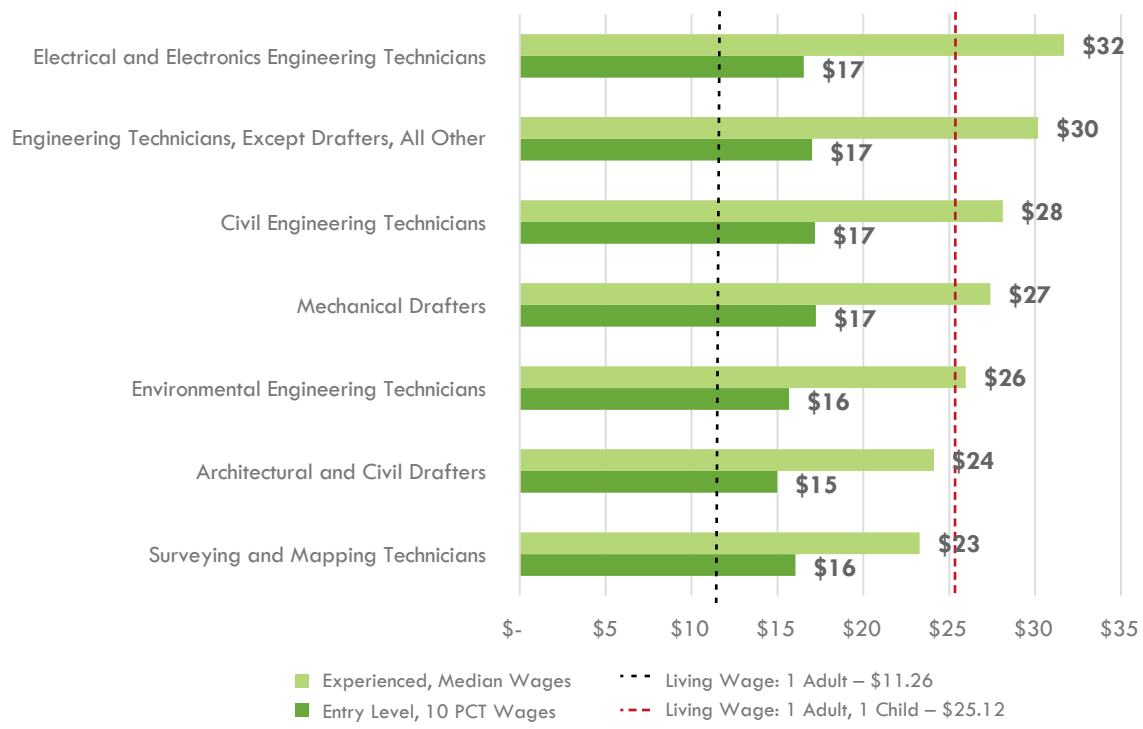


Exhibit 9. Education and training requirements for architecture and engineering occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
17-3011	Architectural and Civil Drafters	Associate degree	None	61%
17-3013	Mechanical Drafters	Associate degree	None	61%
17-3022	Civil Engineering Technicians	Associate degree	None	53%
17-3023	Electrical and Electronics Engineering Technicians	Associate degree	None	53%
17-3025	Environmental Engineering Technicians	Associate degree	None	53%
17-3029	Engineering Technicians, Except Drafters, All Other	Associate degree	None	53%
17-3031	Surveying and Mapping Technicians	High school diploma or equivalent	Moderate-term	57%

Exhibit 10. Community college program headcounts and average annual awards, architecture and engineering occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
30300	Environmental Technology	362		
92400	Engineering Technology, General	91	1	4
93400	Electronics and Electric Technology	80		
93410	Computer Electronics	9	4	
94500	Industrial Systems Technology and Maintenance	11	0	
95300	Drafting Technology	553	22	11
95310	Architectural Drafting	97	2	3
95340	Mechanical Drafting	13	26	
95600	Manufacturing and Industrial Technology	280	4	2
95730	Surveying	65		
95800	Water and Wastewater Technology	90	4	
99900	Other Engineering and Related Industrial Technologies	1,156	24	23
220610	Geographic Information Systems	151	6	1
TOTAL		2,957	94	45



➤ Key Findings

- Only 16 percent of jobs in the Far North Region qualify as middle skill in this major occupational group. By comparison, more than 60 percent of jobs in this group typically require a bachelor’s degree or higher for an entry-level position.
- There are 750 middle-skill jobs in this major occupational group in the Far North Region. Projected annual openings are small, a total of 76. Photographers, and audio and video equipment technicians have the greatest employment and annual openings.
- Wages are low, ranging from \$11 per hour to \$18 per hour, with the exception of sound engineering technicians, for which there are very few jobs, only two annual openings.
- The average annual headcount totals 2,560 for the Far North Region. On average, 96 annual awards are conferred by related programs.
- Photography, commercial music and the various digital media programs have the largest student headcounts, but few awards are conferred on average. Multimedia and television confer the most awards; still, the numbers are small, just under 20-30 awards per program on average.

Exhibit 11. Employment and projected occupational demand for arts, design, entertainment, sports and media occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
27-4021	Photographers	290	23	8%	118	29
27-4011	Audio and Video Equipment Technicians	149	10	7%	69	16
27-2011	Actors	83	5	6%	42	9
27-1023	Floral Designers	75	(4)	(5%)	34	7
27-4012	Broadcast Technicians	47	2	4%	22	5
27-3011	Radio and Television Announcers	46	1	1%	22	5
27-2031	Dancers	20	1	5%	13	3
27-4014	Sound Engineering Technicians	25	(1)	(2%)	11	2
27-1019	Artists and Related Workers, All Other	23	(2)	(8%)	0	0
TOTAL		759	35	5%	330	76



Exhibit 12. Comparison of arts, design, entertainment, sports and media entry-level and experienced wages with regional living wage, Far North Region, 2017

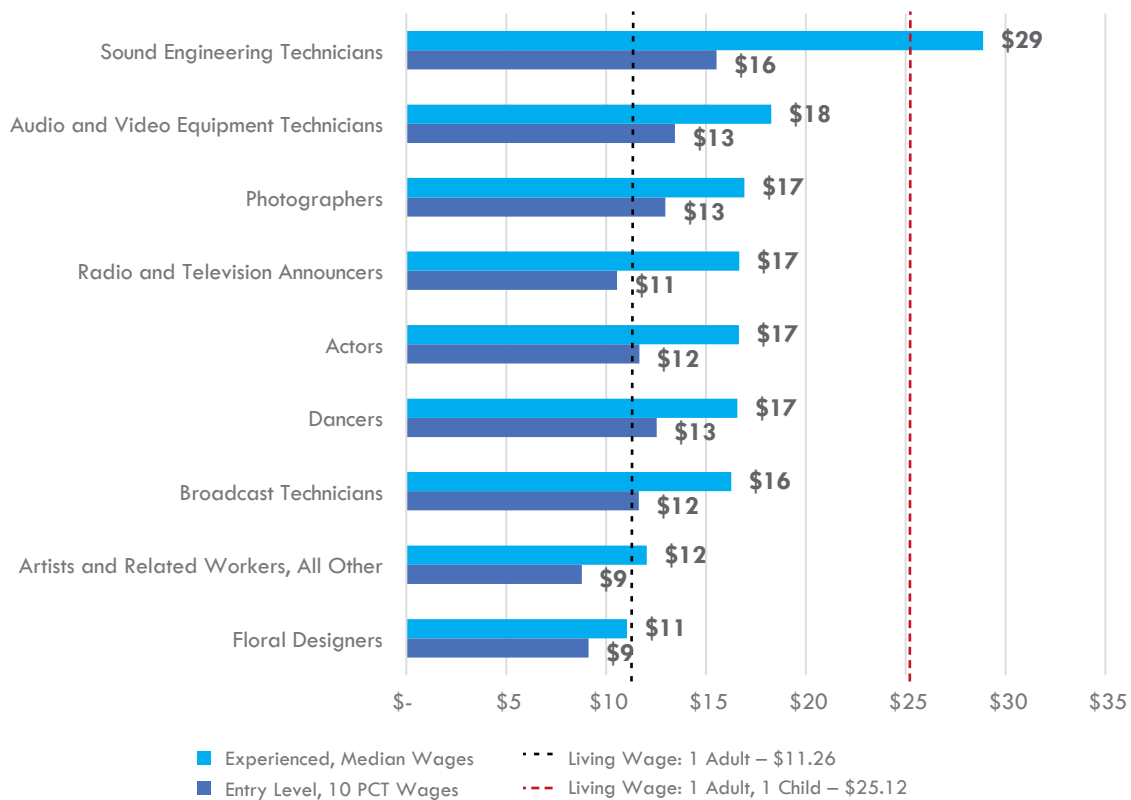


Exhibit 13. Education and training requirements for arts, design, entertainment, sports and media occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
27-1019	Artists and Related Workers, All Other	No formal educational credential	Long-term	28%
27-1023	Floral Designers	High school diploma or equivalent	Moderate-term	29%
27-2011	Actors	Some college, no degree	Long-term	33%
27-2031	Dancers	No formal educational credential	Long-term	26%
27-3011	Radio and Television Announcers	Bachelor's degree	None	36%
27-4011	Audio and Video Equipment Technicians	Postsecondary nondegree award	Short-term	44%
27-4012	Broadcast Technicians	Associate degree	Short-term	44%
27-4014	Sound Engineering Technicians	Postsecondary nondegree award	Short-term	44%
27-4021	Photographers	High school diploma or equivalent	Long-term	34%

Exhibit 14. Community college program headcounts and average annual awards, arts, design, entertainment, sports and media occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
010920	Floriculture/Floristry	23	3	
060400	Radio and Television	82	5	
060420	Television (including combined TV/ Film/Video)	60	12	5
061220	Film Production	11		
061400	Digital Media	176		0
061410	Multimedia	212	14	14
061420	Electronic Game Design	59		
061440	Animation	108		
061460	Computer Graphics and Digital Imagery	233		
085010	Sign Language Interpreting	1		
100500	Commercial Music	276	4	4
100600	Technical Theater	116		
100810	Commercial Dance	16		
101100	Photography	581	15	
101200	Applied Photography	66		7
101300	Commercial Art	87		
103000	Graphic Art and Design	201	1	13
109900	Other Fine and Applied Arts	103		
130300	Fashion	60	0.3	
130310	Fashion Design	88		
TOTAL		2,560	53	43



➤ Key Findings

- A fifth of jobs in this occupational group in the Far North Region qualify as middle skill.
- The business and financial occupational group has just over 2,100 total middle-skill jobs with 200 annual openings projected over the next five years.
- Projected growth is just 3 percent.
- Loan officers, cost estimators, and tax preparers top the list of middle-skill occupations with the most annual openings in the region.
- Median wages for many of the middle-skill occupations are above the upper threshold living wage. Wages range from \$20 per hour to \$33 per hour.
- The community college headcount annually is just under 8,400 students annually in related programs. About 475 awards are conferred annually by programs related to business and finance.
- Business and commerce, accounting, business administration, and business management have the highest student headcounts and confer the greatest number of awards annually on average.

Exhibit 15. Employment and projected occupational demand for business and financial occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
13-1051	Cost Estimators	407	41	10%	204	49
13-2072	Loan Officers	498	(1)	0%	198	42
13-2082	Tax Preparers	289	(10)	(3%)	148	31
13-1031	Claims Adjusters, Examiners, and Investigators	274	8	3%	111	26
13-2081	Tax Examiners and Collectors, and Revenue Agents	275	2	1%	95	20
13-1081	Logisticians	144	12	8%	71	17
13-2021	Appraisers and Assessors of Real Estate	168	1	1%	54	12
13-2071	Credit Counselors	42	4	9%	17	4
13-1032	Insurance Appraisers, Auto Damage	22	1	7%	0	2
TOTAL		2,119	59	3%	898	204



Exhibit 16. Comparison of business and financial entry-level and experienced wages with regional living wage, Far North Region, 2017

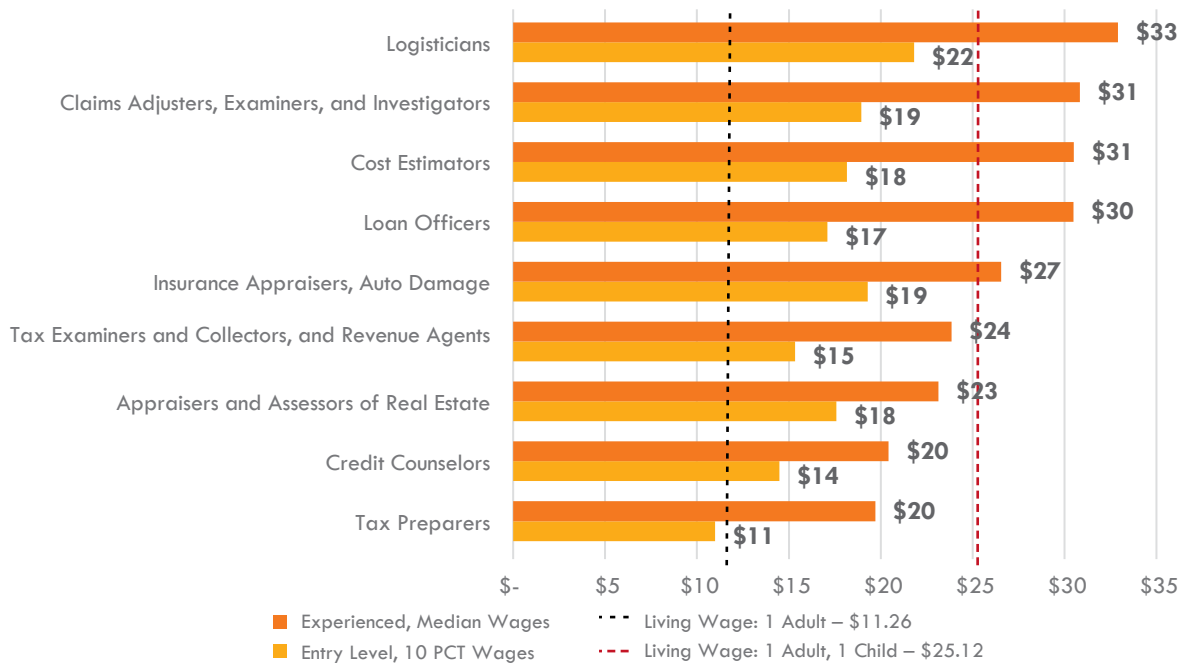


Exhibit 17. Education and training requirements for business and financial occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
13-1031	Claims Adjusters, Examiners, and Investigators	High school diploma or equivalent	Long-term	36%
13-1032	Insurance Appraisers, Auto Damage	Postsecondary nondegree award	Moderate-term	36%
13-1051	Cost Estimators	Bachelor's degree	Moderate-term	39%
13-1081	Logisticians	Bachelor's degree	None	40%
13-2021	Appraisers and Assessors of Real Estate	Bachelor's degree	Long-term	36%
13-2071	Credit Counselors	Bachelor's degree	Moderate-term	35%
13-1141	Compensation, Benefits, and Job Analysis Specialists	Bachelor's degree	None	33%
13-1151	Training and Development Specialists	Bachelor's degree	None	34%
13-2021	Appraisers and Assessors of Real Estate	Bachelor's degree	Long-term on-the-job training	35%
13-2071	Credit Counselors	Bachelor's degree	Moderate-term on-the-job training	34%
13-2072	Loan Officers	Bachelor's degree	Moderate-term	35%
13-2081	Tax Examiners and Collectors, and Revenue Agents	Bachelor's degree	Moderate-term	31%
13-2082	Tax Preparers	High school diploma or equivalent	Moderate-term	30%

Exhibit 18. Community college program headcounts and average annual awards, business and financial occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
50100	Business and Commerce, General	3,231	4	72
50200	Accounting	2,895	47	50
50210	Tax Studies	83	7	
50400	Banking and Finance	142		
50500	Business Administration	356		234
50600	Business Management	1,066	11	43
50650	Retail Store Operations and Management	12	0	0
50900	Marketing and Distribution	281		1
51100	Real Estate	291	4	3
TOTAL		8,357	73	403





Key Findings

- In 2017, the two middle-skill occupations in the community and social services major group employed 2,689 workers, and these two occupations combined are projected to offer 376 annual openings.
- Median wages are \$17 per hour, below the living wage for a one-adult, one-child household.
- The community college student headcount in related programs is nearly 2,500 students. These programs confer about 70 awards each year on average.
- Alcohol and controlled substances, family and consumer sciences, and human services programs account for a high percentage of student headcount and awards.

Exhibit 19. Employment and projected occupational demand for community and social services occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
21-1093	Social and Human Service Assistants	2,548	234	9%	1,527	354
21-1094	Community Health Workers	142	19	13%	89	22
TOTAL		2,689	253	9%	1,616	376

Exhibit 20. Comparison of community and social services entry-level and experienced wages with regional living wage, Far North Region, 2017

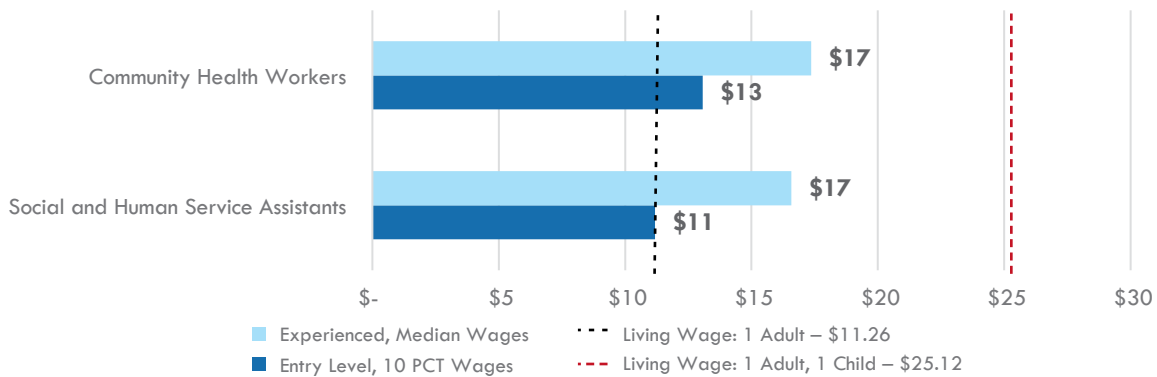


Exhibit 21. Education and training requirements for community and social services occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
21-1093	Social and Human Service Assistants	High school diploma or equivalent	Short-term	36%
21-1094	Community Health Workers	High school diploma or equivalent	Short-term	29%

Exhibit 22. Community college program headcounts and average annual awards, community and social services occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
130100	Family and Consumer Sciences, General	1,024	2	15
130560	Parenting and Family Education	22		
130800	Family Studies	123		5
210400	Human Services	636	23	11
210440	Alcohol and Controlled Substances	662	16	3
210440	Alcohol and Controlled Substances	390	33	36
TOTAL		2,467	41	33





Key Findings

- In the Far North Region, 2,300 middle-skill jobs comprise the computer and mathematical occupational group.
- A large share—60 percent of occupational employment—is classified as middle skill in this group.
- Occupational demand is projected to grow by 6 percent with 200 annual openings over the next five years.
- Median wages are strong, ranging from \$21 per hour to \$42 per hour.
- Related programs report an annual student headcount of 5,400 and just under 100 annual awards on average.
- Software applications and computer programming programs have the largest student headcounts. Computer networking and computer information systems confer the greatest number of awards on average each year.

Exhibit 23. Employment and projected occupational demand for computer and mathematical occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
15-1151	Computer User Support Specialists	980	56	6%	360	85
15-1199	Computer Occupations, All Other	419	18	4%	140	32
15-1142	Network and Computer Systems Administrators	373	26	7%	116	29
15-1152	Computer Network Support Specialists	237	18	8%	88	22
15-1134	Web Developers	238	17	7%	84	21
15-1143	Computer Network Architects	67	8	12%	22	6
TOTAL		2,313	143	6%	811	195

Exhibit 24. Comparison of computer and mathematical entry-level and experienced wages with regional living wage, Far North Region, 2017

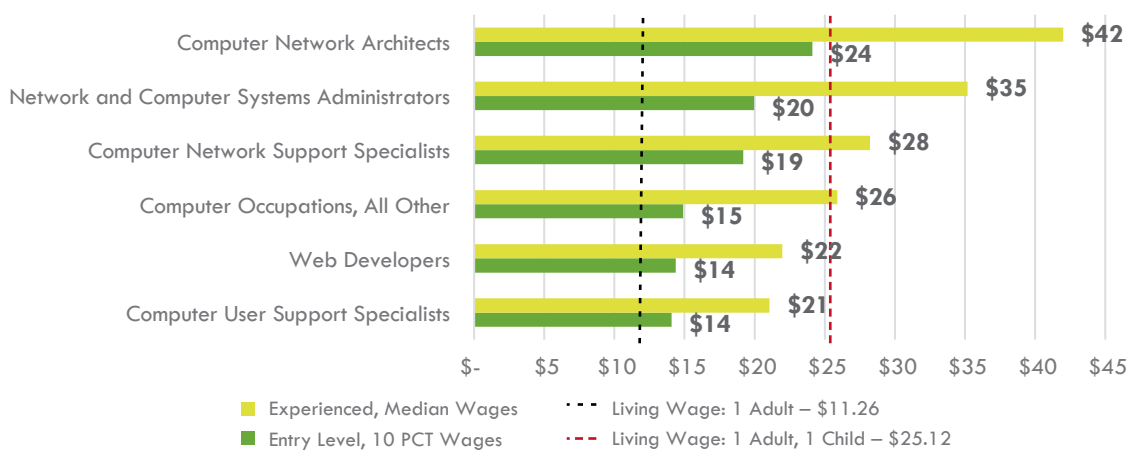




Exhibit 25. Education and training requirements for computer and mathematical occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
15-1134	Web Developers	Associate degree	None	25%
15-1142	Network and Computer Systems Administrators	Bachelor's degree	None	38%
15-1143	Computer Network Architects	Bachelor's degree	None	35%
15-1151	Computer User Support Specialists	Some college, no degree	None	41%
15-1152	Computer Network Support Specialists	Associate degree	None	41%
15-1199	Computer Occupations, All Other	Bachelor's degree	None	35%
15-1199	Computer Occupations, All Other	Bachelor's degree	None	35%

Exhibit 26. Community college program headcounts and average annual awards, computer and mathematical occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
61420	Electronic Game Design	59		
61430	Website Design and Development	113		
70100	Information Technology, General	590		1
70200	Computer Information Systems	238	19	23
70210	Software Applications	2,875	10	5
70700	Computer Software Development	26		2
70710	Computer Programming	717		
70800	Computer Infrastructure and Support	250	2	
70810	Computer Networking	214	12	12
70820	Computer Support	61		
70900	World Wide Web Administration	121	2	
220610	Geographic Information Systems	151	6	1
TOTAL		5,414	51	43

➤ Key Findings

- The construction and extraction occupational group is large, with more than 5,000 projected annual openings and replacements over the next five years.
- More than half of jobs in construction and extraction in the Far North Region are considered middle skill, accounting for 9,300 current jobs.
- Apprenticeship is the overwhelming qualifying middle-skill criteria for construction and extraction occupations.
- While this cluster is expected to expand by 4 percent through 2022, this projected growth estimate understates workforce need due to retirements in the next five years.
- Occupations expected to have more than 100 annual job openings include: carpenters, operating engineers and other construction equipment operators, first-line supervisors of construction trades and extraction workers, plumbers, and electricians. In total, there will be more than 1,000 annual openings for these middle-skill occupations.
- The pay spectrum varies from low to high wages. About half of the occupations pay less than \$20 per hour. Only four occupations pay more than \$25 per hour.
- Related programs report an annual student headcount of about 600. Just under 90 annual awards are conferred on average.
- The largest program areas by headcount and awards are heavy equipment operation, construction crafts technology, and mill and cabinet work. Energy systems technology has a sizeable headcount but registers virtually no awards.



Exhibit 27. Employment and projected occupational demand for construction and extraction occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
47-2031	Carpenters	3,218	(19)	(1%)	1,446	314
47-2073	Operating Engineers and Other Construction Equipment Operators	1,418	119	8%	793	185
47-2152	Plumbers, Pipefitters, and Steamfitters	1,095	99	9%	582	139
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	1,186	37	3%	571	137
47-2111	Electricians	1,085	57	5%	607	137
47-4011	Construction and Building Inspectors	245	14	6%	133	30
47-2221	Structural Iron and Steel Workers	202	26	13%	110	27
47-2211	Sheet Metal Workers	201	26	13%	109	27
47-2231	Solar Photovoltaic Installers	94	41	43%	58	20
47-2121	Glaziers	132	17	13%	78	19
47-2161	Plasterers and Stucco Masons	120	(2)	(2%)	55	12
47-2021	Brickmasons and Blockmasons	124	(6)	(5%)	51	12
47-2171	Reinforcing Iron and Rebar Workers	70	4	6%	36	9
47-2022	Stonemasons	43	(1)	(2%)	18	4
47-4061	Rail-Track Laying and Maintenance Equipment Operators	29	0	0%	14	3
47-4021	Elevator Installers and Repairers	17	1	6%	10	2
47-5031	Explosives Workers, Ordnance Handling Experts, and Blasters	19	1	3%	11	2
47-2132	Insulation Workers, Mechanical	13	3	23%		2
TOTAL		9,312	426	5%	4,682	1,081

Exhibit 28. Comparison of construction and extraction entry-level and experienced wages with regional living wage, Far North Region, 2017

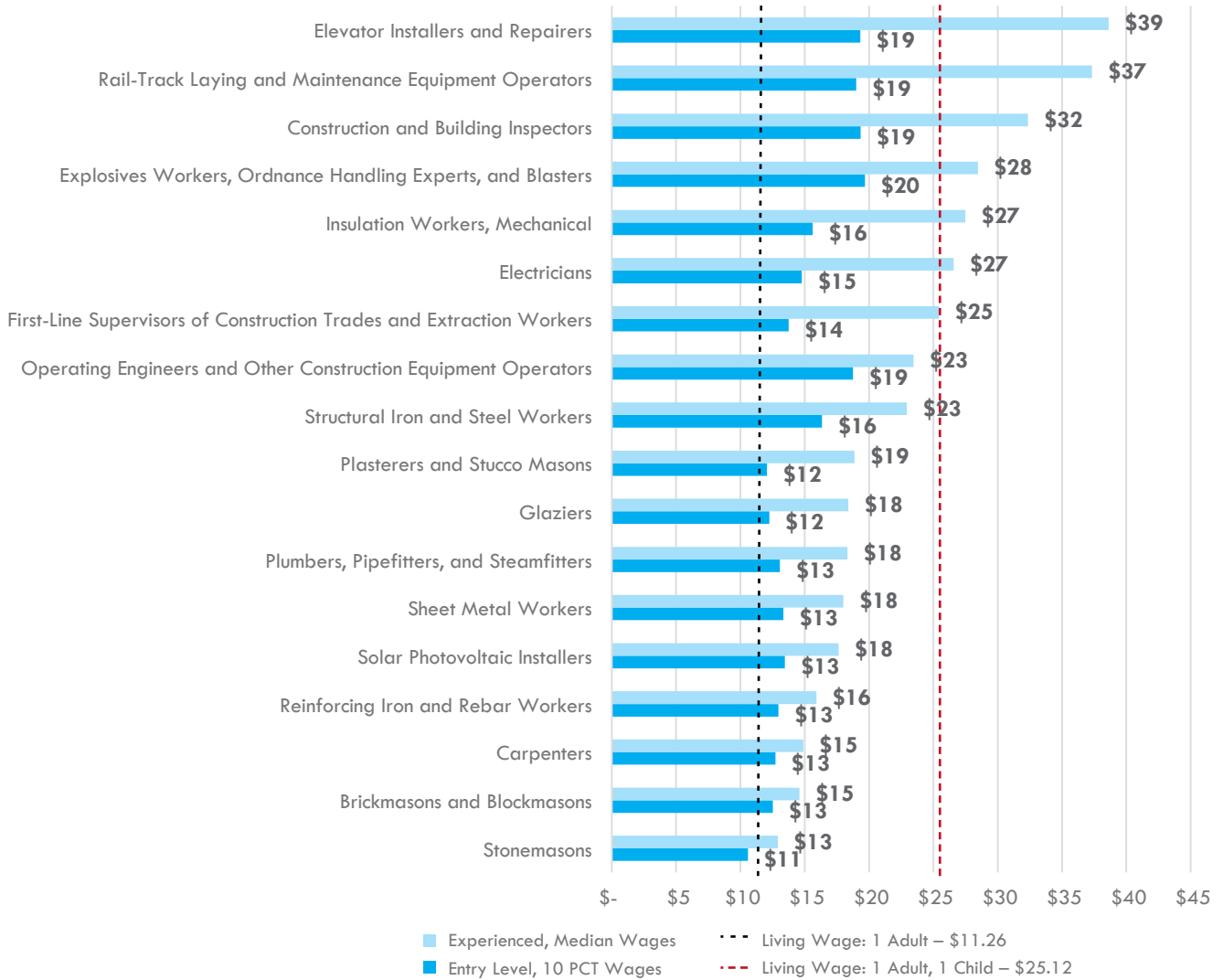


Exhibit 29. Education and training requirements for construction and extraction occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	High school diploma or equivalent	None	32%
47-2021	Brickmasons and Blockmasons	High school diploma or equivalent	Apprenticeship	16%
47-2022	Stonemasons	High school diploma or equivalent	Apprenticeship	16%
47-2031	Carpenters	High school diploma or equivalent	Apprenticeship	25%
47-2073	Operating Engineers and Other Construction Equipment Operators	High school diploma or equivalent	Moderate-term	26%
47-2111	Electricians	High school diploma or equivalent	Apprenticeship	46%
47-2121	Glaziers	High school diploma or equivalent	Apprenticeship	26%
47-2132	Insulation Workers, Mechanical	High school diploma or equivalent	Apprenticeship	24%
47-2152	Plumbers, Pipefitters, and Steamfitters	High school diploma or equivalent	Apprenticeship	32%
47-2161	Plasterers and Stucco Masons	No formal educational credential	Long-term	12%
47-2171	Reinforcing Iron and Rebar Workers	High school diploma or equivalent	Apprenticeship	16%
47-2211	Sheet Metal Workers	High school diploma or equivalent	Apprenticeship	32%
47-2221	Structural Iron and Steel Workers	High school diploma or equivalent	Apprenticeship	36%
47-2231	Solar Photovoltaic Installers	High school diploma or equivalent	Moderate-term	30%
47-4011	Construction and Building Inspectors	High school diploma or equivalent	Moderate-term	45%
47-4021	Elevator Installers and Repairers	High school diploma or equivalent	Apprenticeship	41%
47-4061	Rail-Track Laying and Maintenance Equipment Operators	High school diploma or equivalent	Moderate-term	35%
47-5031	Explosives Workers, Ordnance Handling Experts, and Blasters	High school diploma or equivalent	Long-term	26%

Exhibit 30. Community college program headcounts and average annual awards, construction and extraction occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
94600	Environmental Control Technology	16		
94610	Energy Systems Technology	116	1	
94730	Heavy Equipment Operation	153	34	
95200	Construction Crafts Technology	124	21	5
95210	Carpentry	64		
95220	Electrical	51	3	
95250	Mill and Cabinet Work	89	22	
TOTAL		611	81	5



➤ Key Findings

- There are 6,600 middle-skill jobs in the Far North Region in the education and training occupational group for the two occupations studied.
- Nearly 600 annual openings are projected for teacher assistants, and more than 150 annual openings are projected for preschool teachers.
- Overall employment is projected to grow by 3 percent through 2022.
- Median wages are low, just \$13 per hour and \$14 per hour.
- On average, annual student headcounts total nearly 7,400 in related programs. About 280 awards are conferred by these programs annually.
- Child development/early care and education accounts for the lion’s share of student headcounts and awards. Educational aide (especially bilingual) has an annual headcount of more than 1,400, but reports conferring no awards.

Exhibit 31. Employment and projected occupational demand for education and training occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
25-9041	Teacher Assistants	5,119	155	3%	2,614	571
25-2011	Preschool Teachers, Except Special Education	1,501	71	5%	733	166
TOTAL		6,620	226	3%	3,347	738

Exhibit 32. Comparison of education and training entry-level and experienced wages with regional living wage, Far North Region, 2017

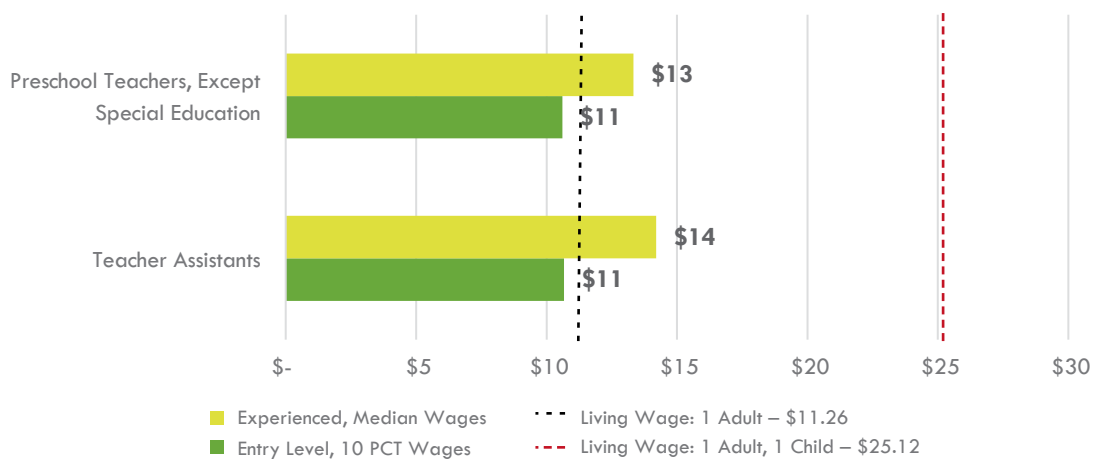


Exhibit 33. Education and training requirements for education and training occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
25-2011	Preschool Teachers, Except Special Education	Associate degree	None	40%
25-9041	Teacher Assistants	Some college, no degree	None	41%

Exhibit 34. Community college program headcounts and average annual awards, education and training occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
80200	Educational Aide (Teacher Assistant)	25		
80210	Educational Aide (Teacher Assistant), Bilingual	1,465		
130500	Child Development/Early Care and Education	5,692	181	105
130540	Preschool Age Child	196		
TOTAL		7,378	181	105



➤ Key Findings

- Food preparation and serving is one of the most prominent clusters of employment in the Far North Region. However, a fraction of employment in this occupational group is considered middle skill.
- In total, this occupational group employs 2,300 middle-skill workers in the Far North Region. Occupational demand is projected to grow by 5 percent over the next five years.
- Through 2022, a high level of replacement demand is projected for supervisory roles in food preparation and serving, 300 annual openings and 1,350 replacements. There are 50 projected annual openings for chefs and head cooks.
- Median wages are low, just \$14 per hour for first-line supervisors and \$18 per hour for chefs and head cooks.
- The student headcount totals roughly 3,900, but each year, only 45 annual awards are conferred each year by Far North community colleges.
- The largest headcount is in nutrition, food, and culinary arts. Restaurant and food services management also has a sizeable headcount.

Exhibit 35. Employment and projected occupational demand for food preparation and serving occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	1,888	98	5%	1,349	291
35-1011	Chefs and Head Cooks	382	17	5%	239	52
TOTAL		2,270	115	5%	1,588	342

Exhibit 36. Comparison of food preparation and serving entry-level and experienced wages with regional living wage, Far North Region, 2017

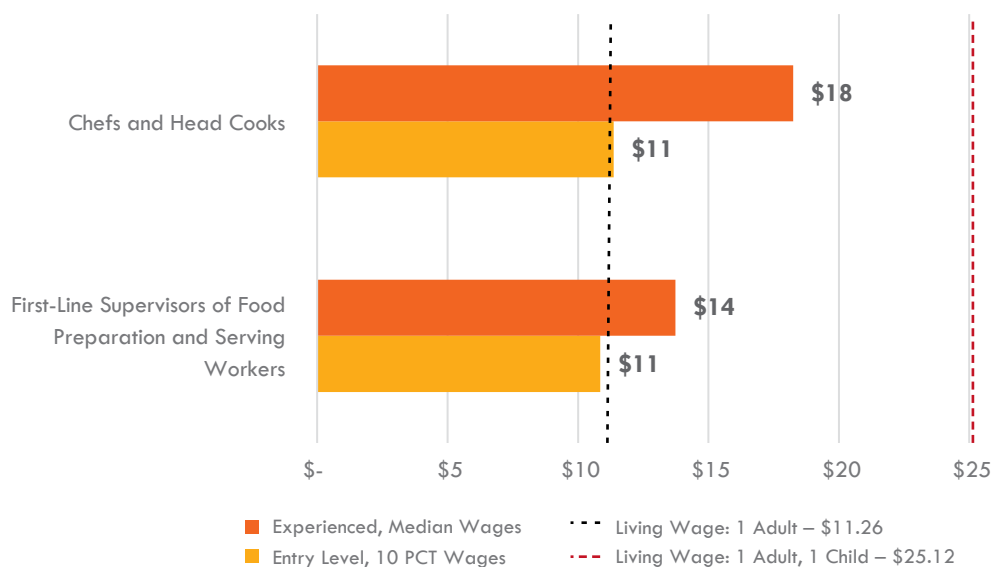


Exhibit 37. Education and training requirements for food preparation and serving occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
35-1011	Chefs and Head Cooks	High school diploma or equivalent	None	41%
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	High school diploma or equivalent	None	39%

Exhibit 38. Community college program headcounts and average annual awards, food preparation and serving occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
130600	Nutrition, Foods, and Culinary Arts	3,108		13
130620	Dietetic Services and Management	20	3	
130630	Culinary Arts	321	10	8
130700	Hospitality	45	1	7
130710	Restaurant and Food Services and Management	422	3	
TOTAL		3,915	17	28





➤ Key Findings

- The healthcare practitioner and technical group is the second largest occupational cluster in the Far North Region, with nearly 15,000 middle-skill jobs and nearly 1,200 annual openings projected.
- This occupational group is projected to grow more rapidly than all middle-skill jobs overall (+9 percent versus +4 percent).
- Registered nurses, licensed practical and licensed vocational nurses, and pharmacy technicians are projected to offer the greatest number of annual openings between 2017 and 2022.
- Wages are very strong but vary significantly between occupations. Emergency medical technicians (EMTs) and paramedics earn \$16 per hour; by comparison, dental hygienists earn \$46 per hour. More than half of the occupations studied have wage levels above the living wage for a one-adult, one-child household in the region.
- Student headcounts and awards are robust in related programs. On average, Far North community colleges report a student headcount of 10,100 annually and produce more than 700 awards each year.
- Programs conferring the most awards annually include: nutrition, foods, and culinary arts; registered nursing; and licensed vocational nursing.





Exhibit 39. Employment and projected occupational demand for healthcare practitioner and technical occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
29-1141	Registered Nurses	7,486	745	10%	1,943	539
29-2061	Licensed Practical and Licensed Vocational Nurses	1,465	95	6%	524	126
29-2052	Pharmacy Technicians	896	31	3%	350	77
29-2041	Emergency Medical Technicians and Paramedics	605	55	9%	184	51
29-2021	Dental Hygienists	625	2	0%	182	41
29-2071	Medical Records and Health Information Technicians	563	32	6%	170	41
29-1126	Respiratory Therapists	510	73	14%	124	40
29-2018	Clinical Laboratory Technologists and Technicians	452	40	9%	143	37
29-2056	Veterinary Technologists and Technicians	338	36	11%	136	35
29-2099	Health Technologists and Technicians, All Other	326	54	16%	106	32
29-2034	Radiologic Technologists	444	36	8%	117	31
29-2055	Surgical Technologists	281	27	10%	112	28
29-2053	Psychiatric Technicians	153	17	11%	61	16
29-2051	Dietetic Technicians	150	11	7%	59	14
29-2081	Opticians, Dispensing	133	10	8%	48	12
29-2032	Diagnostic Medical Sonographers	154	18	12%	41	12
29-2031	Cardiovascular Technologists and Technicians	101	9	9%	27	7
29-2057	Ophthalmic Medical Technicians	58	5	9%	23	6
29-9099	Healthcare Practitioners and Technical Workers, All Other	79	6	8%	20	5
29-2035	Magnetic Resonance Imaging Technologists	43	6	13%	12	3
29-2033	Nuclear Medicine Technologists	37	3	8%	0	3
29-9012	Occupational Health and Safety Technicians	25	3	13%	0	0
	<i>All Other Healthcare Practitioners and Technical Occupations</i>	55	2	4%	<i>Insf. Data</i>	<i>Insf. Data</i>
TOTAL		14,977	1,317	9%	4,381	1,155



Exhibit 40. Comparison of healthcare practitioner and technical entry-level and experienced wages with regional living wage, Far North Region, 2017

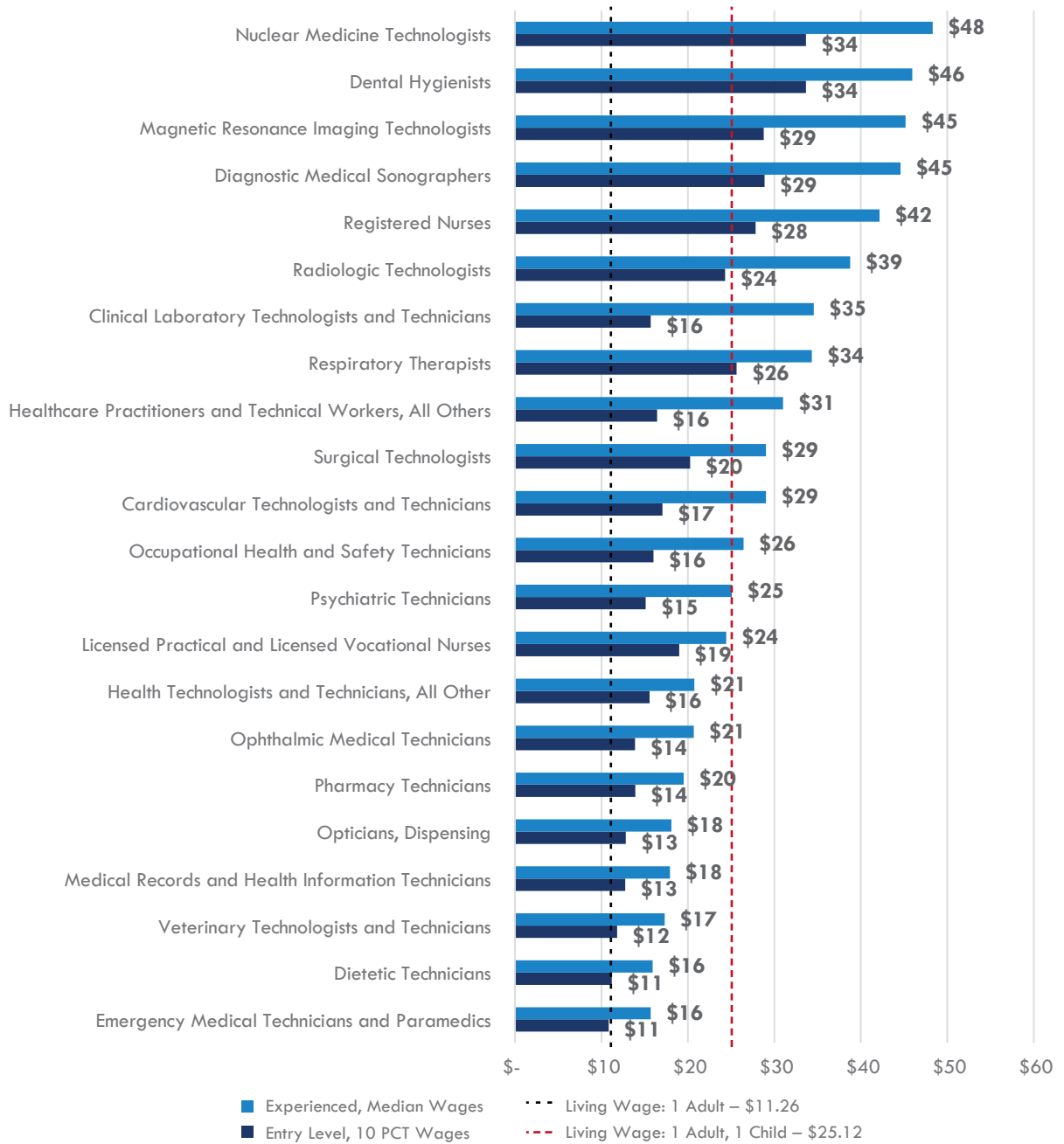




Exhibit 41. Education and training requirements for healthcare practitioner and technical occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
29-1141	Registered Nurses	Bachelor's degree	None	38%
29-1126	Respiratory Therapists	Associate degree	None	68%
29-2018	Clinical Laboratory Technologists and Technicians	N/A	N/A	N/A
29-2021	Dental Hygienists	Associate degree	None	59%
29-2031	Cardiovascular Technologists and Technicians	Associate degree	None	59%
29-2032	Diagnostic Medical Sonographers	Associate degree	None	59%
29-2033	Nuclear Medicine Technologists	Associate degree	None	59%
29-2034	Radiologic Technologists	N/A	N/A	N/A
29-2035	Magnetic Resonance Imaging Technologists	Associate degree	None	59%
29-2041	Emergency Medical Technicians and Paramedics	Postsecondary nondegree award	None	65%
29-2051	Dietetic Technicians	Associate degree	None	56%
29-2052	Pharmacy Technicians	High school diploma or equivalent	Moderate-term	56%
29-2053	Psychiatric Technicians	Postsecondary nondegree award	Short-term	56%
29-2055	Surgical Technologists	Postsecondary nondegree award	None	56%
29-2056	Veterinary Technologists and Technicians	Associate degree	None	56%
29-2057	Ophthalmic Medical Technicians	Postsecondary nondegree award	None	56%
29-2061	Licensed Practical and Licensed Vocational Nurses	Postsecondary nondegree award	None	70%
29-2071	Medical Records and Health Information Technicians	Postsecondary nondegree award	None	56%
29-2081	Opticians, Dispensing	High school diploma or equivalent	Long-term	47%
29-2099	Health Technologists and Technicians, All Other	Postsecondary nondegree award	None	49%
29-9012	Occupational Health and Safety Technicians	High school diploma or equivalent	Moderate-term	23%
29-9099	Healthcare Practitioners and Technical Workers, All Other	Postsecondary nondegree award	None	23%



Exhibit 42. Community college program headcounts and average annual awards, healthcare practitioner and technical, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
10210	Veterinary Technician (Licensed)	5		
43000	Biotechnology and Biomedical Technology	1		
51420	Medical Office Technology	851	33	31
121000	Respiratory Care/Therapy	354	29	29
121300	Cardiovascular Technician	24		
122300	Health Information Technology	267		2
122310	Health Information Coding	29	2	
123000	Nursing	4		
123010	Registered Nursing	2,878	4	247
123020	Licensed Vocational Nursing	1,098	81	43
124020	Dental Hygienist	357		14
125000	Emergency Medical Services	816	11	10
125100	Paramedic	301	150	17
130600	Nutrition, Foods, and Culinary Arts	3,108		13
130620	Dietetic Services and Management	20	3	
TOTAL		10,112	312	405





Key Findings

- With 8,700 middle-skill jobs, healthcare support represents another large occupational category in the Far North Region. In total, 96 percent of jobs in the healthcare support major occupational group are categorized as middle skill and will offer more than 1,200 annual openings.
- The healthcare support occupational cluster is projected to grow by 11 percent over the next five years, the fastest pace of all the clusters in the region.
- Nursing assistants, medical assistants, dental assistants and home health aides will offer the greatest number of annual openings through 2022.
- Wages are generally low, substantially lower than for the previous healthcare technical support group, and range from \$13 per hour to \$21 per hour, below the threshold for the living wage for a one-adult, one-child household. Occupational therapy assistants and physical therapy assistants earn \$29 per hour and \$32 per hour, respectively.
- Student headcounts and awards are sizeable in several programs. On average, the student headcount totals nearly 1,500 annually and about 170 annual awards are conferred each year.
- The largest programs are medical office technology, certified nursing assistant, and dental assistant.

Exhibit 43. Employment and projected occupational demand for healthcare support occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
31-1014	Nursing Assistants	2,469	279	11%	1,428	344
31-9092	Medical Assistants	1,912	168	9%	1,038	244
31-1011	Home Health Aides	738	417	56%	493	184
31-9091	Dental Assistants	1,206	11	1%	649	138
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	350	35	10%	275	62
31-9011	Massage Therapists	411	31	7%	214	49
31-9097	Phlebotomists	349	16	4%	180	40
31-9099	Healthcare Support Workers, All Other	276	14	5%	172	37
31-9095	Pharmacy Aides	288	(26)	(9%)	185	37
31-2021	Physical Therapist Assistants	218	25	12%	134	32
31-9094	Medical Transcriptionists	219	(16)	(7%)	124	25
31-9093	Medical Equipment Preparers	139	13	10%	88	20
31-2011	Occupational Therapy Assistants	51	10	20%	33	9
31-1013	Psychiatric Aides	43	12	27%	26	8
31-2012	Occupational Therapy Aides	39	4	11%	24	6
TOTAL		8,709	992	11%	5,064	1,236



Exhibit 44. Comparison of healthcare support entry-level and experienced wages with regional living wage, Far North Region, 2017

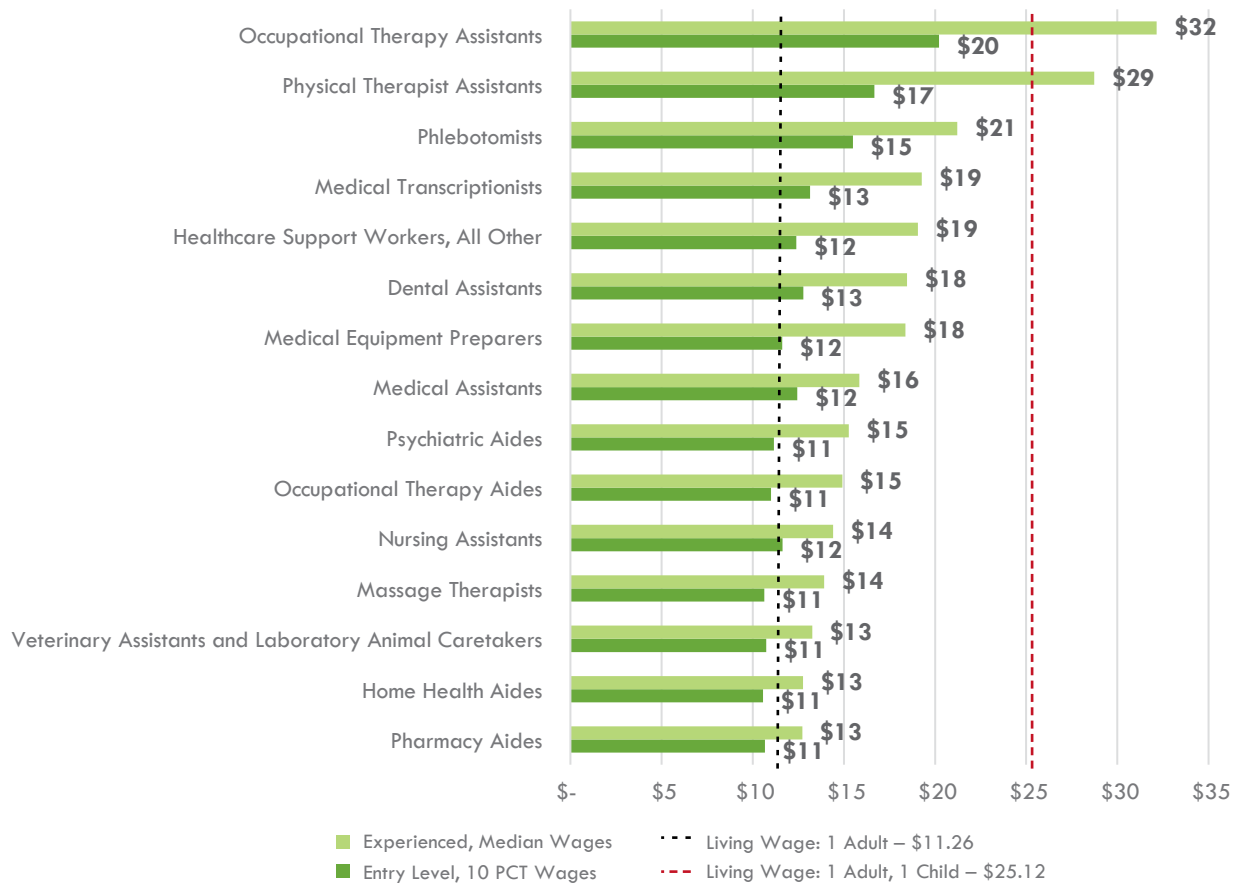




Exhibit 45. Education and training requirements for healthcare support occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
31-1011	Home Health Aides	High school diploma or equivalent	Short-term	42%
31-1013	Psychiatric Aides	High school diploma or equivalent	Short-term	42%
31-1014	Nursing Assistants	Postsecondary nondegree award	None	42%
31-2011	Occupational Therapy Assistants	Associate degree	None	79%
31-2012	Occupational Therapy Aides	High school diploma or equivalent	Short-term	79%
31-2021	Physical Therapist Assistants	Associate degree	None	64%
31-9011	Massage Therapists	Postsecondary nondegree award	None	53%
31-9091	Dental Assistants	Postsecondary nondegree award	None	62%
31-9092	Medical Assistants	Postsecondary nondegree award	None	66%
31-9093	Medical Equipment Preparers	High school diploma or equivalent	Moderate-term	38%
31-9094	Medical Transcriptionists	Postsecondary nondegree award	None	56%
31-9095	Pharmacy Aides	High school diploma or equivalent	Short-term	45%
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	High school diploma or equivalent	Short-term	44%
31-9097	Phlebotomists	Postsecondary nondegree award	None	64%
31-9099	Healthcare Support Workers, All Other	High school diploma or equivalent	None	38%

Exhibit 46. Community college program headcounts and average annual awards, healthcare support occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
51420	Medical Office Technology	851	33	31
120510	Phlebotomy	18		
120800	Medical Assisting	70	4	
120810	Clinical Medical Assisting	7		
120820	Administrative Medical Assisting	22		
122310	Health Information Coding	29	2	
123000	Nursing	4		
123030	Certified Nurse Assistant	277	63	
123080	Home Health Aide	11	8	
124010	Dental Assistant	176	16	6
TOTAL		1,465	127	37

➤ Key Findings

- By total employment and number of middle-skill jobs, installation, maintenance and repair is one of the largest occupational groups.
- This group consists of 13,000 middle-skill jobs, which represent 87 percent of jobs in the cluster.
- Installation, maintenance and repair is projected to grow 5 percent over the next five years with 1,300 projected annual openings; however, projected growth varies significantly for individual occupations. Notable occupations to include: industrial machinery mechanics (+11 percent growth); heating, air conditioning, and refrigeration mechanics and installers (+8 percent growth); electrical power-line installers and repairers (+8 percent growth).
- There is significant wage variation among the occupations. Electronic equipment installers and mechanics earn \$15 per hour; electrical and electronics repairers (utilities) earn \$41 per hour.
- Student headcounts in related programs total nearly 3,500 annually. These programs confer about 170 awards each year on average.
- The largest program categories by headcount and awards are automotive technology, agricultural power technology, and diesel technology.

Exhibit 47. Employment and projected occupational demand for installation, maintenance and repair occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
49-9071	Maintenance and Repair Workers, General	4,012	246	6%	1,974	445
49-3023	Automotive Service Technicians and Mechanics	2,199	21	1%	1,015	215
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	998	59	6%	429	98
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	749	42	6%	337	76
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	690	57	8%	338	81
49-9041	Industrial Machinery Mechanics	566	63	11%	251	64
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	433	9	2%	226	50
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	425	22	5%	204	46
49-3021	Automotive Body and Related Repairers	405	14	3%	193	43
49-9051	Electrical Power-Line Installers and Repairers	244	20	8%	98	25
49-9052	Telecommunications Line Installers and Repairers	205	9	4%	101	23
49-3011	Aircraft Mechanics and Service Technicians	185	8	5%	71	17

Continued on the next page

Exhibit 47. Employment and projected occupational demand for installation, maintenance and repair occupations, 2017-2022 *(continued)*

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
49-9043	Maintenance Workers, Machinery	182	14	8%	94	22
49-2011	Computer, Automated Teller, and Office Machine Repairers	168	(7)	(4%)	79	17
49-9044	Millwrights	136	5	3%	61	14
49-3041	Farm Equipment Mechanics and Service Technicians	132	11	9%	64	15
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	95	10	10%	50	12
49-3051	Motorboat Mechanics and Service Technicians	88	3	4%	46	10
49-9031	Home Appliance Repairers	85	(1)	(1%)	39	8
49-3092	Recreational Vehicle Service Technicians	75	3	4%	47	10
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	73	5	7%	32	8
49-9062	Medical Equipment Repairers	69	6	9%	30	7
49-9094	Locksmiths and Safe Repairers	66	(3)	(4%)	29	6
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	65	14	21%	30	9
49-3052	Motorcycle Mechanics	62	3	5%	32	7
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	58	(8)	(15%)	26	5
49-2092	Electric Motor, Power Tool, and Related Repairers	57	4	7%	27	7
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	55	2	4%	24	6
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	48	(3)	(7%)	24	5
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairs	44	2	4%	23	5
49-9063	Musical Instrument Repairers and Tuners	40	1	2%	17	4
49-9069	Precision Instrument and Equipment Repairers, All Other	32	1	4%	14	3
49-3043	Rail Car Repairers	29	(1)	(5%)	13	3
49-2091	Avionics Technicians	28	1	4%	11	2
49-9093	Fabric Menders, Except Garment	26	0	1%	12	3
	All Other Installation, Maintenance, and Repair Occupations	38	Insf data	Insf Data	11	3
TOTAL		12,860	644	5%	6,071	1,374



Exhibit 48. Comparison of installation, maintenance and repair entry-level and experienced wages with regional living wage, Far North Region, 2017

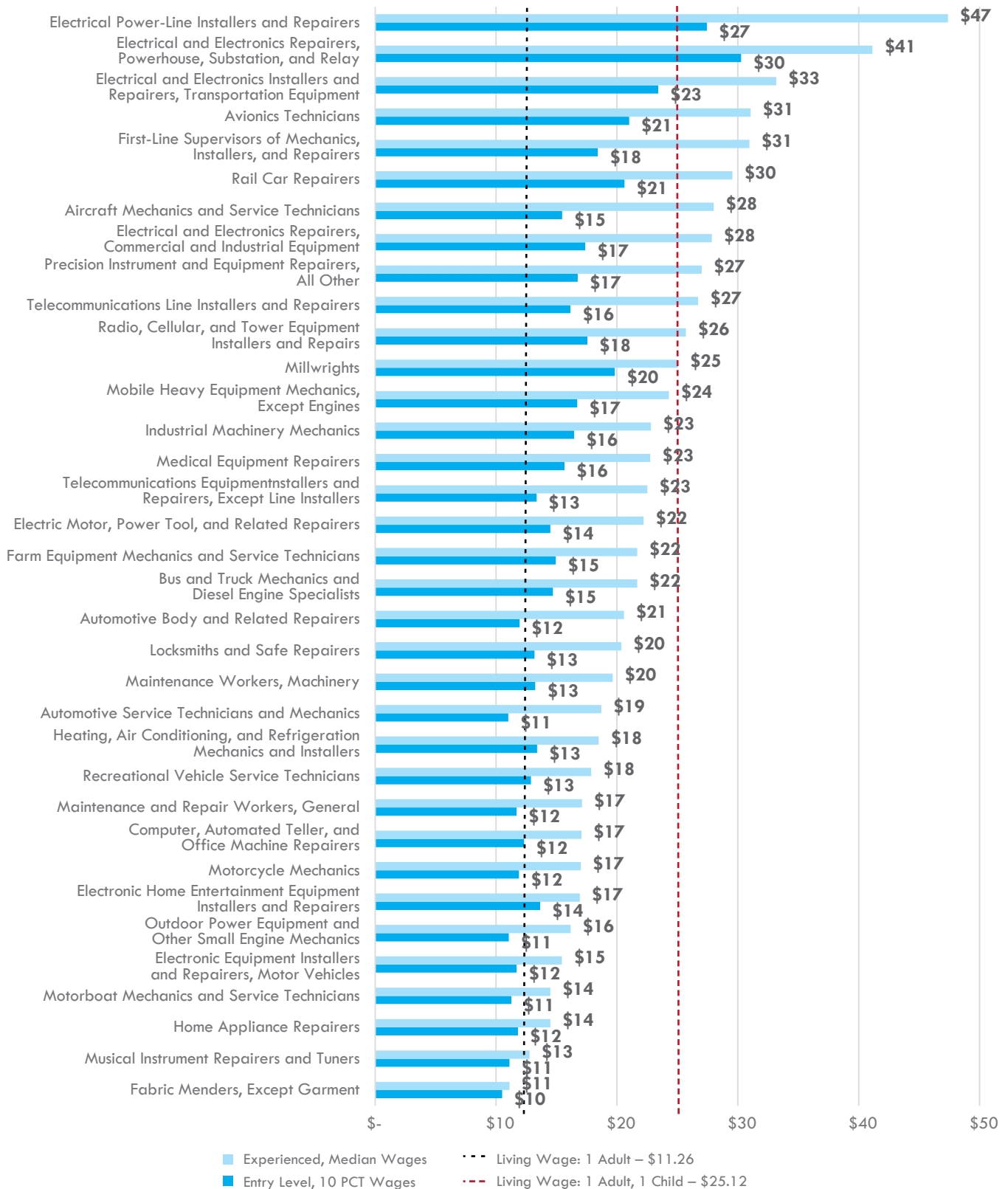




Exhibit 49. Education and training requirements for installation, maintenance and repair occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
49-9071	Maintenance and Repair Workers, General	High school diploma or equivalent	Moderate-term	38%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	High school diploma or equivalent	None	43%
49-2011	Computer, Automated Teller, and Office Machine Repairers	Some college, no degree	Short-term	55%
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairs	Associate degree	Moderate-term	52%
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	Postsecondary nondegree award	Moderate-term	52%
49-2091	Avionics Technicians	Associate degree	None	62%
49-2092	Electric Motor, Power Tool, and Related Repairers	High school diploma or equivalent	Moderate-term	47%
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	Postsecondary nondegree award	Long-term	50%
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	Postsecondary nondegree award	Long-term	50%
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	Postsecondary nondegree award	Moderate-term	50%
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	High school diploma or equivalent	Moderate-term	41%
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	Postsecondary nondegree award	Short-term	42%
49-3011	Aircraft Mechanics and Service Technicians	Postsecondary nondegree award	None	63%
49-3021	Automotive Body and Related Repairers	High school diploma or equivalent	Long-term	26%
49-3023	Automotive Service Technicians and Mechanics	Postsecondary nondegree award	Short-term	35%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	High school diploma or equivalent	Long-term	35%
49-3041	Farm Equipment Mechanics and Service Technicians	High school diploma or equivalent	Long-term	38%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	High school diploma or equivalent	Long-term	38%
49-3043	Rail Car Repairers	High school diploma or equivalent	Long-term	38%
49-3051	Motorboat Mechanics and Service Technicians	High school diploma or equivalent	Long-term	34%
49-3052	Motorcycle Mechanics	Postsecondary nondegree award	Short-term	34%
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	High school diploma or equivalent	Moderate-term	34%

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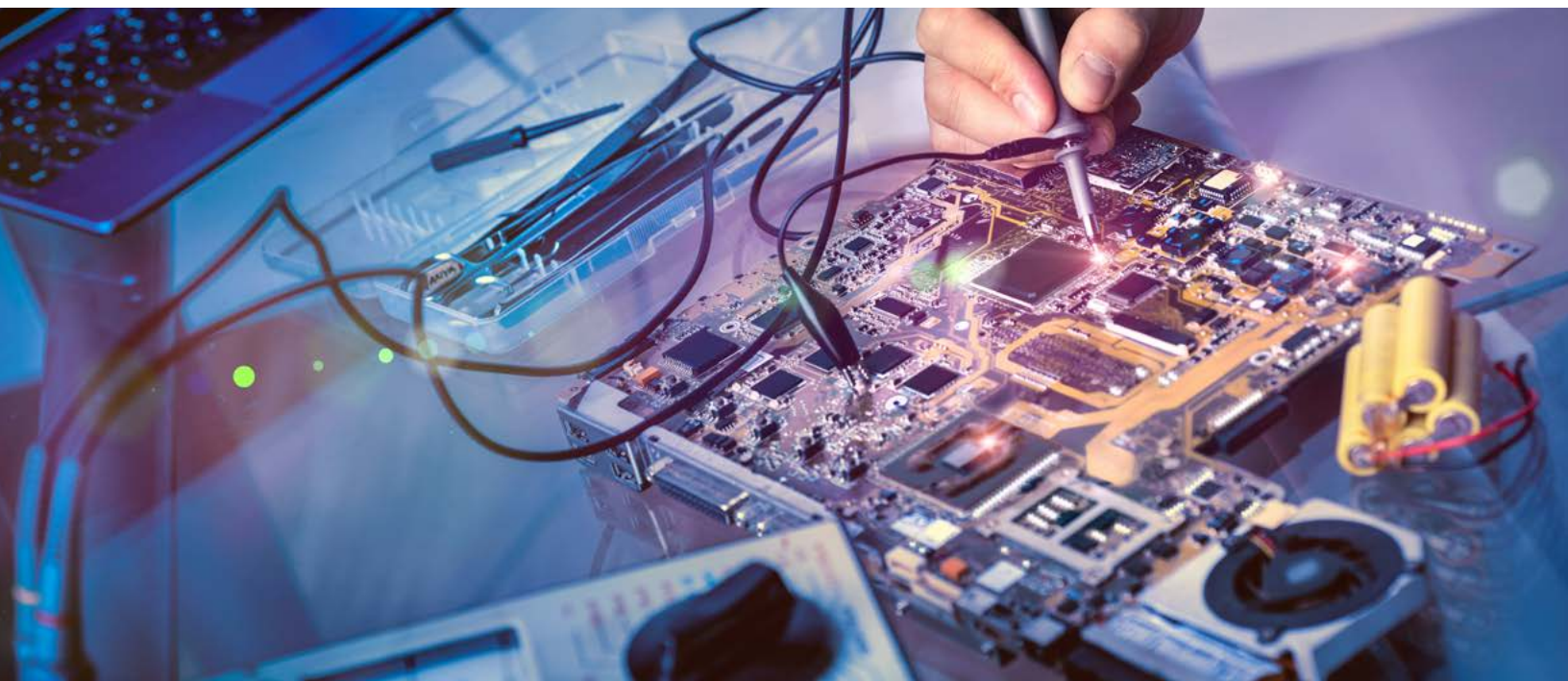

Exhibit 49. Education and training requirements for installation, maintenance and repair occupations (continued)

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
49-3092	Recreational Vehicle Service Technicians	High school diploma or equivalent	Long-term	25%
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Postsecondary nondegree award	Long-term	41%
49-9031	Home Appliance Repairers	High school diploma or equivalent	Moderate-term	43%
49-9041	Industrial Machinery Mechanics	High school diploma or equivalent	Long-term	42%
49-9043	Maintenance Workers, Machinery	High school diploma or equivalent	Long-term	42%
49-9044	Millwrights	High school diploma or equivalent	Apprenticeship	47%
49-9051	Electrical Power-Line Installers and Repairers	High school diploma or equivalent	Long-term	49%
49-9052	Telecommunications Line Installers and Repairers	High school diploma or equivalent	Long-term	46%
49-9062	Medical Equipment Repairers	Associate degree	Moderate-term	48%
49-9063	Musical Instrument Repairers and Tuners	High school diploma or equivalent	Apprenticeship	48%
49-9069	Precision Instrument and Equipment Repairers, All Other	High school diploma or equivalent	Long-term	48%
49-9093	Fabric Menders, Except Garment	High school diploma or equivalent	Long-term	37%
49-9094	Locksmiths and Safe Repairers	High school diploma or equivalent	Long-term	38%



Exhibit 50. Community college program headcounts and average annual awards, installation, maintenance and repair occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
11600	Agricultural Power Equipment Technology	503	34	5
93400	Electronics and Electric Technology	80		
93410	Computer Electronics	9	4	
94500	Industrial Systems Technology and Maintenance	11	0	
94600	Environmental Control Technology	16		
94610	Energy Systems Technology	211	1	
94700	Diesel Technology	320	4	7
94720	Heavy Equipment Maintenance	48		
94730	Heavy Equipment Operation	305	34	
94800	Automotive Technology	1,570	54	16
94840	Alternative Fuels and Advanced Transportation Technology	26		
94900	Automotive Collision Repair	9		
95220	Electrical	101	3	
95600	Manufacturing and Industrial Technology	280	4	2
TOTAL		3,489	138	30



➤ Key Findings

- The legal occupational group is small. There are about 500 middle-skill jobs.
- Paralegals and legal assistants is projected to have 39 annual openings. The remaining three middle-skill occupations in the legal occupational group have negligible openings.
- Paralegals and legal assistants earn an hourly wage of \$24 per hour, near the living wage threshold for a one-adult, one-child household.
- The Far North Region has only one related program category with a reported student headcount—escrow. No other programs posted headcounts, and no program, including escrow, reported conferring awards.

Exhibit 51. Employment and projected occupational demand for legal occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
23-2011	Paralegals and Legal Assistants	327	27	8%	169	39
23-2091	Court Reporters	40	1	2%	16	4
23-2093	Title Examiners, Abstractors, and Searchers	83	2	2%	34	8
23-2099	Legal Support Workers, All Other	55	3	6%	23	5
TOTAL		505	33	6%	242	56

Exhibit 52. Comparison of legal entry-level and experienced wages with regional living wage, Far North Region, 2017

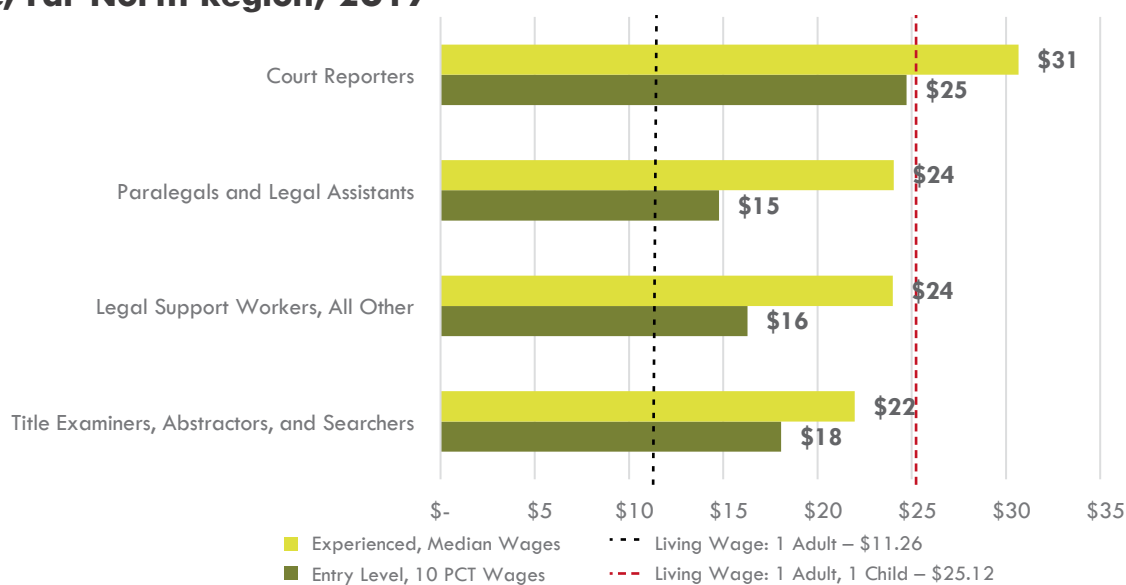


Exhibit 53. Education and training requirements for legal occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
23-2011	Paralegals and Legal Assistants	Associate degree	None	44%
23-2091	Court Reporters	Postsecondary nondegree award	Short-term	41%
23-2093	Title Examiners, Abstractors, and Searchers	High school diploma or equivalent	Moderate-term	41%
23-2099	Legal Support Workers, All Other	Associate degree	None	41%

Exhibit 54. Community college program headcounts and average annual awards, legal occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
51110	Escrow	18		
TOTAL		18		



➤ Key Findings

- The life, physical and social sciences major occupational group accounts for approximately 2,500 jobs in the Far North Region, with 300 annual openings projected.
- The highest demand within the cluster is forest and conservation technicians, with 227 openings projected annually over the next five years. Other middle-skill occupations in the cluster have scant demand.
- Annual openings in this group are due almost exclusively to replacement jobs, not employment growth.
- Forest and conservation technicians earn \$17 per hour.
- In the region, the student headcount totals 2,900, which is concentrated in agricultural technology and sciences, general; animal science; and plant science. Agricultural technology and sciences, general, produces a significant number of awards on an annual basis. Each year, 66 awards are conferred annually by related programs.

Exhibit 55. Employment and projected occupational demand for life, physical and social sciences occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
19-4093	Forest and Conservation Technicians	1,924	(23)	(1%)	1,097	227
19-4099	Life, Physical, and Social Science Technicians, All Other	174	11	6%	102	23
19-4091	Environmental Science and Protection Technicians, Including Health	146	7	5%	86	19
19-4011	Agricultural and Food Science Technicians	120	8	7%	61	14
19-4092	Forensic Science Technicians	46	5	11%	27	7
19-4031	Chemical Technicians	42	3	8%	20	5
19-4061	Social Science Research Assistants	31	8	26%	20	6
	All Other Life, Physical, and Social Science Occupations	21	0	2%	11	2
TOTAL		2,505	20	1%	1,425	302





Exhibit 56. Comparison of life, physical and social sciences entry-level and experienced wages with regional living wage, Far North Region, 2017

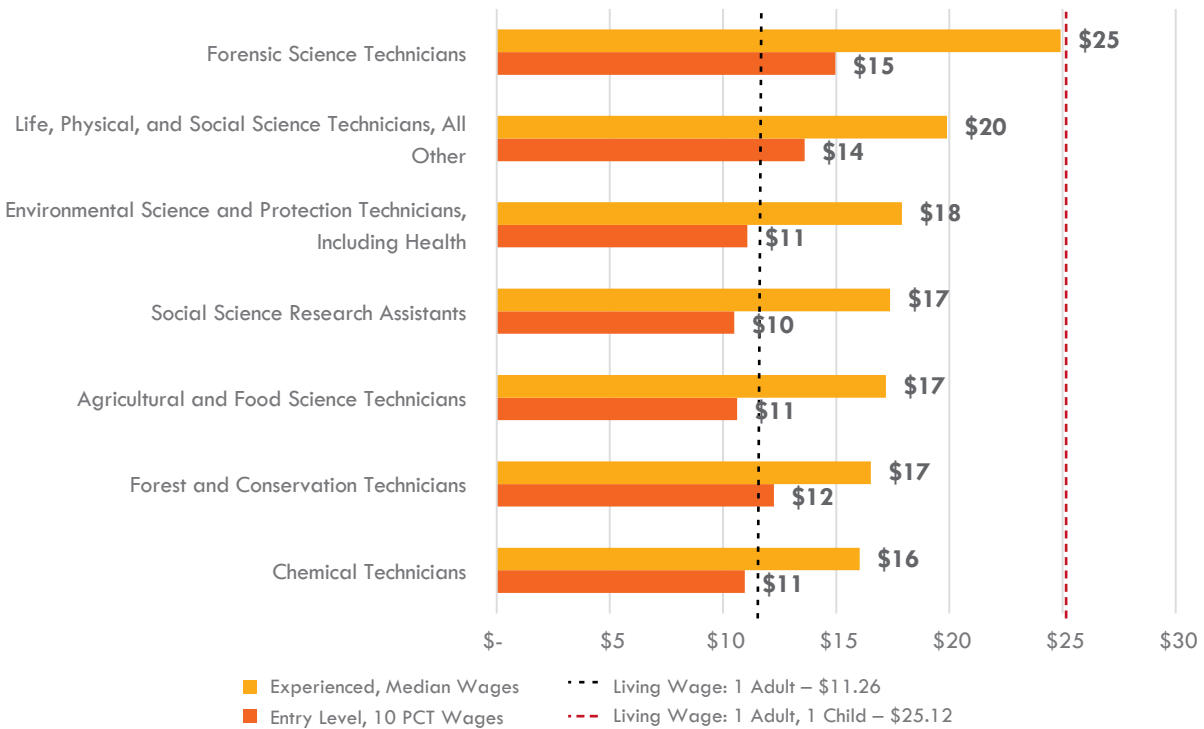


Exhibit 57. Education and training requirements for life, physical and social sciences occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
19-4093	Forest and Conservation Technicians	Associate degree	None	36%
19-4011	Agricultural and Food Science Technicians	Associate degree	Moderate-term	39%
19-4031	Chemical Technicians	Associate degree	Moderate-term	42%
19-4061	Social Science Research Assistants	Bachelor's degree	None	36%
19-4091	Environmental Science and Protection Technicians, Including Health	Associate degree	None	36%
19-4092	Forensic Science Technicians	Bachelor's degree	Moderate-term	36%
19-4099	Life, Physical, and Social Science Technicians, All Other	Associate degree	None	36%

Exhibit 58. Community college program headcounts and average annual awards, life, physical and social sciences occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
10100	Agriculture Technology and Sciences, General	895	2	51
10200	Animal Science	846	2	1
10300	Plant Science	565		2
10400	Viticulture, Enology, and Wine Business	58		
11400	Forestry	201	2	5
43000	Biotechnology and Biomedical Technology	1		
210540	Forensics, Evidence, and Investigation	318		
TOTAL		2,884	6	60





Key Findings

- Alignment between program categories and occupational categories presents special challenges in this section due to the broad spectrum of occupations included within the management occupational group. Nonetheless, a general snapshot is provided of occupational demand and related program offerings.
- There are approximately 3,200 middle-skill jobs in the management occupational group.
- Occupational demand is projected to grow by just 3 percent over the next five years in the Far North Region.
- Farmers, ranchers, and other agricultural managers is expected to have the most annual openings, 184, followed by administrative services managers, 60.
- Median wages are generally strong, ranging from \$30 to \$40 per hour. Farmers, ranchers, and other agricultural managers have median wages that are far lower, \$15 per hour.
- Related programs account for a student headcount of about 6,700 on average annually. There are, on average, approximately 400 awards issued by these programs annually.
- Business administration, and business and commerce, general confer the largest number of awards.

Exhibit 59. Employment and projected occupational demand for management occupations, 2017-2022

SOC	Occupation	2015 Jobs	5-Yr Change	5-Yr % Change	5-Yr Replacements	Annual Openings
11-9013	Farmers, Ranchers, and Other Agricultural Managers	2,223	32	1%	817	184
11-3011	Administrative Services Managers	648	39	6%	262	60
11-3071	Transportation, Storage, and Distribution Managers	281	9	3%	107	24
11-9061	Funeral Service Managers	21	3	12%	0	2
11-9161	Emergency Management Directors	22	1	6%	0	0
TOTAL		3,195	85	3%	1,185	270

Exhibit 60. Comparison of management entry-level and experienced wages with regional living wage, Far North Region, 2017

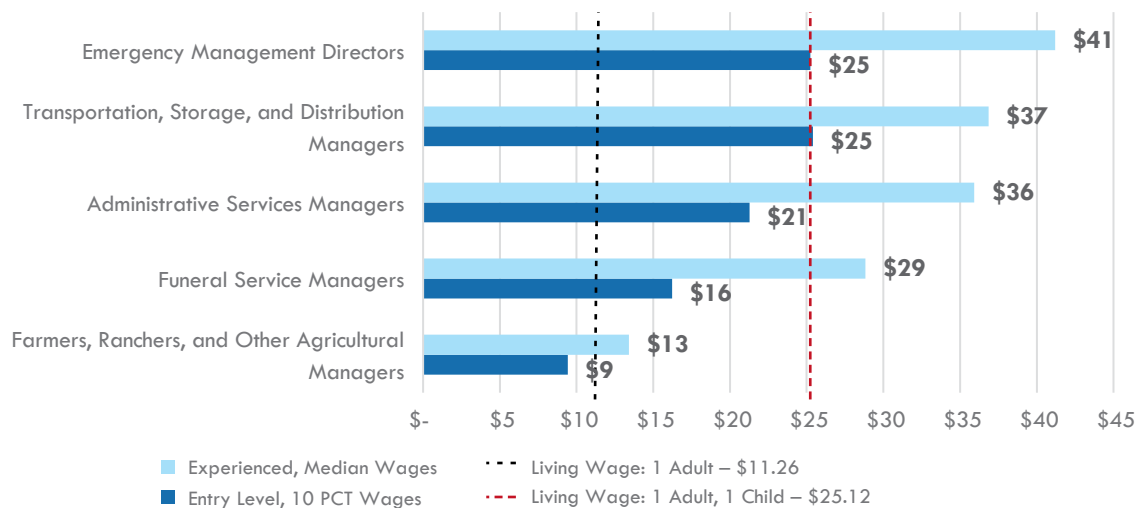
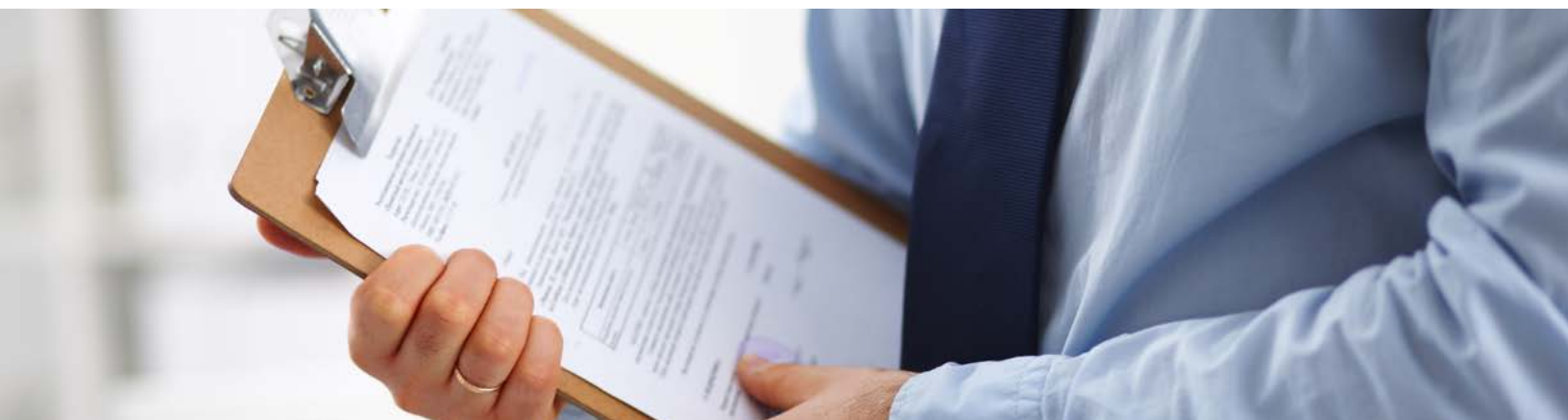


Exhibit 61. Education and training requirements for management occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
11-9013	Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	None	30%
11-3011	Administrative Services Managers	Bachelor's degree	None	38%
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	None	37%
11-9061	Funeral Service Managers	Associate degree	None	26%
11-9161	Emergency Management Directors	Bachelor's degree	None	29%

Exhibit 62. Community college program headcounts and average annual awards, management occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
11200	Agriculture Business, Sales and Service	441	2	20
50100	Business and Commerce, General	3,231	4	72
50500	Business Administration	356		234
50600	Business Management	1,066	11	43
50630	Management Development and Supervision	52		
50640	Small Business and Entrepreneurship	957	7	3
51440	Office Management	21		
10400	Viticulture, Enology, and Wine Business	58		
130710	Restaurant and Food Services and Management	422	3	
130720	Lodging Management	92		
TOTAL		6,697	26	372





➤ Key Findings

- The office and administrative support occupational group is the largest source of middle-skill jobs in the Far North Region, accounting for more than 24,000 positions in 2017.
- This occupational cluster is expected to grow slowly over the next five years (+1 percent), with a high number of replacements as the driving force contributing to annual job openings (2,800 annually for all middle-skill occupations).
- Occupations with the most annual openings include: secretaries and administrative assistants; bookkeeping, accounting, and auditing clerks; and customer service representatives.
- Hourly wages are generally below the upper living wage threshold but are above minimum wage. Most occupations have median wages near or just above \$20 per hour.
- Accounting, office technology, and software applications have the largest headcounts and on average, confer the greatest number of awards annually.





Exhibit 63. Employment and projected occupational demand for office and administrative support occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Projected Total Annual Job Openings
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	6,155	(53)	(1%)	3,243	661
43-3031	Bookkeeping, Accounting, and Auditing Clerks	4,689	14	0%	2,577	529
43-4051	Customer Service Representatives	3,128	265	8%	2,035	461
43-1011	First-Line Supervisors of Office and Administrative Support Workers	3,397	98	3%	1,664	354
43-6013	Medical Secretaries	2,103	128	6%	1,139	256
43-6011	Executive Secretaries and Executive Administrative Assistants	1,306	(82)	(6%)	672	135
43-3071	Tellers	1,075	(165)	(15%)	582	119
43-3051	Payroll and Timekeeping Clerks	478	4	1%	234	49
43-5061	Production, Planning, and Expediting Clerks	377	41	11%	197	48
43-6012	Legal Secretaries	397	(28)	(7%)	204	41
43-3011	Bill and Account Collectors	294	3	1%	152	32
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	245	7	3%	135	29
43-9021	Data Entry Keyers	246	(11)	(5%)	140	28
43-4131	Loan Interviewers and Clerks	217	8	4%	103	23
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	175	10	6%	92	21
43-3061	Procurement Clerks	119	3	3%	64	14
43-4141	New Accounts Clerks	93	(12)	(13%)	45	9
43-4011	Brokerage Clerks	30	3	10%	16	4
43-5011	Cargo and Freight Agents	34	2	6%	14	3
43-4041	Credit Authorizers, Checkers, and Clerks	28	1	5%	14	3
43-9031	Desktop Publishers	16	(1)	(8%)	0	0
TOTAL		24,602	235	1%	13,322	2,818



Exhibit 64. Comparison of office and administrative support entry-level and experienced wages with regional living wage, Far North Region, 2017

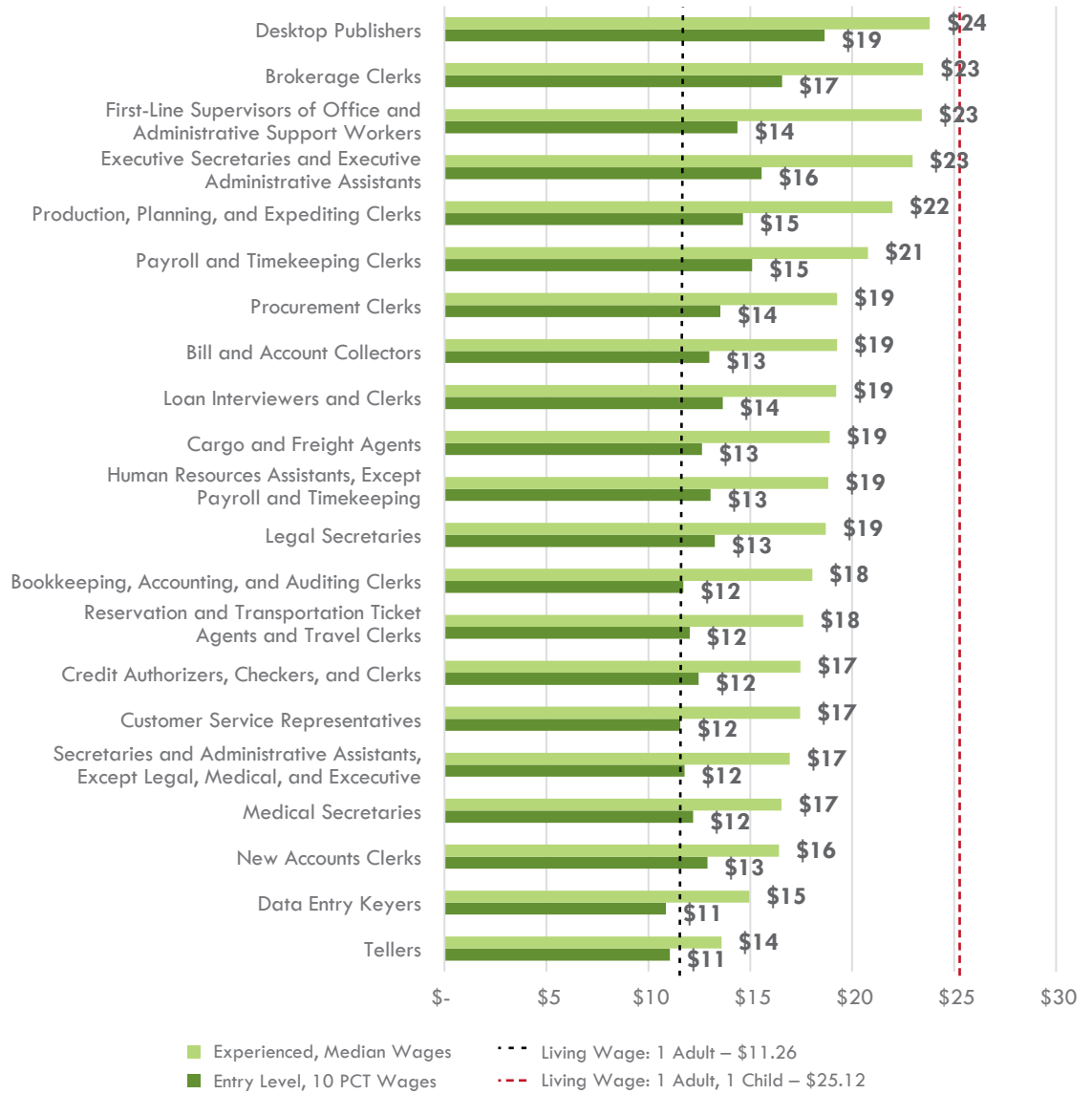




Exhibit 65. Education and training requirements for office and administrative support occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
43-1011	First-Line Supervisors of Office and Administrative Support Workers	High school diploma or equivalent	None	39%
43-3011	Bill and Account Collectors	High school diploma or equivalent	Moderate-term	47%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	Some college, no degree	Moderate-term	49%
43-3051	Payroll and Timekeeping Clerks	High school diploma or equivalent	Moderate-term	47%
43-3061	Procurement Clerks	High school diploma or equivalent	Moderate-term	34%
43-3071	Tellers	High school diploma or equivalent	Short-term	44%
43-4011	Brokerage Clerks	High school diploma or equivalent	Moderate-term	30%
43-4041	Credit Authorizers, Checkers, and Clerks	High school diploma or equivalent	Moderate-term	43%
43-4051	Customer Service Representatives	High school diploma or equivalent	Short-term	43%
43-4131	Loan Interviewers and Clerks	High school diploma or equivalent	Short-term	50%
43-4141	New Accounts Clerks	High school diploma or equivalent	Moderate-term	48%
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	Associate degree	None	40%
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	High school diploma or equivalent	Short-term	44%
43-5011	Cargo and Freight Agents	High school diploma or equivalent	Short-term	56%
43-5061	Production, Planning, and Expediting Clerks	High school diploma or equivalent	Moderate-term	40%
43-6011	Executive Secretaries and Executive Administrative Assistants	High school diploma or equivalent	None	47%
43-6012	Legal Secretaries	High school diploma or equivalent	Moderate-term	47%
43-6013	Medical Secretaries	High school diploma or equivalent	Moderate-term	47%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	High school diploma or equivalent	Short-term	47%
43-9021	Data Entry Keyers	High school diploma or equivalent	Short-term	46%
43-9031	Desktop Publishers	Associate degree	Short-term	42%



Exhibit 66. Community college program headcounts and average annual awards, office and administrative support occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
50200	Accounting	2,895	47	50
50400	Banking and Finance	142		
50630	Management Development and Supervision	52		
50940	Sales and Salesmanship	36		
50970	E-Commerce (business emphasis)	19	1	
51400	Office Technology/Office Computer Applications	2,917	49	39
51410	Legal Office Technology	46	3	2
51420	Medical Office Technology	851	33	31
51440	Office Management	21		
51800	Customer Service	118	2	
61400	Digital Media	176		0
61410	Multimedia	212	14	14
61450	Desktop Publishing	21		
70210	Software Applications	2,875	10	5
120820	Administrative Medical Assisting	22		
TOTAL		10,403	158	141



➤ Key Findings

- Personal care and service has 8,100 middle-skill jobs in the Far North Region.
- This occupational group is not projected to grow over the next five years. This is mostly due to job loss among childcare workers. Many occupations, including childcare workers, have dozens of annual openings, often due to high rates of replacements. Despite the no-growth outlook, 1,200 annual openings are projected for this occupational group through 2022.
- Childcare workers; recreation workers; and hairdressers, hairstylists and cosmetologists are projected to have the highest number of annual openings in the 2017-2022 period.
- Wages are generally dismal in this occupational group. In-demand occupations based on number of openings pay just over the minimum wage, and far below the upper threshold for a living wage.
- A host of programs prepare students to enter personal care and service occupations. The largest programs by headcount include child development/early care and education; cosmetology and barbering; parks and outdoor recreation; and fitness trainer.
- Nearly all programs in this category, with the exception of cosmetology and barbering, and child development/early care and education do not convert headcount toward award production.

Exhibit 67. Employment and projected occupational demand for personal care and service occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
39-9011	Childcare Workers	3,152	(342)	(11%)	2,158	437
39-5012	Hairdressers, Hairstylists, and Cosmetologists	1,719	60	3%	1,021	218
39-9032	Recreation Workers	1,455	78	5%	1,224	261
39-9031	Fitness Trainers and Aerobics Instructors	996	32	3%	834	176
39-5092	Manicurists and Pedicurists	410	22	5%	232	52
39-2011	Animal Trainers	199	(1)	0%	110	23
39-5094	Skincare Specialists	112	8	8%	64	15
39-5011	Barbers	100	0	0%	45	10
39-4031	Morticians, Undertakers, and Funeral Directors	35	8	22%	23	6
TOTAL		8,190	(133)	(2%)	5,711	1,201

Exhibit 68. Comparison of personal care and service entry-level and experienced wages with regional living wage, Far North Region, 2017

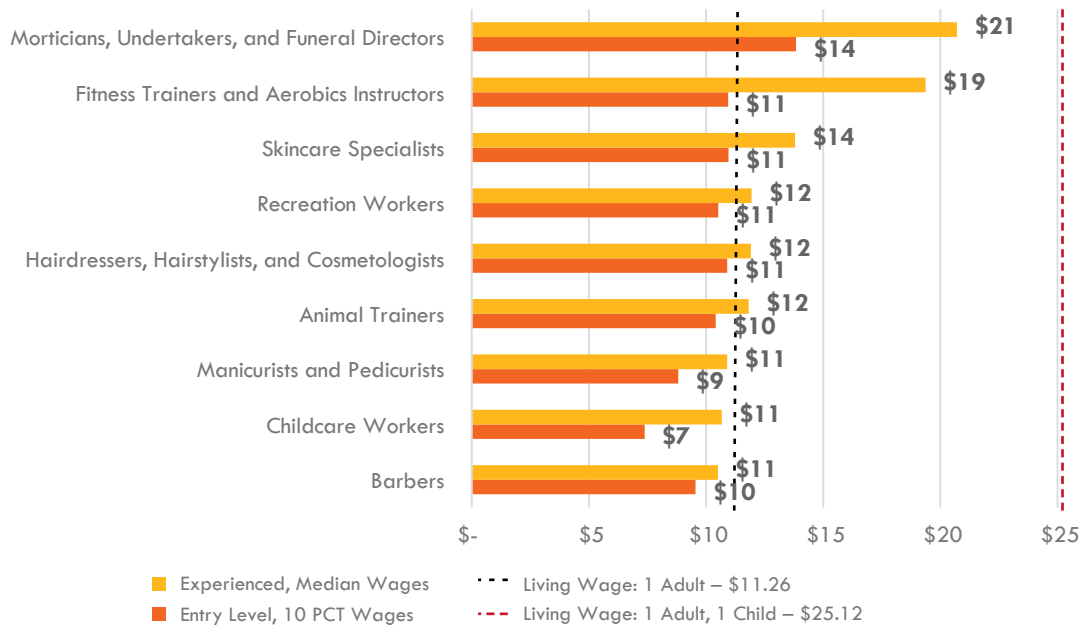


Exhibit 69. Education and training requirements for personal care and service occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
39-2011	Animal Trainers	High school diploma or equivalent	Moderate-term	39%
39-4031	Morticians, Undertakers, and Funeral Directors	Associate degree	Long-term	49%
39-5011	Barbers	Postsecondary nondegree award	None	35%
39-5012	Hairdressers, Hairstylists, and Cosmetologists	Postsecondary nondegree award	None	43%
39-5092	Manicurists and Pedicurists	Postsecondary nondegree award	None	28%
39-5094	Skincare Specialists	Postsecondary nondegree award	None	28%
39-9011	Childcare Workers	High school diploma or equivalent	Short-term	37%
39-9031	Fitness Trainers and Aerobics Instructors	High school diploma or equivalent	Short-term	34%
39-9032	Recreation Workers	High school diploma or equivalent	Short-term	34%
39-7011	Tour Guides and Escorts	High school diploma or equivalent	Moderate-term	37%
39-7012	Travel Guides	High school diploma or equivalent	Moderate-term	37%
39-9011	Childcare Workers	High school diploma or equivalent	Short-term	37%
39-9031	Fitness Trainers and Aerobics Instructors	High school diploma or equivalent	Short-term	34%
39-9032	Recreation Workers	High school diploma or equivalent	Short-term	34%

Exhibit 70. Community college program headcounts and average annual awards, personal care and service occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
10240	Equine Science	373		6
11510	Parks and Outdoor Recreation	641	5	1
83520	Fitness Trainer	333		
83610	Recreation Assistant	23		
122800	Athletic Training and Sports Medicine	326		
130500	Child Development/Early Care and Education	5,692	181	105
130540	Preschool Age Child	196		
130550	The School Age Child	23		
130590	Infants and Toddlers	181		
300700	Cosmetology and Barbering	726	172	8
TOTAL		8,515	357	120



Key Findings

- The production occupational group had more than 5,000 middle-skill jobs in the Far North Region in 2017.
- This major occupational group is expected to grow by 7 percent between 2017 and 2022, with 600 annual openings.
- Occupations with the most projected annual openings include first-line supervisors of production and operating workers; water and waste water treatment plant and system operators; inspectors, testers, sorters, samplers, and weighers; and welders, cutters, solderers, and brazers. Other occupations have significant demand.
- More than half of the occupations pay near or above \$20 per hour. Only the top third have median wages above the living wage for a one-adult, one-child household.
- Related programs have an annual headcount of 3,700 and produce about 300 awards on average.
- The top programs by headcount and awards include welding; machining and machine tools; and manufacturing and industrial technology.



Exhibit 71. Employment and projected occupational demand for production occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Projected Total Annual Job Openings
51-1011	First-Line Supervisors of Production and Operating Workers	1,077	80	7%	533	123
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	673	31	5%	404	88
51-4121	Welders, Cutters, Solderers, and Brazers	643	60	9%	350	83
51-8031	Water and Wastewater Treatment Plant and System Operators	746	11	1%	308	66
51-3021	Butchers and Meat Cutters	469	20	4%	289	63
51-4041	Machinists	251	21	8%	129	32
51-8013	Power Plant Operators	183	62	34%	88	30
51-5112	Printing Press Operators	180	14	8%	96	24
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	186	4	2%	94	20
51-9071	Jewelers and Precious Stone and Metal Workers	114	11	10%	62	15
51-7099	Woodworkers, All Other	88	7	8%	49	12
51-8021	Stationary Engineers and Boiler Operators	78	6	7%	42	10
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	67	8	13%	34	9
51-9081	Dental Laboratory Technicians	67	1	1%	37	8
51-8012	Power Distributors and Dispatchers	29	7	24%	14	4
51-9083	Ophthalmic Laboratory Technicians	29	3	10%	16	4
51-5111	Prepress Technicians and Workers	27	1	2%	16	4
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	28	2	9%	15	4
51-9011	Chemical Equipment Operators and Tenders	22	2	9%	12	3
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	21	2	8%	10	3
51-8092	Gas Plant Operators	21	0	1%	11	2
	All Other Production Occupations	65	10	16%	12	8
TOTAL		5,064	363	7%	2,620	615

Exhibit 72. Comparison of production entry-level and experienced wages with regional living wage, Far North Region, 2017

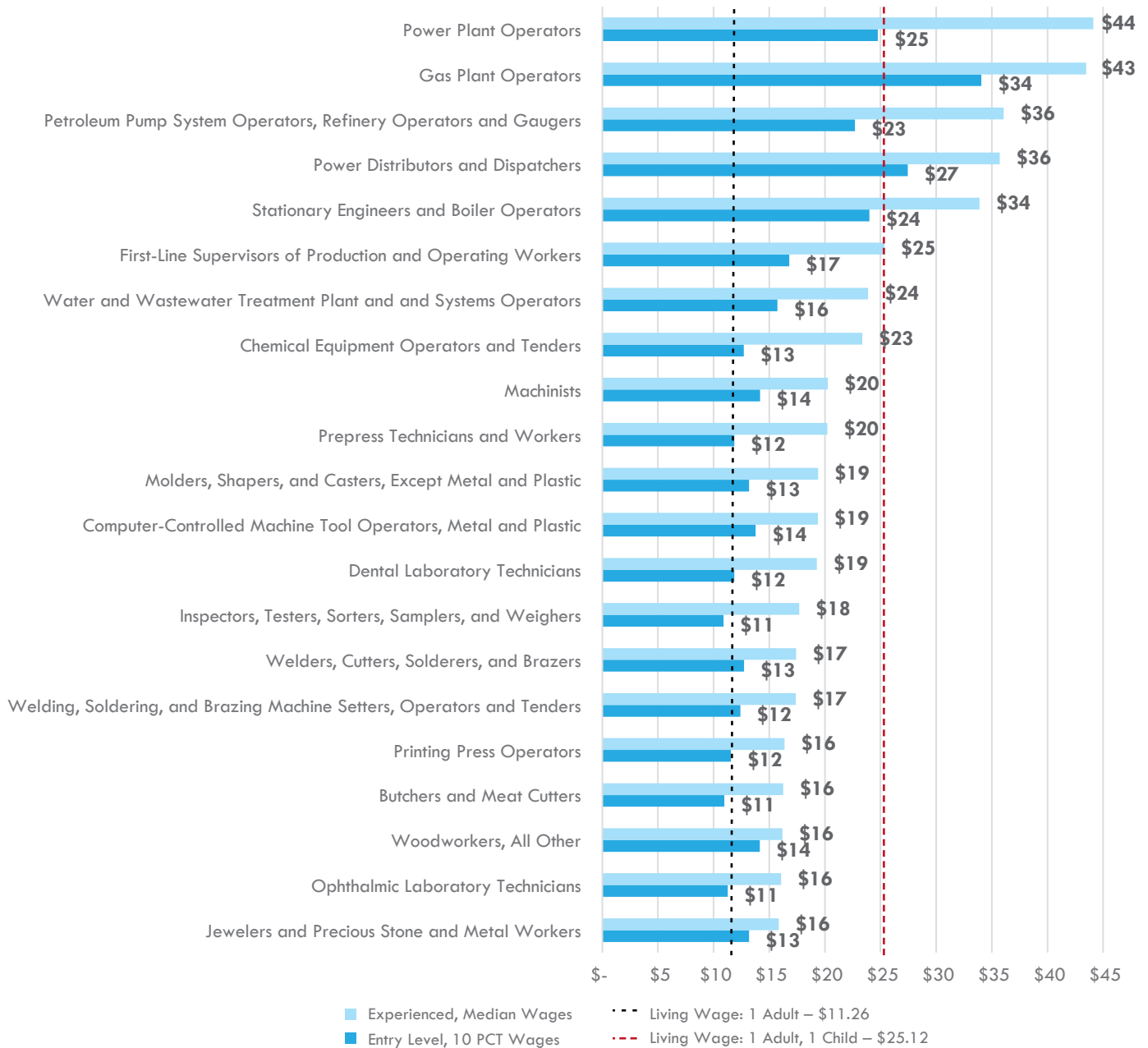


Exhibit 73. Education and training requirements for production occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
51-1011	First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	None	35%
51-3021	Butchers and Meat Cutters	No formal educational credential	Long-term	23%
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	High school diploma or equivalent	Moderate-term	43%
51-4041	Machinists	High school diploma or equivalent	Long-term	40%
51-4121	Welders, Cutters, Solderers, and Brazers	High school diploma or equivalent	Moderate-term	31%
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	High school diploma or equivalent	Moderate-term	31%
51-5111	Prepress Technicians and Workers	Postsecondary nondegree award	None	39%
51-5112	Printing Press Operators	High school diploma or equivalent	Moderate-term	32%
51-7099	Woodworkers, All Other	High school diploma or equivalent	Moderate-term	26%
51-8012	Power Distributors and Dispatchers	High school diploma or equivalent	Long-term	49%
51-8013	Power Plant Operators	High school diploma or equivalent	Long-term	49%
51-8021	Stationary Engineers and Boiler Operators	High school diploma or equivalent	Long-term	39%
51-8031	Water and Wastewater Treatment Plant and System Operators	High school diploma or equivalent	Long-term	41%
51-8092	Gas Plant Operators	High school diploma or equivalent	Long-term	42%
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	High school diploma or equivalent	Moderate-term	42%
51-9011	Chemical Equipment Operators and Tenders	High school diploma or equivalent	Moderate-term	36%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	Moderate-term	38%
51-9071	Jewelers and Precious Stone and Metal Workers	High school diploma or equivalent	Long-term	35%
51-9081	Dental Laboratory Technicians	High school diploma or equivalent	Moderate-term	52%
51-9083	Ophthalmic Laboratory Technicians	High school diploma or equivalent	Moderate-term	52%
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	High school diploma or equivalent	Long-term	27%

Exhibit 74. Community college program headcounts and average annual awards, production occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
43000	Biotechnology and Biomedical Technology	1		
93400	Electronics and Electric Technology	80		
93410	Computer Electronics	9	4	
94500	Industrial Systems Technology and Maintenance	11	0	
95250	Mill and Cabinet Work	188	22	
95600	Manufacturing and Industrial Technology	280	4	2
95630	Machining and Machine Tools	253	5	4
95650	Welding Technology	2,780	235	21
95800	Water and Wastewater Technology	90	4	
TOTAL		3,693	275	27





Key Findings

- In 2017, 74 percent of jobs in protective service in the Far North Region were middle skill, accounting for nearly 7,000 jobs.
- This occupational group is projected to grow by 3 percent over the next five years, with more than 500 annual openings.
- Occupations with the most annual openings include correctional officers and jailors, police and sheriff's patrol officers, and firefighters.
- With one exception, these occupations pay wages that are above the living wage for a one-adult, one-child household. As a group, wages are the highest of any category in this study and range from \$24 per hour to \$63 per hour.
- The Far North Region's protective service programs yield an annual headcount of more than 9,400 students. About 600 awards are conferred on average annually.
- Administration of justice, wildland fire technology, fire technology, and police academy represent the largest program areas in the Far North Region.

Exhibit 75. Employment and projected occupational demand for protective service occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
33-3012	Correctional Officers and Jailors	2,418	(37)	(2%)	959	197
33-3051	Police and Sheriff's Patrol Officers	1,993	114	6%	641	152
33-2011	Firefighters	1,543	74	5%	511	117
33-1011	First-Line Supervisors of Correctional Officers	352	(8)	(2%)	113	23
33-1012	First-Line Supervisors of Police and Detectives	215	15	7%	65	16
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	172	10	6%	57	13
33-3021	Detectives and Criminal Investigators	121	10	8%	39	10
33-2021	Fire Inspectors and Investigators	40	4	10%	21	5
33-9093	Transportation Security Screeners	25	2	7%	11	3
33-3031	Fish and Game Wardens	20	1	6%	0	2
33-3052	Transit and Railroad Police	23	1	4%	0	0
	All Other Protective Service Occupations	23	3	15%	0	0
TOTAL		6,944	189	3%	2,418	539



Exhibit 76. Comparison of protective service entry-level and experienced wages with regional living wage, Far North Region, 2017

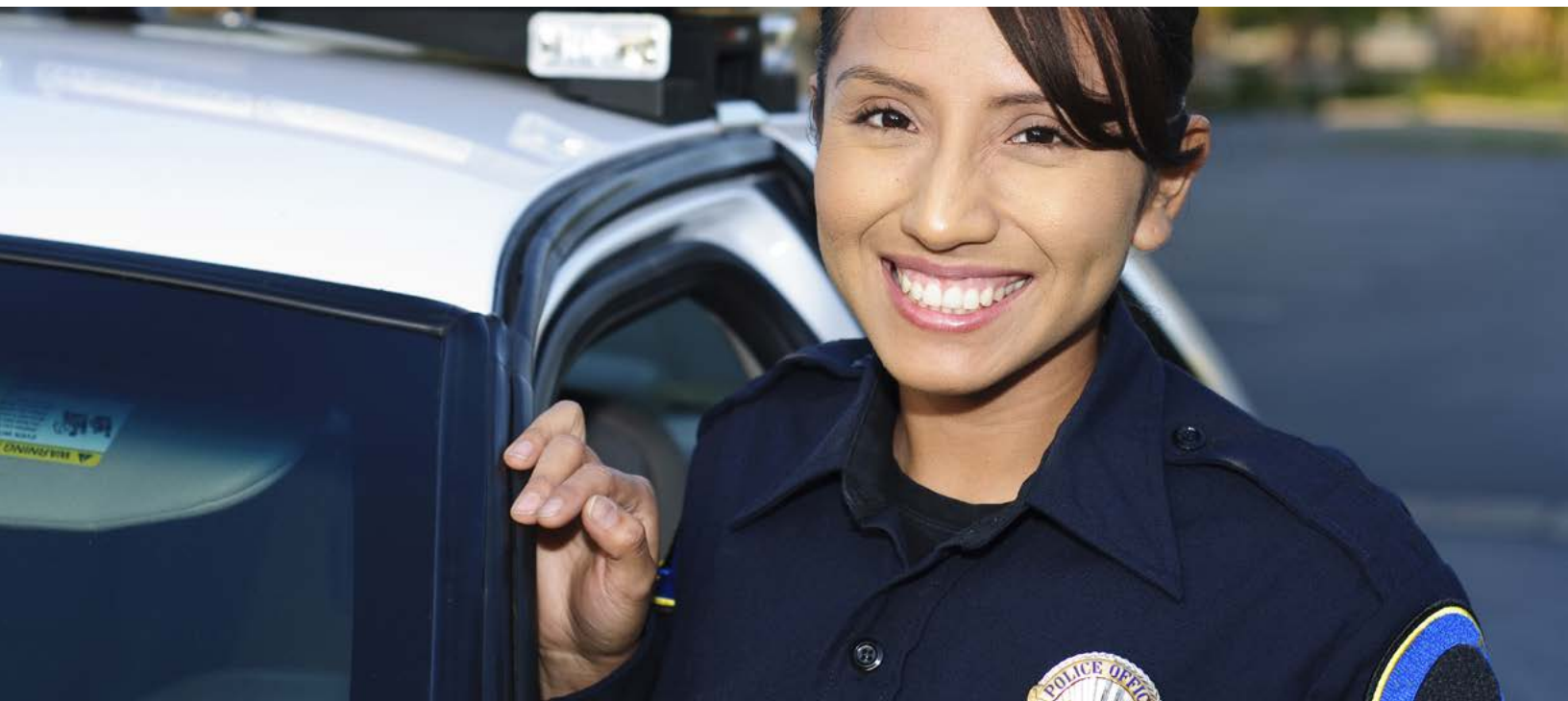
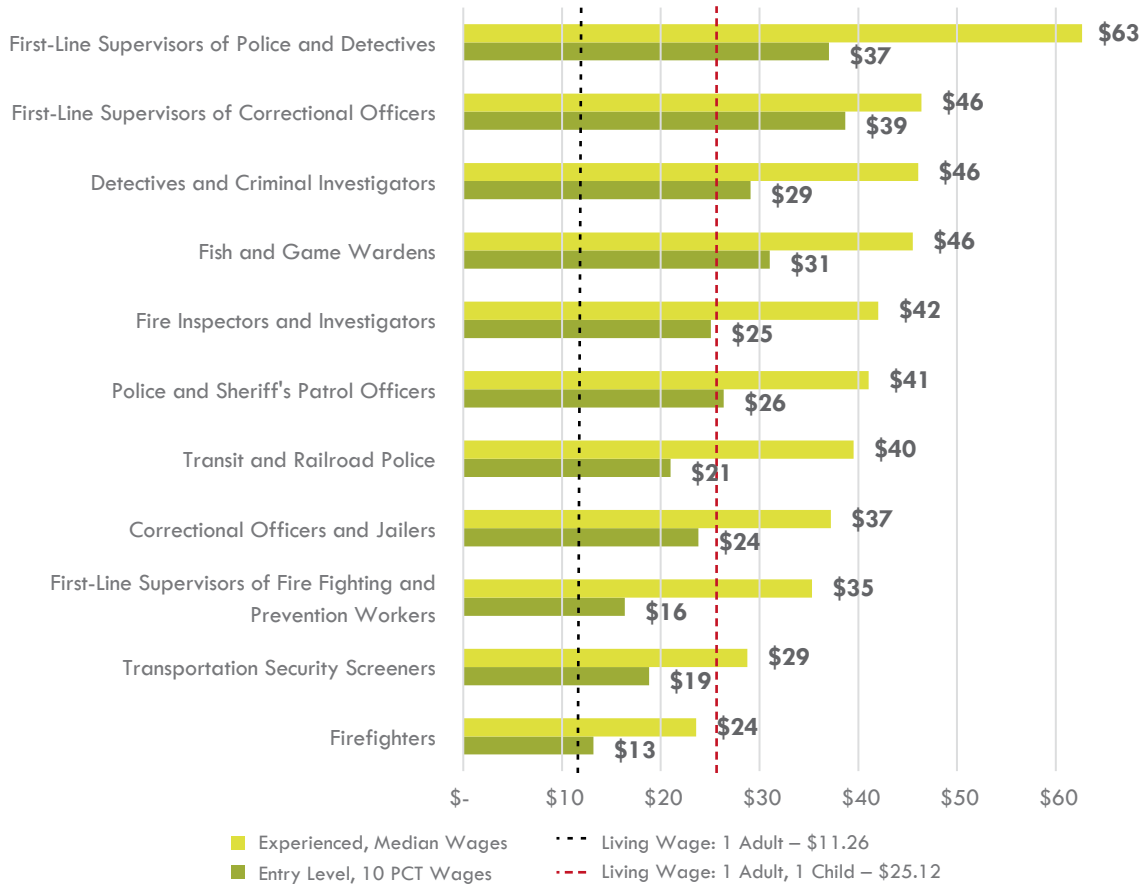




Exhibit 77. Education and training requirements for protective service occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
33-1011	First-Line Supervisors of Correctional Officers	High school diploma or equivalent	None	48%
33-1012	First-Line Supervisors of Police and Detectives	High school diploma or equivalent	Moderate-term	47%
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	Postsecondary nondegree award	Moderate-term	59%
33-2011	Firefighters	Postsecondary nondegree award	Long-term	61%
33-2021	Fire Inspectors and Investigators	Postsecondary nondegree award	Moderate-term	56%
33-3012	Correctional Officers and Jailers	High school diploma or equivalent	Moderate-term	50%
33-3021	Detectives and Criminal Investigators	High school diploma or equivalent	Moderate-term	38%
33-3031	Fish and Game Wardens	Bachelor's degree	Moderate-term	44%
33-3051	Police and Sheriff's Patrol Officers	High school diploma or equivalent	Moderate-term	48%
33-3052	Transit and Railroad Police	High school diploma or equivalent	Moderate-term	48%
33-9093	Transportation Security Screeners	High school diploma or equivalent	Short-term	44%

Exhibit 78. Community college program headcounts and average annual awards, protective service occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
11520	Wildlife and Fisheries	39	6	
210500	Administration of Justice	4,656	26	161
210510	Corrections	38	1	0
210530	Industrial and Transportation Security	4		
210550	Police Academy	719	146	13
213300	Fire Technology	1,676	42	48
213310	Wildland Fire Technology	1,916		0
213350	Fire Academy	384	138	
TOTAL		9,431	359	222

➤ Key Findings

- With 11,500 jobs, the sales and related occupational group was the fourth-largest source of middle-skill jobs in the Far North Region in 2017.
- The category is projected to grow 5 percent over the next five years. Projections indicate nearly 1,400 annual openings.
- First-line supervisors of retail sales workers; sales representative, wholesale and manufacturing; and insurance sales agents are the top occupations by employment and annual openings.
- Sales and related wages do not stand out among the occupational groups in the study. Most occupations have median wage levels near or just above \$20 per hour, although none rise above the living wage for a one-adult, one-child household.
- Related programs have an annual headcount of 680 students on average annually but produce fewer than 10 awards on average.
- The largest programs by headcount are marketing and distribution, and real estate.

Exhibit 79. Employment and projected occupational demand for sales and related occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
41-1011	First-Line Supervisors of Retail Sales Workers	3,968	75	2%	2,074	444
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,941	153	8%	1,001	232
41-3021	Insurance Sales Agents	1,561	224	14%	779	209
41-3099	Sales Representatives, Services, All Other	1,371	127	9%	840	193
41-9022	Real Estate Sales Agents	871	(9)	(1%)	390	82
41-1012	First-Line Supervisors of Non-Retail Sales Workers	745	20	3%	335	72
41-9099	Sales and Related Workers, All Other	442	33	7%	293	65
41-3011	Advertising Sales Agents	275	(23)	(8%)	164	34
41-9021	Real Estate Brokers	255	(3)	(1%)	114	24
41-3041	Travel Agents	49	9	19%	30	8
TOTAL		11,477	606	5%	6,020	1,363

Exhibit 80. Comparison of sales and related entry-level and experienced wages with regional living wage, Far North Region, 2017

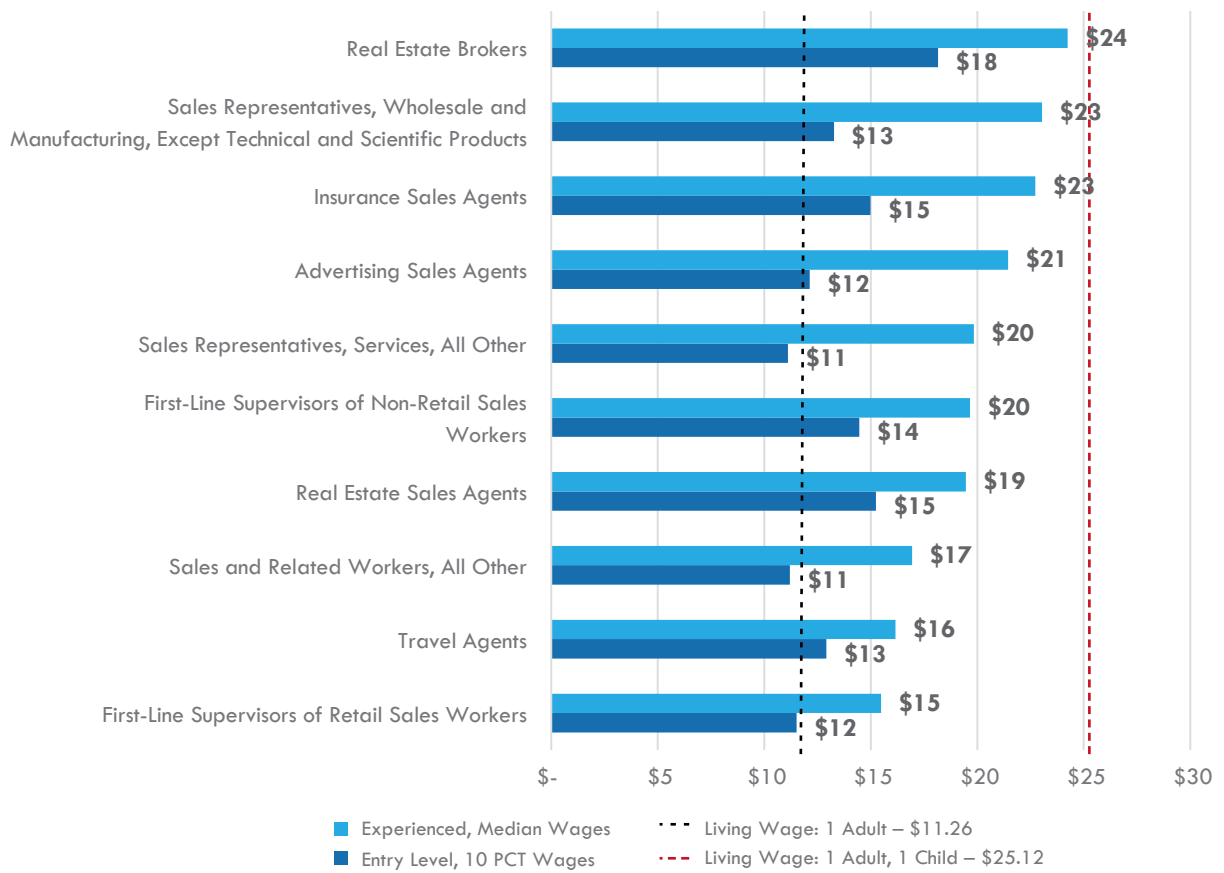


Exhibit 81. Education and training requirements for sales and related occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
41-1011	First-Line Supervisors of Retail Sales Workers	High school diploma or equivalent	None	39%
41-1012	First-Line Supervisors of Non-Retail Sales Workers	High school diploma or equivalent	None	31%
41-3011	Advertising Sales Agents	High school diploma or equivalent	Moderate-term	27%
41-3021	Insurance Sales Agents	High school diploma or equivalent	Moderate-term	35%
41-3041	Travel Agents	High school diploma or equivalent	Moderate-term	41%
41-3099	Sales Representatives, Services, All Other	High school diploma or equivalent	Moderate-term	31%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	High school diploma or equivalent	Moderate-term	31%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	High school diploma or equivalent	Moderate-term	32%
41-9021	Real Estate Brokers	High school diploma or equivalent	None	37%
41-9022	Real Estate Sales Agents	High school diploma or equivalent	Moderate-term	37%
41-9099	Sales and Related Workers, All Other	High school diploma or equivalent	None	30%

Exhibit 82. Community college program headcounts and average annual awards, sales and related occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
50650	Retail Store Operations and Management	12	0	0
50900	Marketing and Distribution	281		1
50910	Advertising	26		
50940	Sales and Salesmanship	36		
50970	E-Commerce (business emphasis)	19	1	
51100	Real Estate	291	4	3
51110	Escrow	18		
051200	Insurance	8		
300900	Travel Services and Tourism	0	0	1
TOTAL		681	5	4



Key Findings

- In 2017, transportation and material moving had 6,000 middle-skill jobs in the Far North Region and is projected to grow by 4 percent over the next five years.
- Overall, more than 700 annual openings are projected over the next five years.
- By far the largest middle-skill occupation within the transportation and material moving cluster is heavy and tractor-trailer truck drivers. This occupation is projected to have 486 annual openings. Bus drivers also have sizeable employment and annual openings.
- Wages are below \$20 per hour for the occupations with the most employment. Commercial pilots have much higher wages, \$30 per hour, and a noteworthy amount of employment.
- Community colleges in the Far North Region report a small amount of education and training activity in the TOP code Piloting. Otherwise the data reveals no activity in related programs.

Exhibit 83. Employment and projected occupational demand for transportation and material moving occupations, 2017-2022

SOC	Occupation	2017 Jobs	5-Yr Change	5-Yr Projected % Change	5-Yr Projected Replacements	Annual Openings
53-3032	Heavy and Tractor-Trailer Truck Drivers	4,194	96	2%	2,224	486
53-3022	Bus Drivers, School or Special Client	848	45	5%	514	113
53-3021	Bus Drivers, Transit and Intercity	373	26	7%	228	51
53-2012	Commercial Pilots	207	25	12%	101	26
53-6061	Transportation Attendants, Except Flight Attendants	121	3	3%	80	17
53-6051	Transportation Inspectors	70	3	4%	33	7
53-4031	Railroad Conductors and Yardmasters	51	(8)	(16%)	22	4
53-4011	Locomotive Engineers	42	(7)	(18%)	15	3
53-2021	Air Traffic Controllers	31	0	(1%)	14	3
	All Other Transportation and Material Moving Occupations	84	2	3%	10	4
TOTAL		6,021	185	3%	3,242	716



Exhibit 84. Comparison of transportation and material moving entry-level and experienced wages with regional living wage, Far North Region, 2017

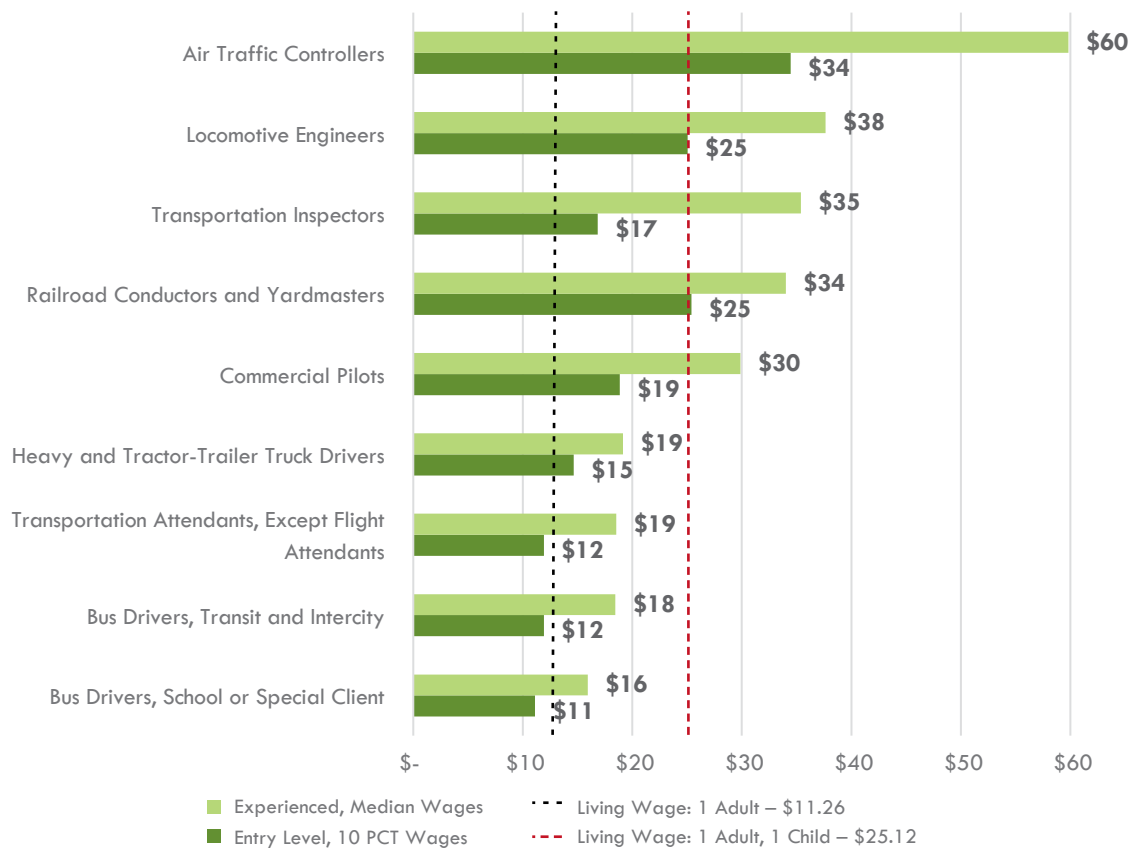




Exhibit 85. Education and training requirements for transportation and material moving occupations

SOC	Occupation	Typical Entry-Level Education (BLS)	Typical On-The-Job Training (BLS)	% of Current Workers with Associate Degree or Some College (CPS)
53-2012	Commercial Pilots	High school diploma or equivalent	Moderate-term	22%
53-2021	Air Traffic Controllers	Associate degree	Long-term	41%
53-3021	Bus Drivers, Transit and Intercity	High school diploma or equivalent	Moderate-term	37%
53-3022	Bus Drivers, School or Special Client	High school diploma or equivalent	Short-term	37%
53-3032	Heavy and Tractor-Trailer Truck Drivers	Postsecondary nondegree award	Short-term	30%
53-4011	Locomotive Engineers	High school diploma or equivalent	Moderate-term	49%
53-4031	Railroad Conductors and Yardmasters	High school diploma or equivalent	Moderate-term	48%
53-6051	Transportation Inspectors	High school diploma or equivalent	Moderate-term	44%
53-6061	Transportation Attendants, Except Flight Attendants	High school diploma or equivalent	Short-term	36%

Exhibit 86. Community college program headcounts and average annual awards, transportation and material moving occupations, 2015-18

TOP Code	TOP Title	Annual Average Headcount	Annual Average Certificates or Other Credit Awards	Annual Average Degrees
302020	Piloting	7	0	0
TOTAL		7	0	0



APPENDIX A: METHODOLOGY & IMPLICATIONS FOR ANALYSIS

Methodology and Implications for Analysis

There are several data and methods considerations for planning. These are related to the middle-skill designation and employment counts; comparing occupations and programs; projections and planning; 2016 middle-skill reports; and emerging trends.

Middle-Skill Designation and Employment Counts

The report emphasizes occupations that meet the COE's criteria and interpretation of middle-skill occupations, occupations that are most closely related to the community college level of education and training. The report only includes the occupations that met the individual selection criteria for middle skill. The analysis does not address "pipelines" or "pathway" occupations that lead into or result from community-college-level programs.

The calculations sum employment totals based on the middle-skill criteria. The first section of the report compares the amount of employment at the below-middle-skill, middle-skill, and above-middle-skill levels, indicating occupational areas that could present more training opportunities for the community colleges.

Occupations in the major groups 37-Building and Grounds Cleaning and Maintenance, and 45-Farming, Fishing, and Forestry are not included in this report because they did not meet the middle-skill criteria for inclusion. In addition, some occupations that qualify as middle skill had fewer than 10 total job openings and were truncated in the report.

Middle-skill occupations meet one or more of the following criteria based on typical entry-level education (TELE), typical on-the-job-training (OJT), and educational attainment (EA) of some college or an associate degree:

- TELE some college, a postsecondary non-degree award, or an associate degree
- TELE high school diploma or equivalent + more than short-term OJT (usually long-term)
- TELE high school diploma or equivalent with a significant amount of postsecondary educational attainment levels
- TELE bachelor's degree if a large share (a third or more) have EA at the community college level
- OJT Apprenticeship

A few occupations were included in this report that did not meet any of the previously detailed education, training or educational attainment requirements, but are established career education (CE) targets of existing community college programs in California.

Comparing Occupations and Programs

To compare occupational employment to community college programs, the analysis assumes a relationship between students and programs, and jobs in the economy. The method recognizes that the two sides of the coin each come from different data sources that measure different things using different methods.

The research employed tools developed by COE to align occupations and programs, recognizing there are many considerations for correlation. A uniform training gap analysis is not possible using the comparison suggested in the report.

Programs and students are counted by the colleges and the California Community Colleges Chancellor's Office in the DataMart, by Taxonomy of Program (TOP) code. Jobs and employment are estimated as part of surveys conducted by the Employment Development Department (EDD), especially the Occupational Employment Survey (OES). Labor market

data comes from EMSI, an economics software vendor that models the OES and other data allowing for analysis of local geographic data. The report uses EMSI 2018.4 dataset for the occupational analysis, and awards and headcount data from the Chancellor's Office DataMart. Comparing the two is an accepted method for workforce researchers but involves assumptions that have some challenges.

Furthermore, there is not a one-to-one relationship between TOP codes and occupations. For example, some TOP codes relate to more than one SOC code, which, in turn, are related to other TOP codes. For the purposes of this report, some TOP codes awards data are presented in multiple occupational groups. These are methodological challenges well known in the field for which there are no standard solutions.

There are other considerations factored into "supply" that do not have ready data solutions, except in complex econometric modeling. Other sources for labor supply include unemployed workers with similar skills or work experience, and migration of workers from outside the region.

Projections and Planning

Projections are estimates of future employment and can be used to assess the need for job training programs and gain insight into future employment trends. The estimates are based on information available at the time of the forecast and assume that historical trends will continue into the future. Unforeseen events may occur during the projection period such as major business closures or openings and natural disasters, which can have a major impact on employment levels. Regional governance efforts, including cluster- or sector-based planning with employer stakeholders, is recommended alongside research findings for program planning.

2016 Middle-Skill Reports

This report presents an update of the 2016 COE report, "Regional Labor Market Assessment: Far North Region." But it does not allow direct comparison to the 2016 report and should not be used to evaluate program performance or changes in occupational employment. Many differences exist in how the data is classified and counted since the original report was released. These include changes in the Bureau of Labor Statistics (BLS) projections methodology, which results in far larger numbers for annual openings; modeling adjustments from EMSI across baseline years; adjustments to the COE's middle-skill occupational definition; and changes in TOP code designations for community college programs.

Emerging Trends

Emerging trends in occupations may not be accurately reflected in the SOC titling and in the estimates of employment, current and future. One way to associate an "emerging job" with a traditional job title is to conduct a keyword search on O*NET to locate the SOC with the highest relevance. It is likely that the BLS will be assigning employment for the "emerging job" under that title. Real-time LMI, or job posting data, is another good source of information about emerging trends and occupations but cannot provide reliable projected demand.

Data Sources

Labor market and educational supply data compiled in this report cover the 15 counties and seven community colleges in the Far North Region. Below is a summary of the data sources found in this study.

Data Type	Source
Community College Average Headcount	Chancellor's Office MIS systems (COMIS) provided by Educational Results Partnership (ERP) by TOP06 and TOP04. Note: it would NOT be accurate to sum up TOP06 headcount to get TOP04 because of duplication issues.
Community College Awards	California Community Colleges Chancellor's Office Data Mart. The program awards module provides all credit degrees and certificates (from 6 to 60 semester units) that have been reported to the Chancellor's Office. datamart.cccco.edu
Educational Attainment Levels	Accessed through the Bureau of Labor Statistics, these data reflect patterns from the U.S. Census Bureau, Current Population Survey (CPS). The CPS is a monthly survey of about 50,000 households conducted by the Census Bureau for the Bureau of Labor Statistics. The survey has been conducted for more than 50 years.
Labor Market Information	Economic Modeling Specialists, Intl. (EMSI), Q4 2018 data release. EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry. economicmodeling.com
Living Wage	MIT Living Wage Calculator, a living wage calculator that estimates the cost of living in a specific community or region. The estimate is constructed from a weighted average of households. The rate combines the counties in the region. livingwage.mit.edu
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data. www.bls.gov/emp/ep_education_tech.htm



Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Community College Annual Average Awards: Annual average awards for a community college program are based on three-year averages across the region for years 2015-16 through 2017-18.

Community College Annual Average Headcount: Three-year average unduplicated student count in community college programs across the region, covering 2015-16 through 2017-18, including Fall, Winter and Spring semesters.

Education Attainment Level: The highest educational attainment level of workers age 25 years or older for current workers in corresponding occupations.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (EMSI) formula that includes historical employment and economic indicators along with national, state, and local trends.

Entry-Level and Experienced Wage: Hourly wages are reported in percentiles and averages. The 10th percentile is a useful proxy of entry-level wages—90% of people working in the occupation earn a higher wage—while the 50th percentile (median) wage may reflect a more experienced worker.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children. The Far North Living Wage estimate is constructed through weighting the county-level living wages by number of households in the county.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Standard Occupational Classification (SOC) System: The 2010 Standard Occupational Classification (SOC) System is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of 840 detailed occupations according to their occupational definition. Only occupations that met the community college relevant criteria were included in this study. For quick reference to the SOC definitions, please review the Occupation Definitions Reference Guide.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: Represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: Indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.

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The Centers of Excellence (COE) for Labor Market Research deliver regional workforce research and technical expertise to California Community Colleges for program decision making and resource development. This information has proven valuable to colleges in beginning, revising, or updating economic development and Career Education (CE) programs, strengthening grant applications, assisting in the accreditation process, and in supporting strategic planning efforts.

The Centers of Excellence Initiative is funded in part by the Chancellor's Office, California Community Colleges, Economic and Workforce Development Program. The Centers aspire to be the leading source of regional workforce information and insight for California Community Colleges. More information about the Centers of Excellence is available at www.coecc.net.

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