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2019 *Alberta*
Wage and Salary Survey

Methodology Report
September 2019

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SURVEY OVERVIEW

Project Rationale

The objective of the **2019 Alberta Wage and Salary Survey** was to gather information on wages and salaries for full-time and part-time employees in Alberta by occupation, geographic location, and industry group.

This information is essential for the government to provide the public and industry with current information on provincial and regional wage levels. The results of this research will be valuable to industry in the development of policies related to compensation, hiring and other human resources issues and to individuals considering career and educational choices. Accurate wage data will aid the provincial government in developing effective policies and providing services.

The **2019 Alberta Wage and Salary Survey** was conducted by R.A. Malatest & Associates Ltd. on behalf of Alberta Labour.

About the Data

Valid data were collected between January and July 2019 for over 7,000 employers, employing over 482,000 workers, covering over 14,300 business locations in Alberta.

The data collected provide wage information for:

- occupation type;
- geographic location;
- industry group; and
- starting wages, average wages, and top wages.

For the various occupations, the data collected from employers included:

- average hours worked;
- average wage/salary for all employees currently employed;
- starting wage/salary for entry-level employees;
- top (maximum) wage/salary;
- incidence of hiring difficulties over the past two (2) years; and
- number of vacancies unfilled for over four (4) months.

For each occupation, the following statistics were calculated:

- mean and median hourly wages;
- mean annual salaries;

- low (5th percentile) and high (95th percentile) hourly wages;
- average number of hours worked per week;
- proportion of companies that reported hiring within the last two(2) years;
- proportion of companies that reported hiring difficulties;
- proportion of companies that reported vacancies of over four(4) months; and
- mean job vacancy rates.

The statistics calculated are weighted survey results based on the responses from an employer sample that is representative of employers by region and by industry. Thus the results should be considered *estimates* of the actual wages and salaries paid by employers in Alberta. As with all sample surveys, the results may be subject to sources of sample error (such as variation of the average for the survey sample from the true average for the entire population) and non-response bias (characteristic differences between survey respondents and non-respondents).

Accessing the Data

Results from the survey are available online at **https://alis.alberta.ca/occinfo/wages-and-salaries-in-alberta/**.

Wage rates for Alberta are reported for 424 of the 500 four-digit National Occupation Classifications (NOC) 2016.[1]

Wage rates by occupation are available for 19 major industry groups, generally organized according to North American Industry Classification System (NAICS)[2] major groups:

• Agriculture	part of NAICS 11
• Forestry, Logging, Fishing and Hunting	part of NAICS 11
• Oil & Gas Extraction	part of NAICS 21
• Utilities	NAICS 22
• Construction	NAICS 23
• Manufacturing	NAICS 31-33
• Wholesale Trade	NAICS 41
• Retail Trade	NAICS 44-45
• Transportation & Warehousing	NAICS 48, 49
• Information, Culture, Recreation (incl. tourism)	NAICS 51, 71

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[1] More information on the NOC 2016 structure can be found at:
http://noc.esdc.gc.ca/English/noc/welcome.aspx?ver=16 .

[2] More information on the NAICS structure can be found at:
https://www.statcan.gc.ca/eng/subjects/standard/naics/2017/v3/index

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- Finance, Insurance, Real Estate, Leasing NAICS 52, 53
- Professional, Scientific & Technical Services NAICS 54
- Business, Building and Other Support Services NAICS 55, 56
- Educational Services NAICS 61
- Health Care & Social Assistance NAICS 62
- Accommodation & Food Services (incl. tourism) NAICS 72
- Other Services (Repair, Personla, Related) NAICS 81
- Public Administration NAICS 91
- Mining part of NAICS 21

Wage rates by occupation are available at the provincial level and for the eight Statistics Canada Economic Regions in Alberta. The Economic Regions in Alberta are:

- Athabasca-Grande Prairie;
- Banff-Jasper-Rocky Mountain House;
- Calgary;
- Camrose-Drumheller;
- Edmonton;
- Lethbridge-Medicine Hat;
- Red Deer; and
- Wood Buffalo-Cold Lake.

The boundaries of the regions are depicted on the map in Appendix C.

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METHODOLOGY

The 2019 cycle of the *Alberta Wage and Salary Survey* (AWSS) was conducted between January and July 2019 as a mixed-mode survey, with options to complete the survey by mail, fax, telephone, online, or via e-mail.

A. Target Population and Sample Frame

The target population for the 2019 AWSS included private and public employers in Alberta. Employers with ten or more employees were selected in Calgary and Edmonton, while employers with five or more employees were targeted in the other six survey regions. The rationale for excluding smaller employers was to maximize the coverage of occupation and employee data per survey completion.[3] Canadian Business Patterns (CBP) data were used to define the size of the employer universe stratified by industry, economic region, and business size. The CBP data are based on Statistics Canada's Business Register, which is the principal frame of reference for Statistics Canada's economic statistics program. Listings of individual businesses to be contacted for the survey were drawn from an InfoCanada business list stratified by industry and employer size.

The sample was supplemented with listings for a limited number of employers with fewer employees than the minimum threshold were also randomly sampled in an attempt to improve the representation of a few occupations with very little data gathered in previous cycles. Listings for a sample of nonprofit employers with fewer employees than the minimum threshold were also sampled for a supplementary survey of small nonprofits. The data for these smaller employers were included in the dataset used for AWSS analysis.

B. Sample Selection

Data sources used to prepare the survey sample for the 2019 study included:

- business listings for Alberta employers (from an InfoCanada database);
- the list of 2017 survey completions;
- lists of local and regional governments in Alberta;
- lists of school boards in Alberta; and
- list of locations covered by Alberta Health Services (AHS).

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[3] If a sampled employer was willing to participate in the survey but was found to have total employment of fewer than five (5) employees, the employer's data were included.

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Sample preparation entailed cross-referencing special lists against the InfoCanada list, combining information from different lists, removing duplicates, sample segmentation for survey administration, and correcting/reformatting address information.

For sampling, listings were stratified into eight (8) regions (Statistics Canada Economic Regions), 19 industry classifications derived from NAICS categories, and eight (8) employer size classifications.

The following approach to sampling was undertaken for the different regions:

A) Calgary and Edmonton regions:

- All employers with 50 or more employees ('take all' approach);
- Random sample of employers with 20 to 49 employees;
- Random sample of employers with 10 to 19 employees.

B) Athabasca-Grand Prairie, Banff-Jasper-Rocky Mountain House, Camrose-Drumheller, Lethbridge-Medicine Hat, Red Deer and Wood Buffalo-Cold Lake regions:

- All employers with 10 or more employees ('take all' approach);
- Random sample of employers with 5 to 9 employees.

The sample selected for the survey totalled 25,944 listings of employers and business locations (with some employers having multiple locations). Of these, 5,600 had also participated in the 2017 survey.

C.   Questionnaire

Survey questionnaires were very similar to those used in the 2017 survey cycle. They included variations for paper, electronic, online, and telephone surveys. Part A of the questionnaire collected information on the organization's location and contact details, industry activity, and regional employment. Part B collected detailed information about each occupation, including occupation title, job description, number of employees, average hours worked, wages or salaries (for all employees, starting employees, and top employees), hiring difficulties experienced in the previous two years, and current unfilled vacancies of over four months. An employer responding to the survey could provide information on multiple positions in Part B, with each position's data entered as a separate occupation record or 'occupational observation'. To inform possible future changes to the survey design, a few questions were added to ask respondents whether they had any difficulties in reporting wages excluding overtime.

For the 2019 AWSS, in addition to the usual options of reporting pay as hourly wages or annual salaries, the survey allowed for the capture of pay provided on a monthly basis or as a day rate, with the average number of days per week also captured. Provisions were

developed to compute annual salaries for the small proportion of employers who reported pay on these bases.

An integrated Computer Assisted Telephone Interviewing/Computer Assisted Web Interviewing (CATI/CAWI) system was used to allow completion of the survey by phone and online.

D. Survey Administration

In early February 2019, survey administration commenced. After 200 employers had completed their survey, their data were extracted and reviewed for completeness to verify that survey programming was free of errors, respondents were completing the survey as intended, and data processing methods were functioning as they should.

The majority of the survey administration was undertaken between February and June 2019. Employers were sent a personalized survey package. Completed surveys were accepted and processed through July, with a few very large employers providing data late in the process. Participants could respond to the survey by mail, fax, telephone, online or e-mail. Telephone follow-up was undertaken to identify the appropriate business contact to complete the survey, encourage respondents to participate and, if possible, complete surveys by telephone. Follow-up calls were also undertaken to verify data and to complete surveys that had only provided partial information. Senior research staff from R.A. Malatest & Associates Ltd. contacted and worked with key employers to obtain survey data covering multiple business locations.

E. Survey Response

In total, 7,022 survey completions with valid occupational data were obtained, for a valid response rate of 30.0% once non-qualifiers (e.g., no longer in business, no employees at the time of the survey) and incorrect/outdated phone listings were removed. A total of 1,350 respondents provided information that covered more than one business location.

About three-fifths of employers (62%) of the completed questionnaires were filled out by respondents online, just over one-fifth (21%) were completed over the phone, 13% were completed on paper and returned by mail (or fax, or scanned and sent via email) and were data entered, while a small proportion of respondents (3%) returned the completed survey Excel spreadsheet or a custom data extract.

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Table 1
Call Status and Response Rate

Sample Drawn	Not-in-Service/ Wrong	Non-Qualifier (1)	Valid Sample	Refusals (2)	Total Valid Surveys (3)	Response Rate (Valid)
25,944	812	1,703	23,429	2,569	7,022	30.0%

(1) Non-Qualifiers: organizations which are found to be no longer in business, do not have any employees, do not have employees located in Alberta, have duplicate listings in the sample, or other reasons for ineligibility.

(2) Refusals: organizations that preferred not to participate.

(3) Total Valid Surveys: number of survey respondents providing valid survey data. Number of business locations surveyed is greater, as certain organizations provided information on multiple business locations as part of one survey.

The majority of organizations were contacted multiple times to encourage them to participate, with extensive telephone follow-up to achieve the response rate obtained.

There were also a significant number of partial survey completions, with the majority being incomplete web-based surveys. Efforts were made to contact these respondents and complete their survey. In the end, approximately 125 employers provided either partial data or unusable data (refused key information, job descriptions could not be NOC coded, commission-based wages that could not be expressed hourly or annually, etc.). Such unusable surveys are not counted in the survey completions in the table above. During follow-up, a number of respondents cited time constraints or workload reasons for not completing the survey.

F.   Occupations Coding

Each occupational observation (or position reported on by an employer) was assigned the appropriate 2016 NOC code by experienced coding staff. A small proportion of respondents provided the NOC codes assigned in their own HR databases.

G.   Data Processing

The data submitted by responding employers underwent data cleansing to ensure that the data provided were within range and logically consistent. For example, amongst other data checks:

- wages of less than the current minimum were identified;

- reported wages in the different wage brackets (average, starting, and top) were compared;

- reported average hours of work that seemed unusual in the context of the reported annual salaries were reviewed;

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- reported wages of over $100 per hour were reviewed to ensure that they were reasonable for the type of job; and

- employers' industry codes were reviewed and compared with the description they provided of their business activities.

Telephone follow-up was undertaken with some employers to clarify or correct information provided on the survey.

Certain key public sector employers, including the provincial and federal governments, and certain other large employers, provided their employee information in data formats that were easy to extract from their HR or payroll databases. These were reviewed and reformatted, with any necessary calculations performed to aggregate data to fit the survey data structure.

While some larger employers provided detailed occupational information broken out by region, estimation was undertaken for others to apportion occupational survey data by region according to the regional distributions for all employees. A few employers provided data that covered more than one position, which may have required follow-up with the employer and/or apportionment across applicable NOC's. For occupational observations with missing average hours worked, the survey average for the given NOC was used when converting from wage to salary and vice versa.

Calculations were undertaken on each occupational observation to convert salaries reported on an annual basis into hourly rates, and to convert wages reported on an hourly basis to annual salaries, using 52 weeks of the year and average hours per week as the basis for conversion. The review of the data shows that in some instances employers included overtime hours when reporting average hours per week. Therefore, in calculating hourly rates from annual salaries, some adjustments were required when the reported hours worked exceeded a "reasonable" negotiated base workweek.

The results of the calculations were reviewed for outliers, reasonableness, and logical consistency (e.g., starting, overall, and top wages form a logical progression). Calculated wages below the minimum wage of $15.00 per hour current during the survey[4] were removed if the source data could not be resolved, with the exception of certain exempt

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[4] On June 26, 2019, after the majority of survey data collection had concluded, the minimum wage rate regulations were changed to allow wages of $13.00 for students under the age of 18 for the first 28 hours of work in a week.

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occupational categories and occupations employed by nonprofits such as religious organizations.[5]

H.   Data Weighting

The survey data were weighted to account for survey non-response and to ensure that average wage calculations for each NOC are reflective of the number of employees in each occupational observation used in the calculation. Post-stratification of the survey sample by region, industry and employer size was undertaken in order to assign each employer a weight that reflected the distribution of the sample universe in the Canadian Business Patterns frame. In the 2019 cycle, the employer weighting stratification also took into account nonprofit status (as differentiated from for-profit and public sector organizations) to account for differences in levels of response for nonprofit organizations from a supplemental oversample of nonprofits. (The nonprofit results are reported on separately from the main AWSS results). Statistics reflecting the percent of employers responding to questions on hiring and the incidence of vacancies are weighted using only employer weights. Average statistics for wages, salaries, hours worked, months worked per year, and job vacancy rates are weighted using both the number of employees in each occupational observation and the employer weight.

I.   Survey Results

In total, 7,022 employers completed surveys with valid occupational data. Some employers provided information for more than one business location with employees. The survey data collected represent over 13,400 business locations in the eight economic regions in Alberta[6]. The sampling error associated with overall survey results

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[5] Some occupations are exempt from the minimum wage or have different rules, including real estate brokers, securities sales persons, and farm employees, among others. Few employers of real estate brokers or securities salespersons reported wages lower than the minimum, however, a few farm employers reported wages below minimum, which were allowed in the final dataset. It may be noted that some nonprofits reported annual or monthly salaries that worked out to less than minimum wage when the hours of work were taken into account. These were allowed in the final dataset. Occupations for certain industry-region strata which may have some survey results below $15/hour include: professional occupations in religion, program leaders and instructors in recreation (e.g., summer camp staff); certain occupations in art and culture (conductors and composers, graphic designers, other technical occupations in the arts); and, very occasionally, some administrative occupations, food service workers, janitors, library assistants, and research assistants, particularly for strata that include non-profit organizations. Out of 15,392 NOC-industry-region combinations with reportable results, only 61 had 5th-percentile wages below minimum and only three had average or median wages below minimum.

[6] Based on information provided by employers on the number of locations covered by their data.

for questions asked of all respondents is estimated to be ±1.2% at a 95% confidence level (19 times out of 20).[7]

Employers provided valid information on almost 76,000 positions. The wage information collected for these positions covers over 480,400 employees in Alberta (20% of Alberta's employed labour force[8], or almost 24% of payroll employment[9]).

The survey results are summarized by region and by industry in Appendix A of this report.

Survey averages were calculated for each NOC at the provincial level and were also broken out by industry and by region. A set of industry-specific reports was prepared to highlight the survey results for the most common occupations in each industry.

The statistics calculated included:

- average hours worked;
- averages, medians, 5th percentiles, and 95th percentiles for the overall, starting and top wages;
- percent of companies that hired within the last two (2) years;
- percent that experienced hiring difficulties (of those that hired);
- percent that reported having job vacancies unfilled for more than four months; and
- overall job vacancy rate (for vacancies unfilled for more than four months).

Statistics were calculated using weighted survey data, as outlined above.

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[7] Sample error (or maximum variation) taking into account sample design effects associated with over/under-sampling of certain strata and data weighting, based on number of unique employers responding and the size of the employer universe in the sampling frame. The reliability of occupational data differs from this, and differs by occupation, depending on the number of employers responding, the number of employees reported, data weighting, and the variance within the observed data. Readers are referred to the section on data reliability later within this document.

[8] In Alberta, in September 2019, total employment, including self-employed workers, and workers who had a job but were not at work, was 2,349,200. Statistics Canada Labour Force Survey. Table 14-10-0287-03 Labour force characteristics by province, monthly, seasonally adjusted (last accessed October 8, 2019).

[9] In Alberta, in July 2019, total payroll employment, including employees paid by the hour, salaried employees and other employees was 2,034,880. Statistics Canada Survey of Employment Payroll and Hours (SEPH), Statistics Canada. Table 14-10-0223-01 Employment and average weekly earnings (including overtime) for all employees by province and territory, monthly, seasonally adjusted (last accessed October 8, 2019).

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K. Data Reliability

The Coefficient of Variation (CV) of the estimated overall wage was used as a measure of the reliability of the survey results. The CV was calculated taking into account the design effects associated with the sample weighting. The ranges used to establish categories of reliability are as follows:

"A" = high reliability = represents a CV of less than 6.00%;

"B" = good reliability = represents a CV of between 6.01% and 15.00%;

"C" = lower reliability = represents a CV of between 15.01% and 33.00%;

"D" = lowest reliability = represents a CV of more than 33.00%.

"NA" = not calculated = only one observation, or no data.

The reliability category determined by the CV may also have been downgraded if relatively few surveys observations were obtained, or if survey observations provided relatively low coverage of the total known employment.[10]

L. Data Files and Deliverables

Deliverables for this project include:

- **Public Results Tables.** Three results tables viewable in Beyond 20/20's multi-dimensional data viewer software:

    o NOC by geography (provincial, 8 regions);
    o NOC by industry (provincial, 19 major industry groups); and
    o NOC by industry (19 major industry groups) by region (8 regions).

- **MS Access Databases and Tables.** These contain:

    o calculated results by occupation (same results as presented in the Beyond 20/20 files) for use to look up reported results;
    o internal-use-only database, with calculated results by occupation accompanied by information on data anomalies and custom results

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[10] Reliability codes of A, B or C were downgraded if any of the following criteria were met: downgrade to reliability B if fewer than 30 survey observations or if survey observations represent less than 50% of all employment in the NOC cell; downgrade to reliability C if fewer than 20 survey observations or if survey observations represent less than 33% of all employment in the NOC cell ; downgrade to reliability D if fewer than 10 survey observations or if survey observations represent less than 25% of all employment in the NOC cell. in the NOC cell per Data from Statistics Canada's 2016 Census were used to represent estimated employment by region, industry and NOC.

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suppression instructions, as well as other survey data (which are confidential and not for circulation); and

- o   Excel tables summarizing data from the master database.

- **Reports.** These include:

  - o   Methodology Report;
  - o   19 Industry Sector Reports;
  - o   AWSS Overview Report;
  - o   Average Wages by Industry by Region;
  - o   Top Vacancy Rates (for Alberta occupations and by region);
  - o   Data Dictionary; and
  - o   User Guide.

M.   Data Limitations

The following are possible caveats associated with the use of information from the 2019 cycle of the *Alberta Wage and Salary Survey*.

- **Lack of full disclosure of information.** Some employers did not provide responses to certain questions on the survey.

- **Misinterpretation of survey questions.** While the survey instrument was tested for applicability and understanding, there remains the possibility that certain questions were misunderstood by employers. Employers failing to read all instructions and definitions of terms provided may have resulted in inaccurate survey information.

- **Wage-salary conversions.** The calculation of salaries from wages reported by employers (or of wages from salaries) was based on the average hours worked per week and 52 weeks per year. Issues associated with incorrect survey data or fewer than 52 weeks worked may yield errors in the calculations. To address this, calculated results were thoroughly scrutinized and adjustments were made to calculation algorithms to adjust for accidental reporting of overtime. In some instances, conversions could not be made because of missing data (e.g., unknown average hours worked per week).

- **Wages reported are base wages**. Wage results do not include bonuses, benefits, profit shares, overtime pay, and other forms of compensation beyond the base rate. Wages may include cost-of-living arrangements or equivalent annual/hourly rates for positions compensated purely by piecework or commission. For certain occupations – such as waiter/waitress, certain management occupations, and occupations that typically require large amounts of overtime – wage statistics may seem lower than

the actual take-home pay including tips, overtime, bonuses, and/or other compensation.

- **Data represent a "snapshot" of employer input.** As the majority of the data collection for this project was undertaken between February and June 2019, the data represent a "snapshot" of wage information and may not fully reflect the current or future situations of businesses in the area.

- **Data weighting.** To best represent the employee population, the data were weighted for non-response based on region, industry (and employer size class where appropriate), taking into account the number of locations covered by employers who reported on multiple locations, and also weighted by the number of employees reported on. As with any weighted survey data, these weightings may affect the reliability of statistical results in occupations with very small samples. To address this issue somewhat, upper limits to employer weightings were set within each region-industry-size category and no employer was assigned a weight of less than one.

APPENDIX A: Survey Data Collected by Industry and by Region

2019 Alberta Wage and Salary Survey
Employers Surveyed, Locations Reported, Positions Reported, and Employees Covered
By Industry

Industry	Employers Surveyed	Employment Locations Reported On*	Positions Reported On (occupational observations)	Employees Covered
Agriculture	152	200	621	3,063
Forestry, Logging, Fishing, & Hunting	25	34	191	1,456
Mining	19	134	238	1,663
Oil & Gas Extraction	108	256	1,769	8,387
Utilities	55	101	431	1,177
Construction	666	1,120	3,916	22,144
Manufacturing	709	990	6,305	30,224
Wholesale Trade	319	612	2,881	10,616
Retail Trade	712	1,720	4,718	40,083
Transportation & Warehousing	352	541	2,604	15,848
Information, Culture, Recreation (incl. Tourism)	484	618	3,433	18,170
Finance, Insurance, Real Estate, Leasing	321	618	2,377	10,713
Professional, Scientific & Technical Services	519	778	3,771	18,160
Business, Building, Other Support Services	236	451	1,059	5,867
Educational Services	287	1,436	3,799	56,774
Health Care & Social Assistance	689	1,921	7,277	133,489
Accommodation & Food Services	542	675	3,155	20,722
Other Services (Repair, Personal, Related)	608	836	3,429	11,686
Public Administration	219	431	23,907	70,119
Alberta Total	**7,022**	**13,472**	**75,881**	**480,361**

* The number of employment locations reported on in the Educational Services sector generally includes all schools associated with participating school boards. In the Public Administration sector, some participating municipalities reported various offices and work locations, while others did not. Counts in these industries may differ from external reference data.

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2019 Alberta Wage and Salary Survey
Employers Surveyed, Locations Reported, Positions Reported, and Employees Covered
By Economic Region

Economic Region	Employers Surveyed	Employment Locations Reported On	Positions Reported On (occupational observations)	Employees Covered
Athabasca-Grande Prairie	932	1,443	6,794	33,966
Banff-Jasper-Rocky Mountain House	526	656	3,518	15,752
Calgary	1,753	3,318	22,134	171,617
Camrose-Drumheller	795	1,227	5,504	21,769
Edmonton	1,797	3,436	27,656	152,766
Lethbridge-Medicine Hat	997	1,421	7,132	37,321
Red Deer	767	1,055	5,610	28,979
Wood Buffalo-Cold Lake	469	666	3,582	18,074
Alberta Total *	**7,022**	**13,472**	**75,881**	**480,361**

* Some employers provided data for employees in more than one region, while a few others did not provide full data on regional apportionment; in addition, there may also have been occasional minor rounding errors in the regional apportionment calculations; therefore, individual region counts of employers and positions do not sum to the Alberta total.

APPENDIX B: Terms and Definitions

Occupation (4-Digit NOC):

A collection of similar jobs/positions found in several firms. Occupations in this questionnaire are based on the 500 four-digit classifications identified and described by the 2016 National Occupation Classification (NOC) system. Data for each occupation are presented at the four-digit level. Statistics were also calculated for occupational classifications aggregated to 140 minor groups (three-digit NOC), 40 major groups (two-digit NOC), and 10 broad occupational categories (one-digit NOC).

Occupational Observation:

Information on a specific job or position provided by an individual employer. Some employers provided multiple occupational observations for different positions within the firm that could be coded to the same NOC; therefore, when implementing rules for minimum sample sizes for inclusion of survey results, multiple occupational observations for the same employer were counted only once.

Industry:

Whenever possible (in accordance with confidentiality criteria), industry-specific statistics are provided. A total of 19 industry groups are identified in this survey, and are defined by combinations or customized subdivisions of major groups in the 2007 North American Industry Classification System (NAICS).

Region:

Whenever possible (in accordance with confidentiality criteria), region-specific statistics are provided. A total of 8 regions in Alberta are identified in this survey, as defined by Statistics Canada's Economic Regions, and shown on the map in Appendix C.

Employer:

A private or public sector business that employs workers. Only employers with 5 or more employees were targetted for this survey, although a number of employers with fewer employees participated.

Employee:

A person who receives a rate of pay from a company in return for his or her services. Includes working owners. Not included are apprentices, proprietors, non-working partners or principals or people involved in contract work.

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Full-time Employee:

An employee whose normal hours of work (excluding overtime) are greater than or equal to 30 hours per week.

Part-time Employee:

An employee whose normal hours of work (excluding overtime) are less than 30 hours per week. Both full-time and part-time employees are included in the data. Employers were asked to provide 'head counts' (<u>not</u> Full-Time Equivalents), and to provide average hours worked and wages/salaries across all employees.

Journeyperson:

An employee who has earned a Journey Certificate. For trades' occupations, the survey required employers to provide wages for qualified tradespersons or certified journey persons only. Users of the data should be aware that the starting wage statistics reflect starting wages for qualified trades' workers, <u>not</u> apprentice wages.

Average Hours Worked per Week:

The average number of hours worked per week by employees in an occupation, exclusive of overtime.

Average Months per Year:

The average number of months employees in the occupation are on payroll per year. Employers were asked to provide the average number of months on payroll per year if the employees in the occupation at their workplace were seasonal, otherwise 12 months were assumed.

Pay Brackets (Overall, Starting, and Top):

Pay brackets for which information was collected and reported for each occupation:

- Overall pay is the average pay across all employees in the given occupation,

- Starting pay is the average pay offered for entry-level positions, and

- Top pay is the average pay offered to top-paid employees.

Pay Rate:

The average gross hourly wage, annual salary or commission paid, in dollar terms before any deductions, exclusive of overtime hours and other premium payments. Included are cost-of-living adjustments and production bonuses. The rate of pay is

based on the actual hours worked per week in the reference period exclusive of overtime hours. Reported rates are not standardized to a fixed workweek.

Mean (Average) Pay Rate (Wages and Salaries):

The average pay rate computed by the survey respondents was calculated by adding together the rates of pay for all employees and then dividing the sum by the total number of employees.[11]

Median Wage Rate:

The median is a statistical measure of central tendency. 50% of all employees included in the occupational group and pay category receive more than the median pay rate, while 50% receive less than the median pay rate.

Percentiles (Low and High Wage Rates):

The 5th and 95th percentile wages provided for each pay bracket illustrate the general range of wages received by 90% of employees, excluding outliers. Generally, only 5% of employees in the occupational group (NOC) and pay bracket receive less than the 5th Percentile, and 95% of employees receive less than 95th Percentile.[12]

Hiring Activity (last two years):

Percent of employers that indicated that they had hired within the past two years to a selected NOC.

Hiring Difficulty (of those that hired):

Of employers that had recruited to a given occupation in the past two years, the percent that indicated experiencing difficulty hiring to the occupation.

Employers with Unfilled Vacancies (of more than four months):

Percent of employers that reported having unfilled vacancies in the selected NOC for over four months (at the time of the survey).

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[11] In some instances, the mean may not be the best measure of the central tendency of the survey results. Occupational observations with outliers or atypically high or low wages will tend to influence the value of the calculated mean. In very rare instances, the mean wage may exceed the 95th percentile wage due to the influence of outliers. For this reason, the median is also reported as a measure of central tendency.

[12] Occasionally, the 5th Percentile or the 95th Percentile (or in some instances both the 5th and 95th Percentiles) may be the same or very close to the Median Wage. This is normal for this data set, and may happen when there is little or no variation in wages paid by the employers surveyed.

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Vacancy Rate:

The percentage of total positions across all employers in a selected NOC reported as unfilled for four months or more. This vacancy rate is calculated as follows:

$$= \frac{no.\ of\ positions\ vacant\ for\ over\ 4\ months}{no.\ of\ positions\ vacant + no.\ of\ employees\ at\ employers\ that\ responded\ to\ the\ vacancy\ question}$$

Weighting:

Assigning factors to numbers in the survey data to make each number's effect on a computation reflect its importance or frequency of occurrence in the population.

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APPENDIX C: Alberta Economic Regions

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