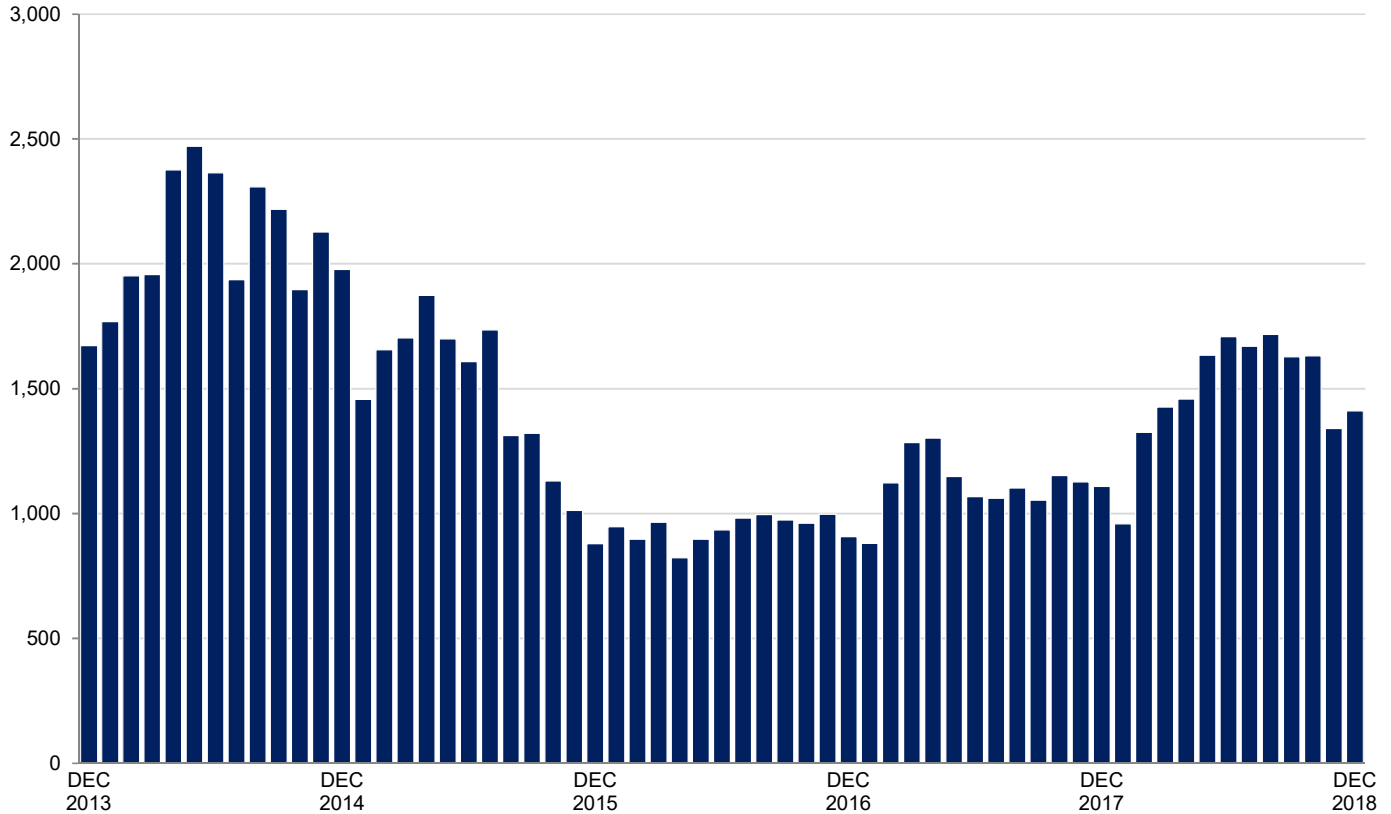


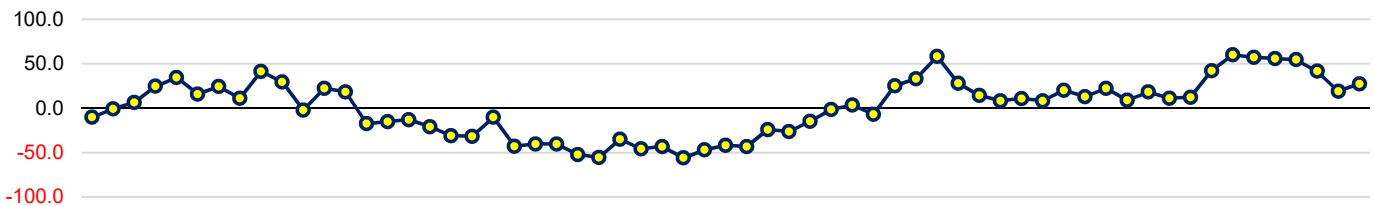
DECEMBER 2018 ONLINE JOB OPENINGS REPORT

REGION 1 JOB OPENINGS

[ALL JOB OPENINGS]



YEAR-OVER-YEAR PERCENT CHANGE IN JOB OPENINGS



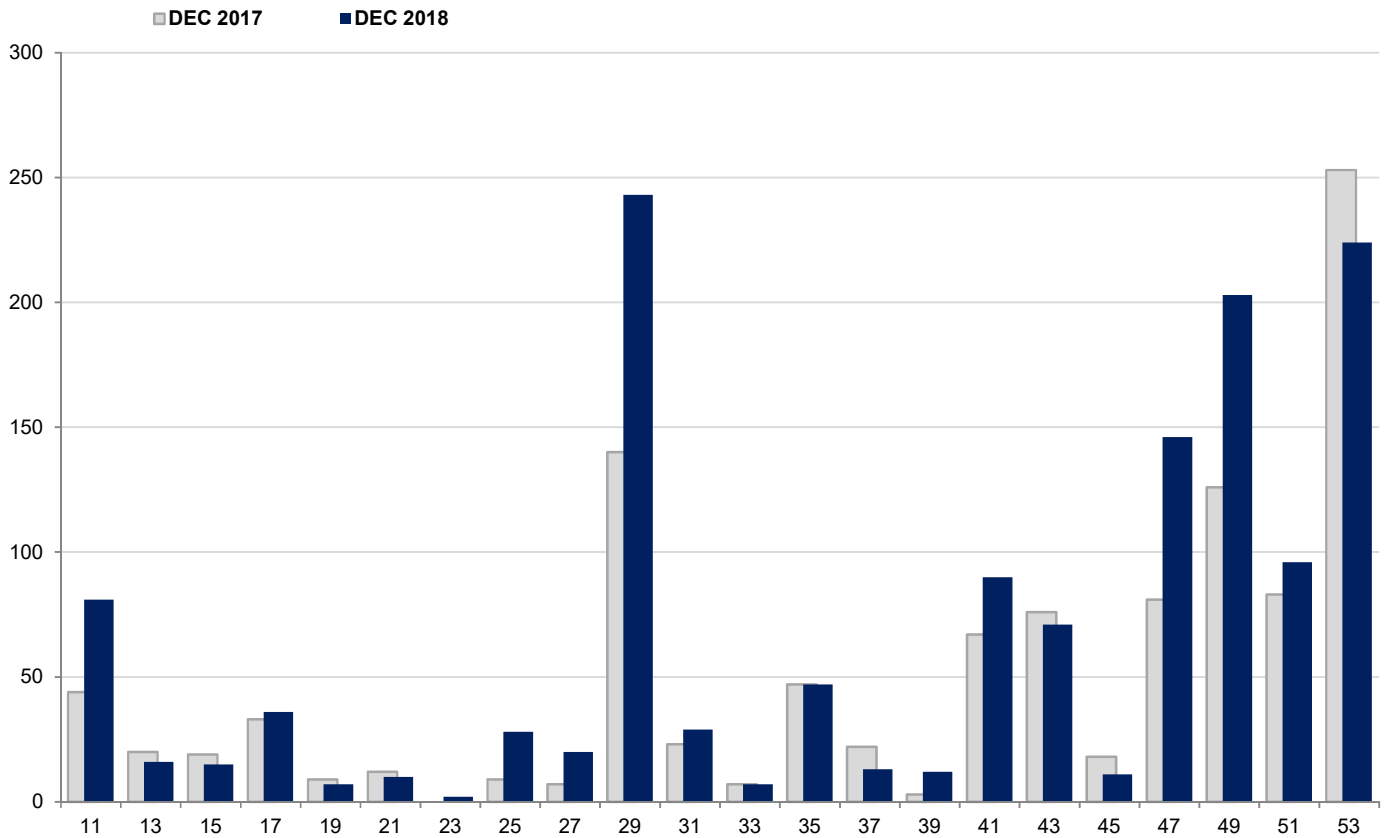
RECENT TREND	JOB OPENINGS	M/M # CHG	M/M % CHG	Y/Y # CHG	Y/Y % CHG	12 MO MOV AVG	M/M # CHG	M/M % CHG	Y/Y # CHG	Y/Y % CHG
JUL 2017	1,062	-6	-0.6	+80	+8.1	1,059	+7	+0.7	+50	+5.0
AUG 2017	1,102	+40	+3.8	+106	+10.6	1,068	+9	+0.8	+86	+8.8
SEP 2017	1,054	-48	-4.4	+80	+8.2	1,074	+6	+0.6	+121	+12.7
OCT 2017	1,153	+99	+9.4	+192	+20.0	1,090	+16	+1.5	+151	+16.1
NOV 2017	1,127	-26	-2.3	+129	+12.9	1,101	+11	+1.0	+163	+17.4
DEC 2017	1,109	-18	-1.6	+201	+22.1	1,118	+17	+1.5	+178	+18.9
JAN 2018	959	-150	-13.5	+78	+8.9	1,124	+6	+0.5	+189	+20.2
FEB 2018	1,326	+367	+38.3	+203	+18.1	1,141	+17	+1.5	+187	+19.6
MAR 2018	1,426	+100	+7.5	+142	+11.1	1,153	+12	+1.1	+173	+17.7
APR 2018	1,459	+33	+2.3	+157	+12.1	1,166	+13	+1.1	+146	+14.3
MAY 2018	1,634	+175	+12.0	+485	+42.2	1,207	+41	+3.5	+166	+15.9
JUN 2018	1,709	+75	+4.6	+641	+60.0	1,260	+53	+4.4	+208	+19.8
JUL 2018	1,670	-39	-2.3	+608	+57.3	1,311	+51	+4.0	+252	+23.8
AUG 2018	1,717	+47	+2.8	+615	+55.8	1,362	+51	+3.9	+294	+27.5
SEP 2018	1,628	-89	-5.2	+574	+54.5	1,410	+48	+3.5	+336	+31.3
OCT 2018	1,631	+3	+0.2	+478	+41.5	1,450	+40	+2.8	+360	+33.0
NOV 2018	1,341	-290	-17.8	+214	+19.0	1,467	+17	+1.2	+366	+33.2
DEC 2018	1,411	+70	+5.2	+302	+27.2	1,493	+26	+1.8	+375	+33.5

[Data are not seasonally adjusted and subject to revision. Dashes (---) indicate data not available.]

DECEMBER 2018 ONLINE JOB OPENINGS REPORT

REGION 1 JOB OPENINGS BY OCCUPATION GROUP

[ALL JOB OPENINGS]



[SOC CODE] OCCUPATION GROUP	DEC 2017	NOV 2018	DEC 2018	M/M # CHG	M/M % CHG	Y/Y # CHG	Y/Y % CHG
[11] Management	44	73	81	+8	+11.0	+37	+84.1
[13] Business and Financial Operations	20	18	16	-2	-11.1	-4	-20.0
[15] Computer and Mathematical	19	12	15	+3	+25.0	-4	-21.1
[17] Architecture and Engineering	33	44	36	-8	-18.2	+3	+9.1
[19] Life, Physical, and Social Science	9	16	7	-9	-56.3	-2	-22.2
[21] Community and Social Service	12	8	10	+2	+25.0	-2	-16.7
[23] Legal	0	3	2	-1	-33.3	+2	---
[25] Education, Training, and Library	9	26	28	+2	+7.7	+19	+211.1
[27] Arts, Design, Entertainment, Sports, and Media	7	28	20	-8	-28.6	+13	+185.7
[29] Healthcare Practitioners and Technical	140	186	243	+57	+30.6	+103	+73.6
[31] Healthcare Support	23	11	29	+18	+163.6	+6	+26.1
[33] Protective Service	7	3	7	+4	+133.3	0	0.0
[35] Food Preparation and Serving Related	47	49	47	-2	-4.1	0	0.0
[37] Building and Grounds Cleaning and Maintenance	22	17	13	-4	-23.5	-9	-40.9
[39] Personal Care and Service	3	4	12	+8	+200.0	+9	+300.0
[41] Sales and Related	67	72	90	+18	+25.0	+23	+34.3
[43] Office and Administrative Support	76	65	71	+6	+9.2	-5	-6.6
[45] Farming, Fishing, and Forestry	18	8	11	+3	+37.5	-7	-38.9
[47] Construction and Extraction	81	145	146	+1	+0.7	+65	+80.2
[49] Installation, Maintenance, and Repair	126	191	203	+12	+6.3	+77	+61.1
[51] Production	83	134	96	-38	-28.4	+13	+15.7
[53] Transportation and Material Moving	253	222	224	+2	+0.9	-29	-11.5
[55] Military Specific	2	0	0	0	0.0	-2	-100.0
Unclassified	8	6	4	-2	-33.3	-4	-50.0
TOTAL	1,109	1,341	1,411	+70	+5.2	+302	+27.2

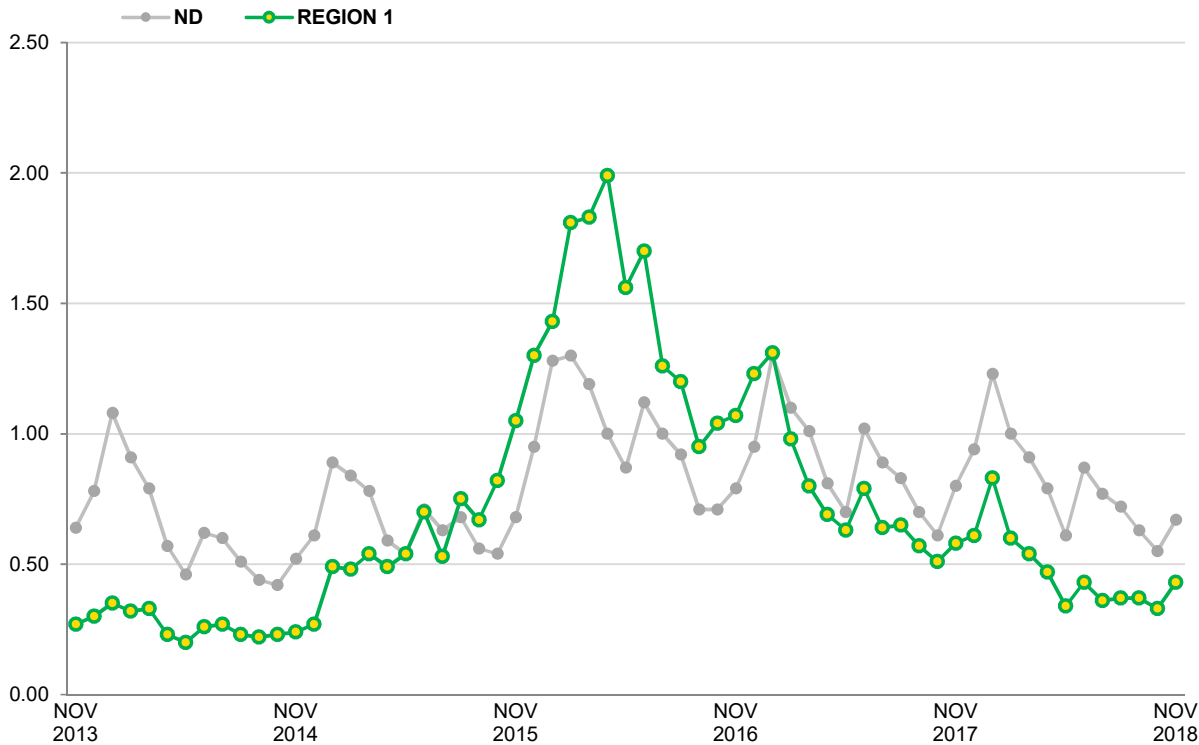
[Data are not seasonally adjusted and subject to revision. Dashes (---) indicate data not available.]

DECEMBER 2018 ONLINE JOB OPENINGS REPORT

REGION 1 UNEMPLOYED PER JOB OPENING

[ALL JOB OPENINGS]

Unemployed per job opening is a rate of the number of unemployed persons divided by job openings. A rate less than one indicates more job openings than local labor supply; a rate greater than one indicates more local labor supply than job openings. The latest month available for regional data is November 2018.

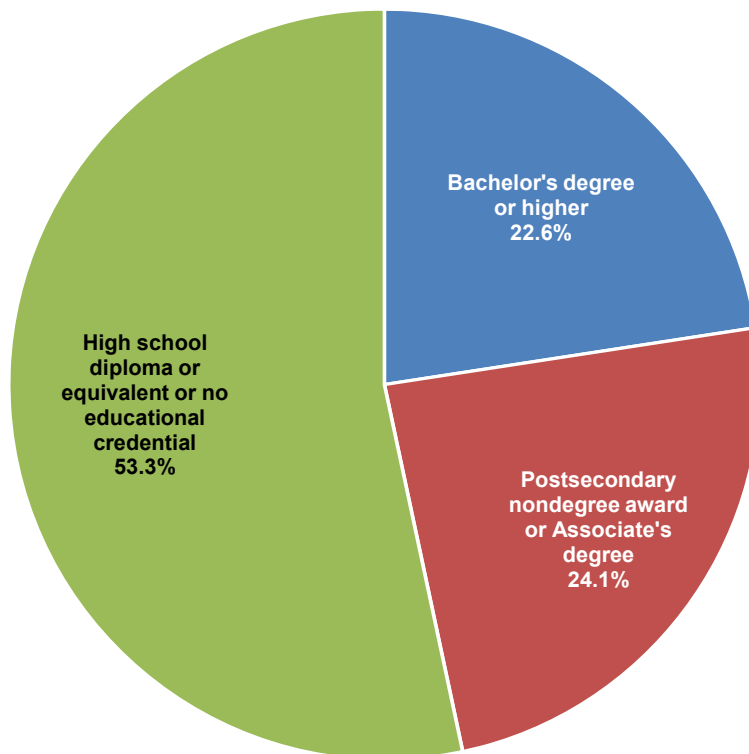


REGION 1	
NOV 2018	0.43
LAST MONTH	0.33
LAST YEAR	0.58
NORTH DAKOTA	
NOV 2018	0.67
LAST MONTH	0.55
LAST YEAR	0.80

REGION 1 DISTRIBUTION OF JOB OPENINGS BY TYPICAL ENTRY-LEVEL EDUCATION

[ALL JOB OPENINGS]

Typical entry-level education describes the level of education that most workers need to enter an occupation, and takes into consideration advertised education requirement preferences. The Labor Market Information Center is able to assign a typical entry-level education category to most job openings (71.0 percent of Region 1 job openings have been assigned a typical entry-level education category), but some are tagged as 'unassigned' due to missing or incomplete occupational codes.



DEC 2018	
TOTAL	1,411
DOC OR PROF	19
MASTER'S	24
BACHELOR'S	183
ASSOCIATE'S	29
POSTSEC AWARD	212
HIGH SCHOOL	394
NO EDU CRED	141
UNASSIGNED	409

The 'Unassigned' category is excluded from the pie chart

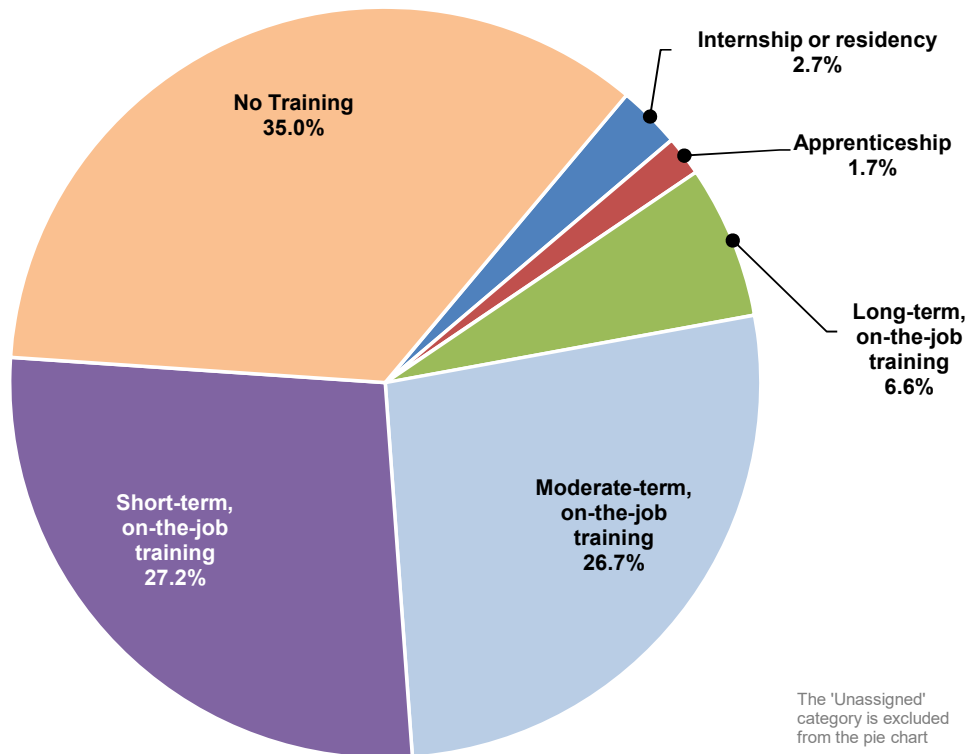
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DECEMBER 2018 ONLINE JOB OPENINGS REPORT

REGION 1 DISTRIBUTION OF JOB OPENINGS BY TYPICAL TRAINING

[ALL JOB OPENINGS]

Typical training describes any additional training or preparation that is typically needed, once employed in an occupation, to attain competency in the skills needed in that occupation. The Labor Market Information Center is able to assign a typical training category to most job openings (71.0 percent of Region 1 job openings have been assigned a typical training category), but some are tagged as 'unassigned' due to missing or incomplete occupational codes.

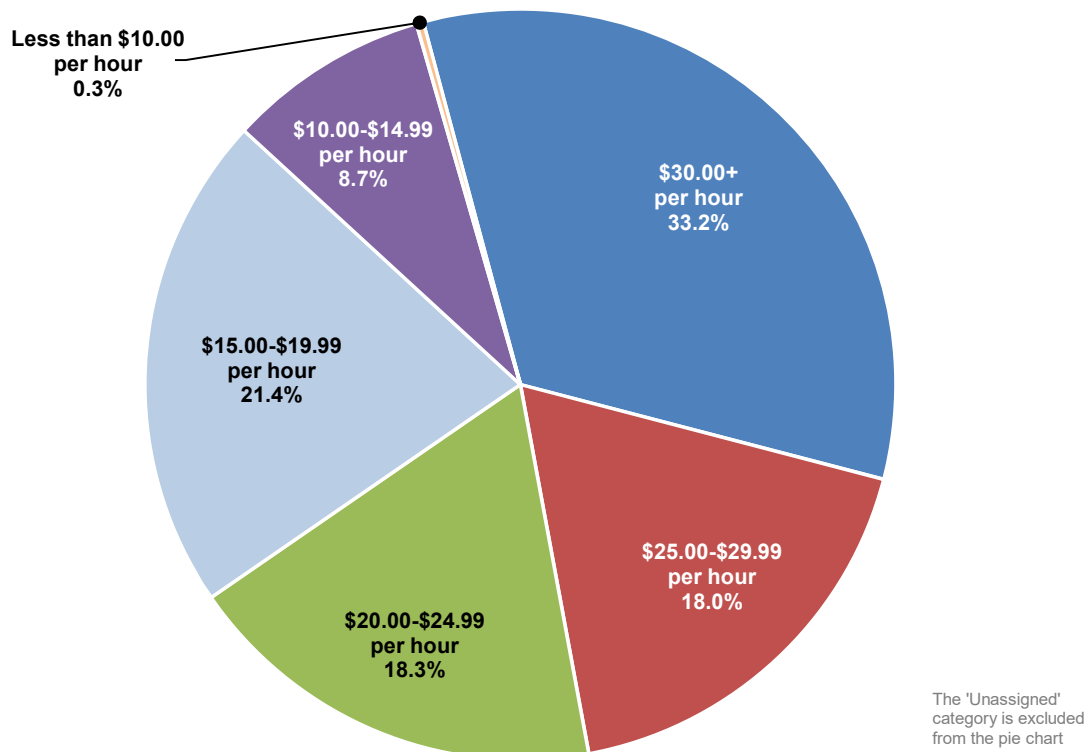


DEC 2018
TOTAL
1,411
INTERN OR RES
27
APPRENTICESHIP
17
LT OJT
66
MT OJT
268
ST OJT
273
NO TRAINING
351
UNASSIGNED
409

REGION 1 DISTRIBUTION OF JOB OPENINGS BY TYPICAL AVERAGE WAGE

[ALL JOB OPENINGS]

Typical average wage describes the average hourly wage paid to workers already employed in the labor market in specific occupations as compiled from the latest Occupational Employment Statistics (OES) survey. The typical average wage should not be interpreted as an advertised wage since most employers don't post wages in job openings. Typical average wages are not available by region; instead, state-level wages are linked to regional openings to provide a general guide. The Labor Market Information Center is able to assign a typical average wage to most job openings (69.5 percent of Region 1 job openings have been assigned a typical average wage), but some are tagged as 'unassigned' due to missing or incomplete occupational codes.



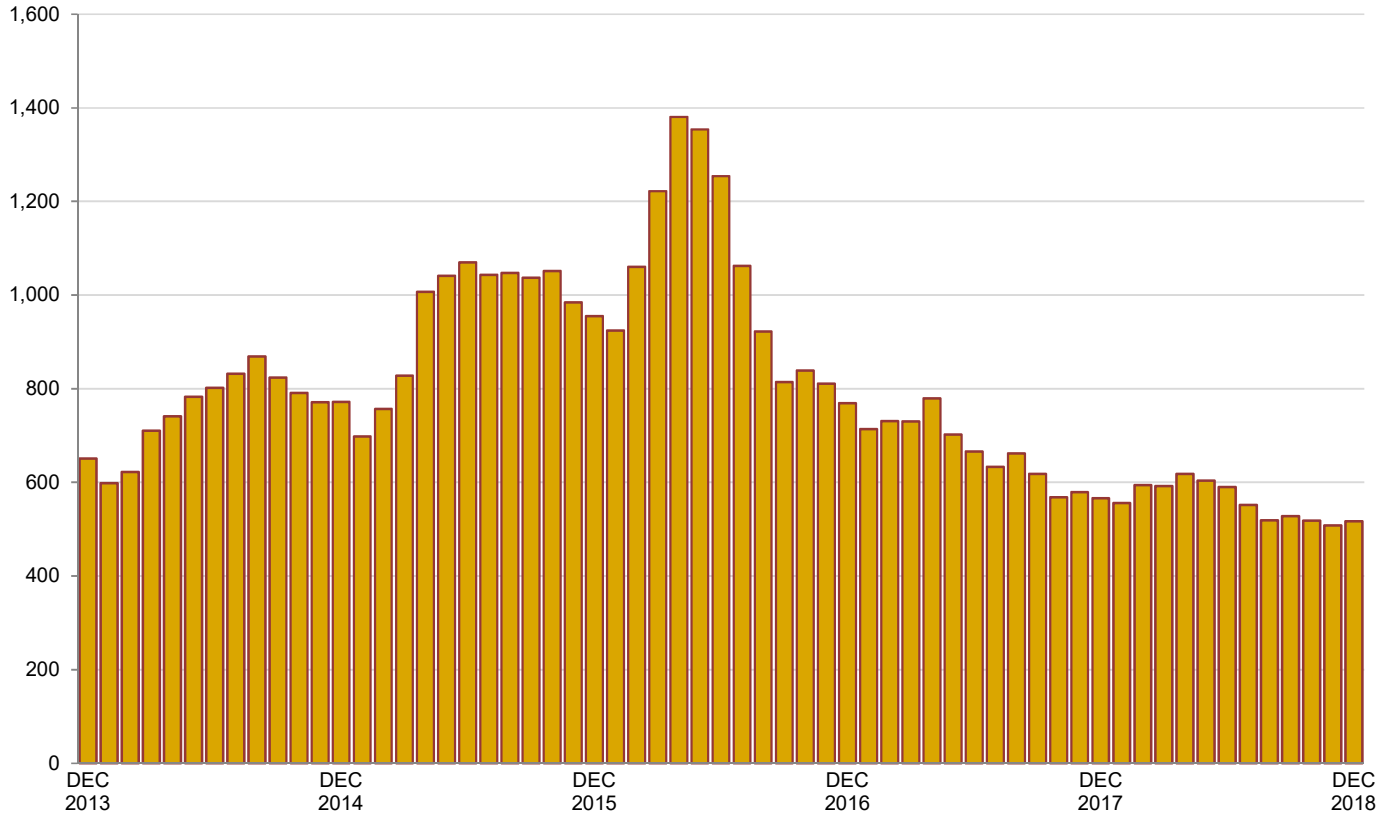
DEC 2018
TOTAL
1,411
\$30+
326
\$25.00-\$29.99
177
\$20.00-\$24.99
180
\$15.00-\$19.99
210
\$10.00-\$14.99
85
LESS THAN \$10
3
UNASSIGNED
430

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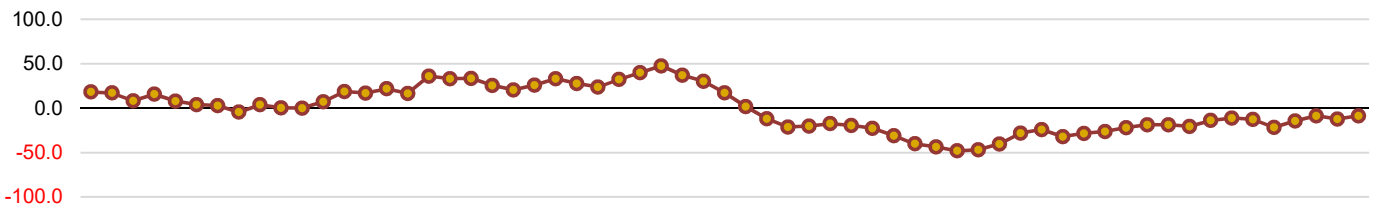
DECEMBER 2018 ONLINE JOB OPENINGS REPORT

REGION 1 ACTIVE RÉSUMÉS

[IN-STATE ACTIVE RÉSUMÉS]



YEAR-OVER-YEAR PERCENT CHANGE IN ACTIVE RÉSUMÉS



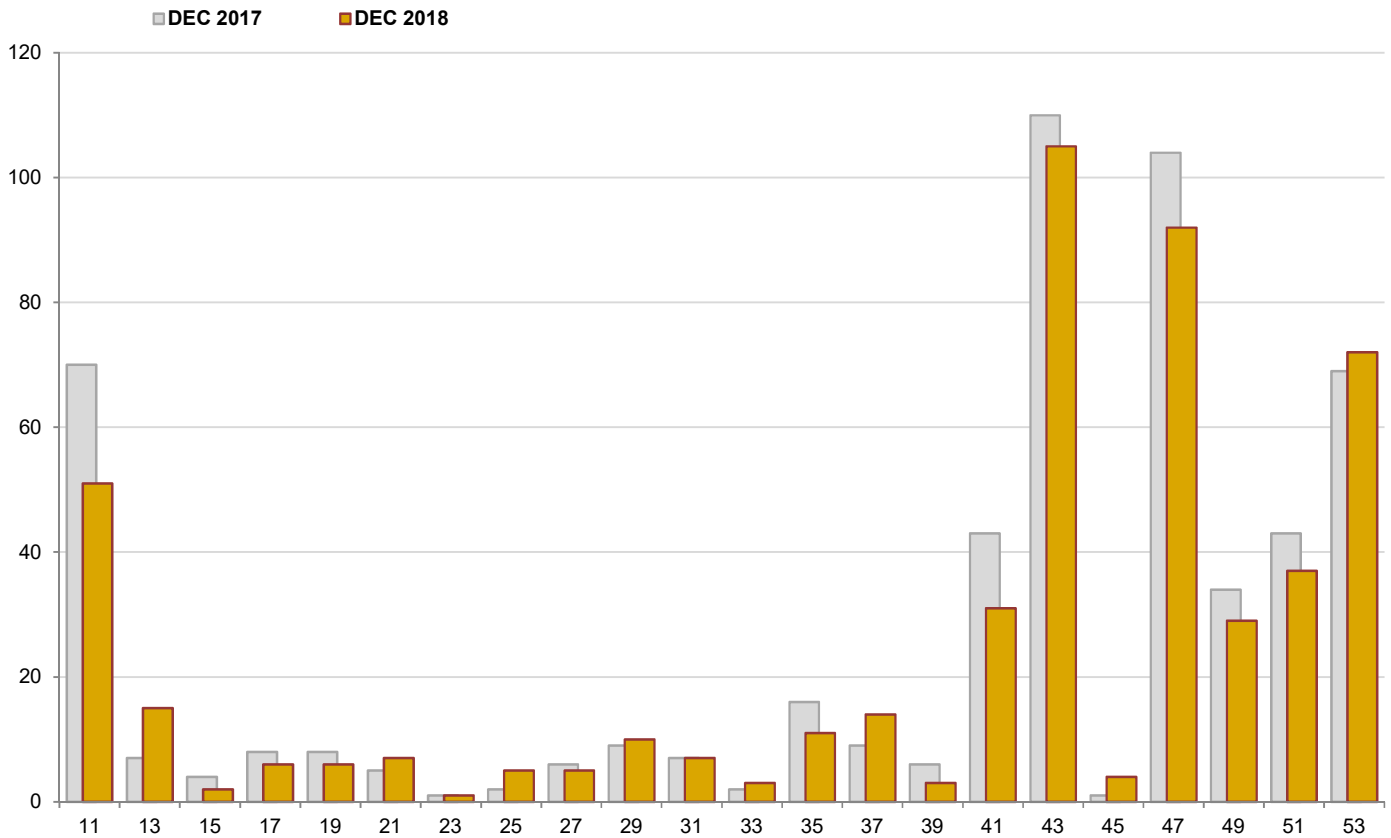
RECENT TREND	ACTIVE RÉSUMÉS	M/M # CHG	M/M % CHG	Y/Y # CHG	Y/Y % CHG	12 MO MOV AVG	M/M # CHG	M/M % CHG	Y/Y # CHG	Y/Y % CHG
JUL 2017	633	-33	-5.0	-429	-40.4	759	-36	-4.5	-352	-31.7
AUG 2017	662	+29	+4.6	-260	-28.2	738	-21	-2.8	-363	-33.0
SEP 2017	618	-44	-6.6	-196	-24.1	721	-17	-2.3	-361	-33.4
OCT 2017	568	-50	-8.1	-271	-32.3	699	-22	-3.1	-365	-34.3
NOV 2017	579	+11	+1.9	-232	-28.6	679	-20	-2.9	-371	-35.3
DEC 2017	566	-13	-2.2	-203	-26.4	662	-17	-2.5	-372	-36.0
JAN 2018	556	-10	-1.8	-158	-22.1	649	-13	-2.0	-368	-36.2
FEB 2018	594	+38	+6.8	-137	-18.7	638	-11	-1.7	-351	-35.5
MAR 2018	592	-2	-0.3	-138	-18.9	626	-12	-1.9	-322	-34.0
APR 2018	618	+26	+4.4	-161	-20.7	613	-13	-2.1	-285	-31.7
MAY 2018	604	-14	-2.3	-98	-14.0	605	-8	-1.3	-239	-28.3
JUN 2018	590	-14	-2.3	-76	-11.4	598	-7	-1.2	-197	-24.8
JUL 2018	552	-38	-6.4	-81	-12.8	592	-6	-1.0	-167	-22.0
AUG 2018	519	-33	-6.0	-143	-21.6	580	-12	-2.0	-158	-21.4
SEP 2018	528	+9	+1.7	-90	-14.6	572	-8	-1.4	-149	-20.7
OCT 2018	518	-10	-1.9	-50	-8.8	568	-4	-0.7	-131	-18.7
NOV 2018	508	-10	-1.9	-71	-12.3	562	-6	-1.1	-117	-17.2
DEC 2018	517	+9	+1.8	-49	-8.7	558	-4	-0.7	-104	-15.7

[Data are not seasonally adjusted and subject to revision. Dashes (---) indicate data not available.]

DECEMBER 2018 ONLINE JOB OPENINGS REPORT

REGION 1 ACTIVE RÉSUMÉS BY OCCUPATION GROUP

[IN-STATE ACTIVE RÉSUMÉS]



[SOC CODE] OCCUPATION GROUP	DEC 2017	NOV 2018	DEC 2018	M/M # CHG	M/M % CHG	Y/Y # CHG	Y/Y % CHG
[11] Management	70	50	51	+1	+2.0	-19	-27.1
[13] Business and Financial Operations	7	19	15	-4	-21.1	+8	+114.3
[15] Computer and Mathematical	4	5	2	-3	-60.0	-2	-50.0
[17] Architecture and Engineering	8	7	6	-1	-14.3	-2	-25.0
[19] Life, Physical, and Social Science	8	7	6	-1	-14.3	-2	-25.0
[21] Community and Social Service	5	4	7	+3	+75.0	+2	+40.0
[23] Legal	1	1	1	0	0.0	0	0.0
[25] Education, Training, and Library	2	6	5	-1	-16.7	+3	+150.0
[27] Arts, Design, Entertainment, Sports, and Media	6	4	5	+1	+25.0	-1	-16.7
[29] Healthcare Practitioners and Technical	9	11	10	-1	-9.1	+1	+11.1
[31] Healthcare Support	7	8	7	-1	-12.5	0	0.0
[33] Protective Service	2	4	3	-1	-25.0	+1	+50.0
[35] Food Preparation and Serving Related	16	13	11	-2	-15.4	-5	-31.3
[37] Building and Grounds Cleaning and Maintenance	9	11	14	+3	+27.3	+5	+55.6
[39] Personal Care and Service	6	4	3	-1	-25.0	-3	-50.0
[41] Sales and Related	43	33	31	-2	-6.1	-12	-27.9
[43] Office and Administrative Support	110	113	105	-8	-7.1	-5	-4.5
[45] Farming, Fishing, and Forestry	1	4	4	0	0.0	+3	+300.0
[47] Construction and Extraction	104	84	92	+8	+9.5	-12	-11.5
[49] Installation, Maintenance, and Repair	34	27	29	+2	+7.4	-5	-14.7
[51] Production	43	24	37	+13	+54.2	-6	-14.0
[53] Transportation and Material Moving	69	68	72	+4	+5.9	+3	+4.3
[55] Military Specific	0	0	0	0	0.0	0	0.0
Unclassified	2	1	1	0	0.0	-1	-50.0
TOTAL	566	508	517	+9	+1.8	-49	-8.7

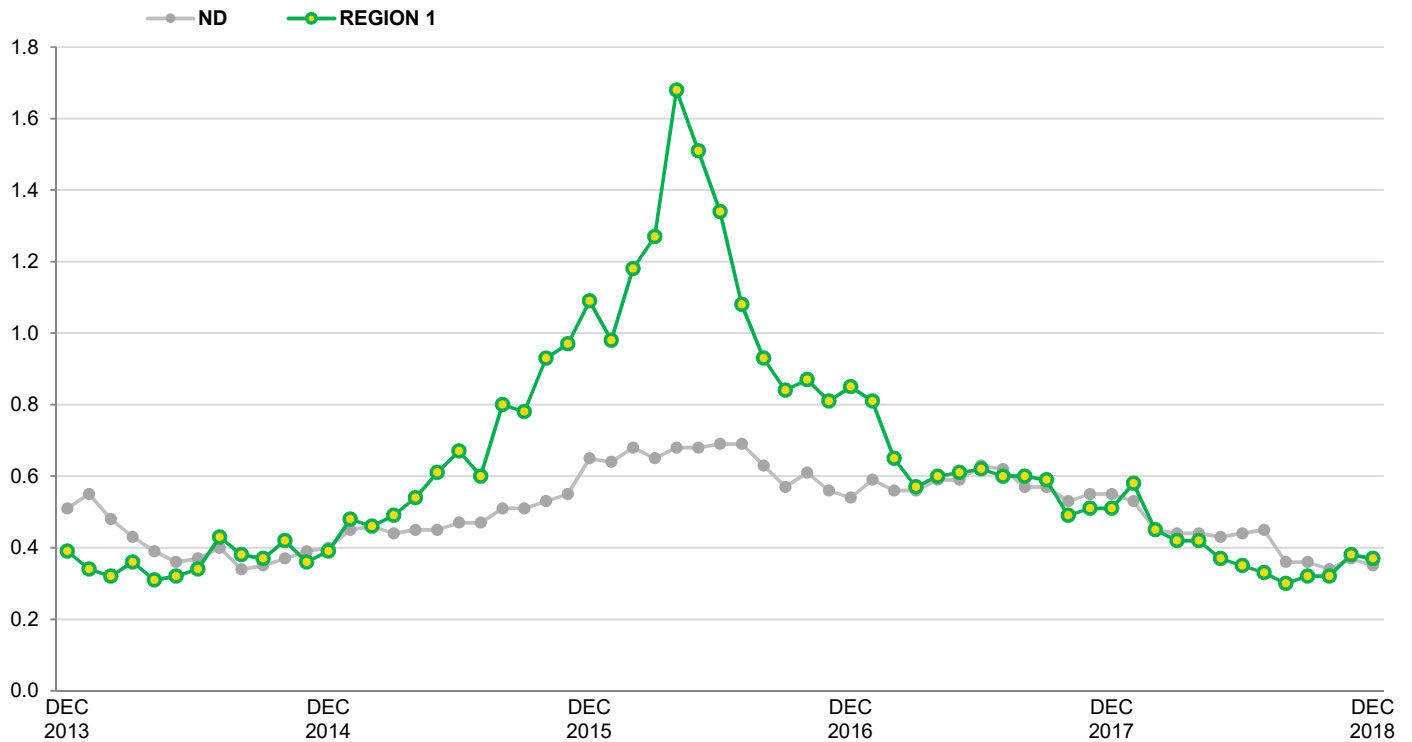
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DECEMBER 2018 ONLINE JOB OPENINGS REPORT

REGION 1 ACTIVE RÉSUMÉS PER JOB OPENING

[IN-STATE ACTIVE RÉSUMÉS]

Active résumés per job opening is a rate of the number of in-state active résumés divided by job openings. Out-of-state résumés were excluded from this calculation. A rate less than one indicates more job openings than in-state active résumés; a rate greater than one indicates more in-state active résumés than job openings.



[SOC CODE] OCCUPATION GROUP	DEC 2017	NOV 2018	DEC 2018
[11] Management	1.59	0.68	0.63
[13] Business and Financial Operations	0.35	1.06	0.94
[15] Computer and Mathematical	0.21	0.42	0.13
[17] Architecture and Engineering	0.24	0.16	0.17
[19] Life, Physical, and Social Science	0.89	0.44	0.86
[21] Community and Social Service	0.42	0.50	0.70
[23] Legal	---	0.33	0.50
[25] Education, Training, and Library	0.22	0.23	0.18
[27] Arts, Design, Entertainment, Sports, and Media	0.86	0.14	0.25
[29] Healthcare Practitioners and Technical	0.06	0.06	0.04
[31] Healthcare Support	0.30	0.73	0.24
[33] Protective Service	0.29	1.33	0.43
[35] Food Preparation and Serving Related	0.34	0.27	0.23
[37] Building and Grounds Cleaning and Maintenance	0.41	0.65	1.08
[39] Personal Care and Service	2.00	1.00	0.25
[41] Sales and Related	0.64	0.46	0.34
[43] Office and Administrative Support	1.45	1.74	1.48
[45] Farming, Fishing, and Forestry	0.06	0.50	0.36
[47] Construction and Extraction	1.28	0.58	0.63
[49] Installation, Maintenance, and Repair	0.27	0.14	0.14
[51] Production	0.52	0.18	0.39
[53] Transportation and Material Moving	0.27	0.31	0.32
REGION 1	0.51	0.38	0.37
NORTH DAKOTA	0.55	0.37	0.35

[Data are not seasonally adjusted and subject to revision. Dashes (---) indicate data not available.]

DECEMBER 2018 ONLINE JOB OPENINGS REPORT

OCCUPATION GROUPS AND AVERAGE WAGES

2017 ND AVG HRLY WAGE (\$)	[SOC CODE] OCCUPATION GROUP Sample Occupations
47.60	[11] MANAGEMENT Managers, Education Administrators, Farmers and Ranchers, Human Resource Managers
30.68	[13] BUSINESS AND FINANCIAL OPERATIONS Accountants, Auditors, Loan Officers, Tax Preparers
31.92	[15] COMPUTER AND MATHEMATICAL Computer Programmers, Computer and Network Administrators, Web Developers, Statisticians
35.53	[17] ARCHITECTURE AND ENGINEERING Engineers, Drafters, Architects, Surveyors
32.01	[19] LIFE, PHYSICAL, AND SOCIAL SCIENCE Biologists, Chemists, Economists
23.53	[21] COMMUNITY AND SOCIAL SERVICE Social Workers, Clergy, Counselors, Social and Human Service Assistants
36.03	[23] LEGAL Lawyers, Court Reporters, Judges, Magistrate Judges, Magistrates, Paralegal and Legal Assistants
24.03	[25] EDUCATION, TRAINING, AND LIBRARY Elementary School Teachers, Secondary School Teachers, Special Education Teachers, Librarians
20.26	[27] ARTS, DESIGN, ENTERTAINMENT, SPORTS, AND MEDIA Musicians and Singers, Photographers, Reporters and Correspondents, Umpires, Referees
35.17	[29] HEALTHCARE PRACTITIONERS AND TECHNICAL Physicians and Surgeons, Dentists, Pharmacists, Registered Nurses, EMTs and Paramedics, Chiropractors
16.45	[31] HEALTHCARE SUPPORT Home Health Aides, Medical Assistants, Medical Transcriptionists, Nursing Aides and Orderlies
22.51	[33] PROTECTIVE SERVICE Correctional Officers, Firefighters, Police and Sheriff's Patrol Officers, Lifeguards
11.89	[35] FOOD PREPARATION AND SERVING RELATED Cooks, Bartenders, Waiters and Waitresses, Counter Attendants, Dishwashers
14.92	[37] BUILDING AND GROUNDS CLEANING AND MAINTENANCE Janitors and Cleaners, Landscaping and Groundskeeping Workers, Maids and Housekeeping Cleaners
14.39	[39] PERSONAL CARE AND SERVICE Childcare Workers, Hairdressers, Hairstylists, Fitness Trainers, Personal and Home Care Aides
19.06	[41] SALES AND RELATED Cashiers, Retail Salespersons, Insurance Sales Agents, Telemarketers
18.06	[43] OFFICE AND ADMINISTRATIVE SUPPORT Secretaries and Administrative Assistants, Office Clerks, Receptionists, Tellers
17.23	[45] FARMING, FISHING, AND FORESTRY Farmworkers and Laborers, Graders and Sorters of Agricultural Products, Hunters and Trappers
25.80	[47] CONSTRUCTION AND EXTRACTION Carpenters, Electricians, Plumbers, Roofers, Oil and Gas Roustabouts
26.01	[49] INSTALLATION, MAINTENANCE, AND REPAIR Automotive Body Repairers, Mechanics, Electrical Power-Line Installers, Wind Turbine Service Technicians
20.88	[51] PRODUCTION Assemblers and Fabricators, Machinists, Tool and Die Makers, Welders, Cutters, Solderers, Brazers
21.67	[53] TRANSPORTATION AND MATERIAL MOVING Airline Pilots, Bus Drivers, Truck Drivers, Industrial Truck and Tractor Operators, Packers and Packagers
---	[55] MILITARY SPECIFIC OCCUPATIONS Aircrew Officers, Infantry, Radar and Sonar Technicians, Special Forces

NOTES

This report was produced either in whole or in part with Department of Labor-funded Workforce Information Grants (WIGS).

BACKGROUND

The Online Job Openings Report (OJOR) is a monthly summary of North Dakota job openings and active résumés and provides a timely overview of the latest supply/demand dynamic. The report involves the collection, processing, and dissemination of open and available online job openings posted by employers and active online résumés posted by job candidates. Both job openings and active résumés are published for the major occupational groups at statewide and regional levels. Data for counties are only published at a total aggregate level. Additionally, supply/demand calculations for various geographies and occupational groups are available. The OJOR is generally published the first working Wednesday of the month following the reference month (i.e. January data published the first working Wednesday in February), though exceptions may occur.

METHODOLOGY AND COVERAGE

The Job Service North Dakota online labor exchange system is the underlying source for the OJOR. The data are a combination of local openings brought into the system either internally or externally. An internal job opening is submitted directly to the labor exchange system by either local office staff or authorized local employers. An external job opening is 'spidered' into the system from outside online job sites including corporate, educational institution, newspaper, government, private job board, and recruiter sites. Coverage is limited to jobs posted online. Job vacancies advertised strictly through word-of-mouth, radio, television, local print-only newspapers, outdoor signage, or any other non-online means are not included. Keep in mind, online job openings and active résumés are self-reported by the employer and job seeker, respectively, so accuracy cannot necessarily be guaranteed. Every effort is made to ensure the OJOR is constructed using deduplicated data. The deduplication process involves the systematic analysis of key fields of each opening, such as company name, job title/description, and location, against all openings, flagging potential duplicate matches. Active résumés are deduplicated against the user name and occupational code fields. An analyst reviews and eliminates legitimate duplicates.

The OJOR is not subject to the typical sampling error and non-response error components associated with most statistical surveys. Non-sampling error sources would include population under-coverage due to missing a portion of the targeted population (e.g. a large Internet job board), and over-coverage due to the inability to fully eliminate duplicate job openings. Additional potential sources of non-sampling error would include occupational and/or geographic coding errors which would affect the proper classification of individual job openings.

Occupational coding is done at the 6-digit 2010 Standard Occupational Classification (SOC) level. If a job opening cannot be coded at the six-digit level, then every effort is made to code it to a 2-digit major occupational group. If the opening cannot be coded to either, it is designated 'unclassified' or 'unassigned.' It should be noted that every ten years or so the SOC system goes through a federal review process where codes are added, deleted, or modified. While the 2-digit occupational groups rarely change, there can be significant changes to the 6-digit detail codes thereby affecting the composition of the occupational groups.

The geographic coding for an internal opening is determined by information submitted directly to the labor exchange system by either local office staff or authorized local employers. An external opening is coded against location information provided in the original posting, if available.

TERMS AND CONCEPTS

ACTIVE RÉSUMÉS. Active résumés are all online résumés that have been created or otherwise modified during the reference period. This figure includes résumés posted no more than 90 days prior but still active during the reference period, as well as new résumés. Active résumés may include those created by out-of-state candidates. Candidates may post multiple online résumés so active résumés should not be interpreted as an individual candidate count. Active résumés are not necessarily an indicator of unemployment since candidates posting résumés may or may not be unemployed.

ACTIVE RÉSUMÉS PER JOB OPENING. North Dakota's state-level and substate rates of active résumés per job opening are calculated by taking the number of in-state active résumés and dividing by job openings. In order to get a more localized measure of potential labor supply, only in-state active résumés (i.e. résumés tied to a North Dakota address) were used to calculate this rate; out-of-state active résumés are excluded from this calculation. A rate less than one indicates more job openings than in-state active résumés; a rate greater than one indicates more in-state active résumés than job openings.

JOB OPENINGS. Job openings include all open and available online openings during the reference period. This figure may include openings posted no more than 90 days prior but still active during the reference period, as well as new openings.

JOB OPENINGS RATE. The job openings rate is the percentage of all jobs in the economy open and available and North Dakota's is calculated by taking the number of job openings (unfilled jobs) divided by total nonfarm employment (filled jobs) from the Current Employment Statistics (CES) program plus job openings. The rate of unfilled jobs is an important measure of the unmet demand for labor, which paints a more complete picture of the state's labor market than solely looking at the unemployment rate, a measure of the excess supply of labor. A higher rate is an indicator of increased demand from employers resulting in more

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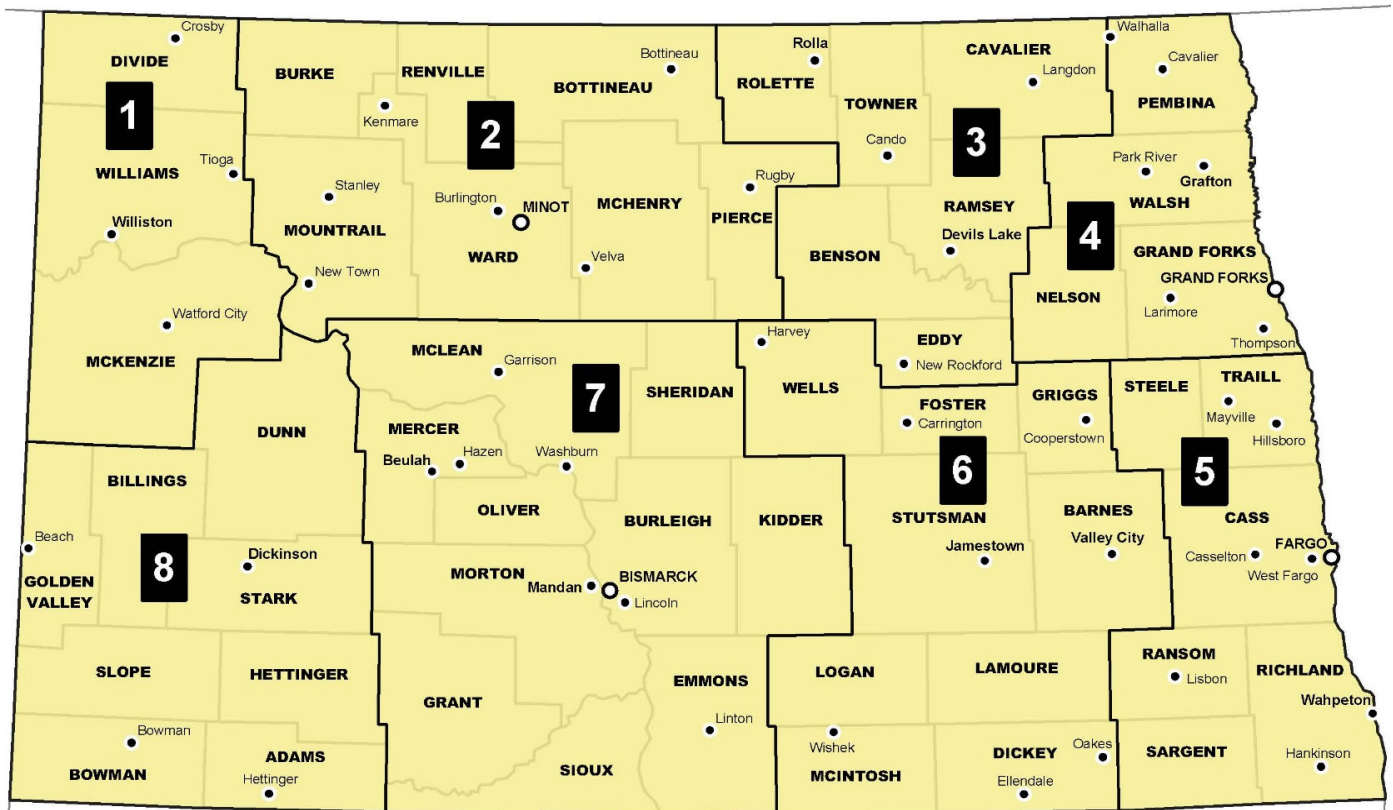
opportunities for job seekers. The U.S rate is calculated using data from the Job Openings and Labor Turnover Survey (JOLTS) and CES program. U.S. job openings typically lag two months, therefore the most recent rate will lag two months.

OCCUPATIONAL DATA. Occupational groups are based on the 2010 SOC coding system. Openings and résumés are coded to the 6-digit SOC level whenever possible. Data are aggregated to the major occupational group level.

REFERENCE PERIOD. The OJOR collects data using a mid-month reference period (the week that includes the 12th of the month), which provides consistency when incorporating data from U.S. Bureau of Labor Statistics (BLS) sources.

REGIONAL DATA. The eight North Dakota regions are made up of groupings of counties around a regional city center that provides a majority of the services and exhibits the greatest economic influence. While the regional reports are not as comprehensive as the statewide report, they do provide some local detail not otherwise available. Job openings data are geographically-coded based on worksite location. Active résumés are geographically coded based on the residential address of the candidate.

Below is a geographic outline of North Dakota's eight regions.



TYPICAL ENTRY-LEVEL EDUCATION. Typical entry-level education describes the level of education that most workers need to enter an occupation, and takes into consideration advertised education requirement preferences. The Labor Market Information Center is able to assign a typical entry-level education to most job openings, but some are tagged as 'unassigned' due to missing or incomplete occupational codes. Keep in mind, an opening's typical entry-level education assignment may differ from employers' advertised education requirements, though most match. Mismatches commonly occur due to either missing education requirements from the employer's job order or education inflation where an employer advertises for more education than is typically needed for an occupation. Using the typical entry-level education framework provides for consistency across occupations regardless of an employer's advertised preference. For instance, all janitor openings are coded with the same typical entry-level education (no educational credential) regardless if one out of ten employers has a preference for a candidate with a Bachelor's degree.

The typical entry-level education categories are:

- Doctoral or professional degree: Completion of a doctoral degree (Ph.D.) usually requires at least 3 years of full-time academic work beyond a bachelor's degree. Completion of a professional degree usually requires at least 3 years of full-time academic study beyond a bachelor's degree.
- Master's degree: Completion of this degree usually requires 1 or 2 years of full-time academic study beyond a bachelor's degree.

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- Bachelor's degree: Completion of this degree generally requires at least 4 years, but not more than 5 years, of full-time academic study beyond high school.
- Associate's degree: Completion of this degree usually requires at least 2 years but not more than 4 years of full-time academic study beyond high school.
- Postsecondary nondegree award: These programs lead to a certificate or other award, but not a degree. The certificate is awarded by the educational institution and is the result of completing formal postsecondary schooling. Certification, issued by a professional organization or certifying body, is not included here. Some postsecondary nondegree award programs last only a few weeks, while others may last 1 to 2 years.
- High school diploma or equivalent: This category signifies the completion of high school or an equivalent program resulting in the award of a high school diploma or an equivalent, such as the General Education Development (GED) credential.
- No formal educational credential: This category signifies that a formal credential issued by an educational institution, such as a high school diploma or postsecondary certificate, is not typically needed for entry into the occupation.

TYPICAL TRAINING. Typical training describes any additional training or preparation that is typically needed, once employed in an occupation, to attain competency in the skills needed in that occupation. Training is occupation-specific rather than job-specific; therefore, skills learned can be transferred to another job in the same occupation. The Labor Market Information Center is able to assign a typical training category to most job openings, but some are tagged as 'unassigned' due to missing or incomplete occupational codes. Keep in mind, an opening's typical training assignment may differ from employers' advertised training requirements, though most match. Mismatches commonly occur due to either missing training requirements from the employer's job order or where an employer advertises for more training than is typically needed for an occupation. Using the typical training framework provides for consistency across occupations regardless of an employer's advertised preference. For instance, all janitor openings are coded with the same typical training (short-term, on-the-job training) regardless if one out of ten employers has a preference for long-term, on-the-job training.

The typical training categories are:

- Internship or residency: An internship or residency is training that involves preparation in a field such as teaching or medicine, generally under supervision in a professional setting, such as a classroom or hospital. This type of training may occur before one is employed. Completion of an internship or residency program is commonly required for state licensure or certification in fields including medicine, counseling, architecture, and teaching. This category does not include internships that are suggested for advancement in one's career, such as a marketing internship.
- Apprenticeship: An apprenticeship is a formal relationship between a worker and sponsor that consists of a combination of on-the-job training and related occupation-specific technical instruction in which the worker learns the practical and theoretical aspects of an occupation. Apprenticeship programs are sponsored by individual employers, joint employer and labor groups, and employer associations. The typical apprenticeship program provides at least 144 hours of occupation-specific technical instruction and 2,000 hours of on-the-job training per year, over a 3- to 5-year period.
- Long-term, on-the-job training: More than 12 months of on-the-job training or, alternatively, combined work experience and formal classroom instruction, is needed for workers to develop the skills to attain competency. Training is occupation-specific rather than job-specific; therefore, skills learned can be transferred to another job in the same occupation. This category also includes employer-sponsored training programs. Such programs include those offered by fire academies and schools for air traffic controllers. In other occupations—nuclear power reactor operators, for example—trainees take formal courses, often provided at the jobsite, to prepare for the required licensing exams. Also included in this category are occupations in which workers typically need to possess a natural ability or talent—including musicians and singers, athletes, dancers, photographers, and actors—and that ability or talent must be cultivated over several years, sometimes in a nonwork setting. This category excludes apprenticeships.
- Moderate-term, on-the-job training: Skills needed for a worker to attain competency in an occupation that can be acquired during 1 to 12 months of combined on-the-job experience and informal training. Training is occupation-specific rather than job-specific; therefore, skills learned can be transferred to another job in the same occupation. This category also includes employer-sponsored training programs.
- Short-term, on-the-job training: Skills needed for a worker to attain competency in an occupation that can be acquired in less than 30 days of on-the-job experience and informal training. Training is occupation-specific rather than job-specific; therefore, skills learned can be transferred to another job in the same occupation. This category also includes employer-sponsored training programs.
- No training: There is no additional occupation-specific training or preparation typically required to attain competency in the occupation.

UNEMPLOYED PER JOB OPENING. North Dakota's state-level and substate rates of unemployed per job opening are calculated by taking the number of unemployed persons from the Local Area Unemployment Statistics (LAUS) program and dividing by job openings. A rate less than one indicates more job openings than local labor supply; a rate greater than one indicates more local labor supply than job openings. North Dakota unemployment data typically lag one month, therefore the most recent rates will lag one month. The U.S. rate is calculated using data from the JOLTS and the Current Population Survey (CPS) from the BLS. U.S. job openings typically lag two months, therefore the most recent rate will lag two months.

UNEMPLOYMENT DATA. The unemployment data used in this report come from the CPS and LAUS programs. Both programs

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provide data on the unemployed and are used to calculate the rate of unemployed per job opening. The unemployed are defined as those 16 years of age and older who were unemployed but actively seeking and available for work within the last month.

WAGE DATA. The average hourly wage data are the latest available from the Occupational Employment Statistics (OES) program. OES wage data provide a point-in-time snapshot of wage levels for workers currently employed in more than 800 SOC occupations; these wages should not be interpreted as an advertised wage since most employers don't post wages in job openings. Regional occupational wage data are not available; instead, state-level wages are linked to regional openings to provide a general guide.

DATA INTERPRETATION

While the top-line numbers get the most attention, the emphasis in interpreting the data should focus on the trend over time. Since the data are not seasonally adjusted, the most appropriate comparison for any month should be the same month one year earlier.

Job openings data reflect a relative demand for labor. Job openings include all open and available online openings. It should not be assumed that the published job openings number is the entirety of the job openings market. There is a segment of the job openings market that relies solely on means other than online to recruit workers. Those openings are not captured in the OJOR.

Active résumés data reflect a relative supply of labor. Active résumés include all online résumés that have been created or otherwise modified by job seekers with a desire to work in North Dakota. Therefore, a segment of active résumés belong to out-of-state candidates. Candidates may post multiple online résumés so active résumés should not be interpreted as an individual candidate count. Active résumés are not necessarily an indicator of unemployment since candidates posting résumés may or may not be unemployed. It should not be assumed that the published active résumés number is the entirety of the potential labor supply. Excluded from the active résumés count are unemployed individuals who have not created an online résumé or, similarly, casual job seekers who browse job openings but do not create an online résumé.

Supply/demand calculations are used to reconcile the relationship between labor market demand (e.g. job openings) and labor market supply (e.g. active résumés, unemployed). The results highlight the relative slack in the labor market for occupational groups and select geographies. Supply/demand rates (e.g. active résumés per job opening, unemployed persons per job opening) with a result less than one indicate a greater need for workers in an occupational group or area. In other words, there's not enough supply (workers) to keep up with demand (job openings). The opposite is true when supply/demand rates exceed one. Of course, such an analysis only provides a general idea of where excess demand exists; it does not necessarily indicate a match if a candidate doesn't have the education, skills, or experience to get hired. Additionally, caution should be exercised when interpreting supply/demand calculations for small occupational groups and geographies, which exhibit much more volatility and may skew a user's interpretation of the labor market situation. Extremely high or low calculations could be masking a relatively small labor market supply/demand dynamic.

In conjunction with other pieces of labor market information (e.g. projections, wages, skill requirements, etc.), OJOR data can be used by students, educators, and counselors to explore potential career interests. Job seekers can use the data to help focus job searches and highlight occupational groups and/or geographic areas with the greatest opportunities or toughest competition. The business community, economic developers, and policy makers can use the data to track trends in the labor market, potentially highlighting labor imbalances. This can be especially helpful if a business is looking to expand or relocate. Economic developers and policy makers can use the data to gauge the general health of the economy and look for opportunities to maximize labor market supply and demand.