



Alberta's Occupational Demand and Supply Outlook, 2008 - 2018

Disclaimer Statement

Alberta Employment and Immigration (E&I) provides labour market information to assist both the government and the public in decision-making. Occupational demand and supply outlooks are affected by a variety of factors and will change over time. When making decisions based on projections, multiple sources of information should always be considered.

Work began on the Alberta Occupational Demand Outlook Model seven years ago. Currently, the model is able to predict occupational demand for 520 occupations for Alberta.

In 2003, work began on a counterpart model, the Alberta Occupational Supply Outlook Model, which helps provide insight into current labour market supply and possible supply and demand imbalances that may occur in the future.

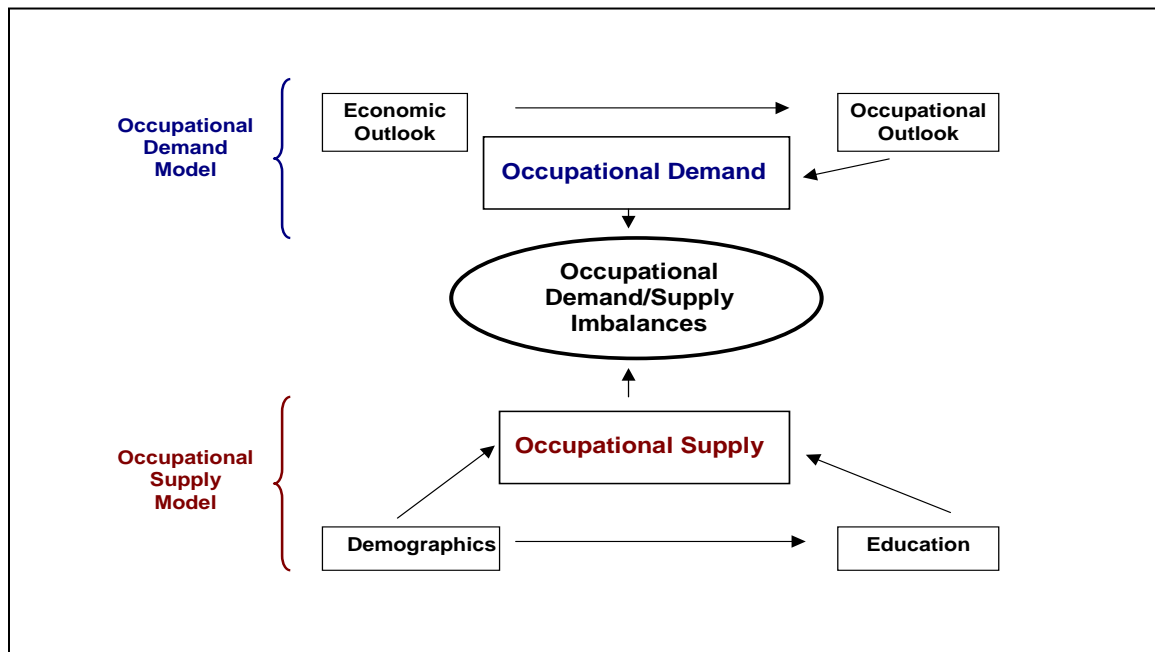
E&I continues to enhance this model's precision and encourages readers to provide advice and feedback on its usefulness and opportunities for improvements to lfs.analyst@gov.ab.ca.

Background

Over the past two decades, Alberta has had the highest economic growth rate and highest employment rate in Canada. The demand for workers in Alberta's robust economy has led to a tight labour market and skill shortages in many occupational groups. Moreover, an aging population, leading to increased retirements, may further compound the shortage of skilled labour.

To better understand and respond to this situation, Alberta Employment and Immigration (E&I) has developed both the Alberta Occupational Demand and Supply Outlook Models. Figure 1 provides an overview of the two models. These models project the demand and supply for different occupations in Alberta between 2008 and 2018. By calculating imbalances between demand and supply, future occupational shortages or surpluses can be forecasted. Results from the two models help users make better decisions about developing and funding programs and policies as well as personal decisions about education, jobs and careers.

Figure 1: An Overview of the Demand and Supply Models



Background

Each model can be broken down into sub-models, which use many data sources. The Alberta Occupational Supply Outlook Model (AOSOM) has 30 linked sub-models and over 100,000 data series. The AOSOM was developed in 2003 and enhancements have been made annually to the original model. For example, this year the model has been enhanced by extending enrollment and institutional coverage, expanding the coverage of major field of study, and integrating educational demand into the model.

Over time as demand for and supply of occupational employment changes, the proportion of people with a given education supplying occupations also changes. In the updated version of the occupational supply model, relative demand slowly alters the occupation/education coefficients. Over time, proportionately more people supply labour to occupations with relatively stronger demand, and proportionately fewer people supply labour to occupations with comparatively weaker demand.

The Alberta Occupational Demand Outlook Model (AODOM) has been used for the past seven years and has proven to be reliable. In fact, when we compared the actual employment values to the projected values, most data points have been over 90% accurate.

Once occupational demand and supply have been projected, a simple ratio of demand/supply is calculated to measure imbalances. In an ideal or balanced labour market the ratio is one, whereas a ratio of greater than one indicates a potential shortage, as demand is greater than supply and a ratio less than one indicates a supply surplus.

This year's findings of the two models are provided in this report. The results presented in this report are from the base case forecast, however, the low and high scenarios results, at the aggregate level, are available upon request. E&I believes that continued work on and development of the AOSOM will help to provide important information on labour market imbalances. E&I encourages readers to provide advice and feedback on the model's usefulness, construction and results. Please see Appendices A and B for a detailed view of the model's methodology and assumptions.

Overall Occupational Outlook

Alberta's labour market is projected to grow by 400,000 workers between 2008 and 2018, an annual average rate of 1.8%. A net increase of 307,000 workers is expected to join the labour force, as occupational supply increases at an annual rate of 1.4%. Over the next ten years, Alberta could experience a labour shortage of approximately 93,000¹ workers. Table 1 shows more detailed information about the overall occupational outlook. The numbers in the table represent the number of workers in Alberta.

Table 1

Overall Occupational Demand and Supply Outlook for Alberta, 2008 - 2018											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Demand (000s)	2,008	2,055	2,089	2,130	2,171	2,206	2,245	2,286	2,327	2,368	2,408
Supply (000s)	2,058	2,101	2,131	2,165	2,198	2,222	2,251	2,281	2,309	2,338	2,365
Labour shortage ²		3,945	4,163	6,649	8,214	10,654	10,926	11,063	11,987	12,562	12,861
Cumulative Shortage		3,945	8,109	14,757	22,971	33,625	44,551	55,614	67,601	80,163	93,024

For a listing of occupational demand and supply projections, along with forecasted imbalances, for most of 140 occupations and several occupations at the 4-digit NOC³, please see Appendix D and E respectively.

¹ Both models carry assumptions that may change in the future, therefore, these numbers are likely to change

² Labour shortage = (Demand [year t+1] – Demand [year t]) – (Supply [year t+1] – Supply [year t])

³ NOC: National Occupational Classification

Conclusion

Over the forecast period 2008 to 2018, using both the Alberta Occupational Demand and Supply Outlook Models, potential labour imbalances for different occupations can be anticipated. It should be noted that both of these models make projections and therefore carry assumptions that may change in the future. Hence, a labour shortage or surplus may not be as severe as the models predict. For example, as occupational demand and supply conditions change, individuals may decide to enter a field of study that reflects these current conditions and more people may be attracted to the province. The results of these models are intended as indicators of where the current situation in Alberta may lead in future years.

Appendix A

Alberta Occupational Demand and Supply Outlook Models' Methodologies

Figure 2 provides a detailed view of how occupational demand and supply imbalances are projected.

Two main components in the Alberta Occupational Demand Outlook Model (AODOM) are the economic and occupational components. The economic component produces an outlook of Alberta's economy. Once the performance of the economy is projected, the occupational component calculates the employment that is required to maintain the projected growth.

The Alberta Occupational Supply Outlook Model (AOSOM) makes occupational supply projections with a series of changes that begin with a demographic outlook and end with occupational supply for occupations. The model has three major components: demographic, education and replacement demand. Education has a central importance in this model because of its role in training the labour force.

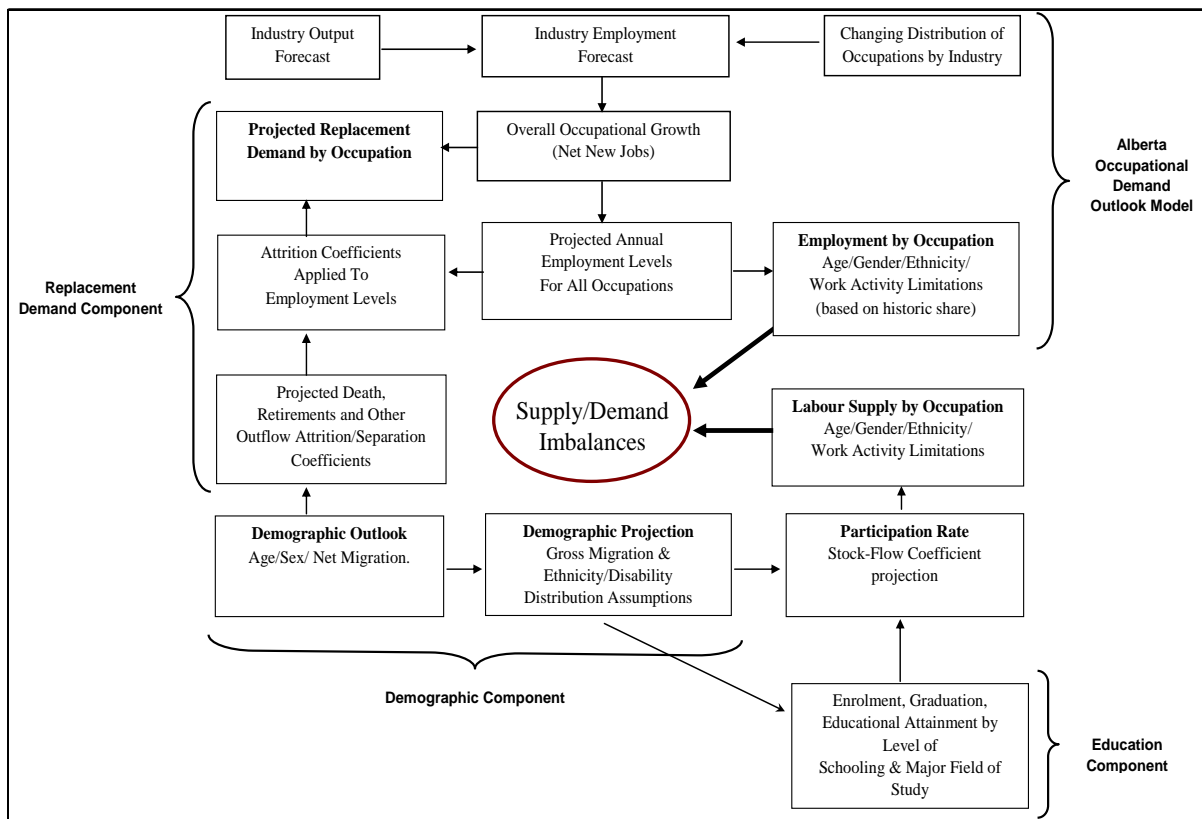


Figure 2: A Detailed View of the Alberta Occupational Supply and Demand Outlook Models

Appendix B

Alberta Occupational Supply Outlook Model Assumptions

As with all forecasts, a number of assumptions are used to derive the results. The model can utilize different assumptions to test various economic scenarios. The assumptions used to generate the results in Appendix E are set out below.

Alberta's Key Economic Indicators

- The average annual¹ growth rate for the Gross Domestic Product (GDP) is 3.3%.
- The average annual unemployment rate is 4.0%.
- The average annual employment growth rate is 1.8%.
- The average annual participation rate is 73.9%.

Demographic Component

- Population levels by age and gender groups are determined by a detailed population projection by single year age cohorts. Total population averages 1.7% growth over 2008 - 2018.

Migration

- The level of out-migration is equal to the historic five-year average from 1999 to 2003.
- The level of in-migration equals the projected net-migration plus the assumed out-migration.
- Age and gender distributions for in-migration and out-migration are determined by the historic age and gender distribution for net migration.
- Future immigrants by education type will experience similar occupational outcomes as existing residents of Alberta.

Aboriginals

- The Alberta aboriginal population's age specific birth and death rates are the same as the Canadian aboriginal population's rates.

Visible Minorities

- The visible minorities' age/gender birth and death rates are equal to the Alberta general population's birth and death rates.
- The visible minorities' less than 15 years old age groups (less than 1, 1-3, 4-9, 10-15 years) are assumed to have the same distributions as the Alberta younger age groups.

¹ The average annual data is for the period 2008 - 2018

Appendix B

Demographic Component (Cont.)

Activity Limitations

- To calculate the number of people with activity limitations, a share approach by age and gender was used.¹

Education Component

Enrolment & Graduation

- The number of people who attend school is calculated as a share of the total number in that age or gender group. This proportion is based on historic shares.
- The secondary school enrolment rates for males and females over the forecast follow the historic trends from 2002 to 2007.
- Enrolment rates for post-secondary institutions over the forecast follow the historic trends from 2002 to 2007.
- Graduation rates are determined by level of schooling, field of study, age and gender. Graduation rates are calculated as a share of those who could potentially graduate and are kept constant over the forecast period.
- The overall number of university, college, vocational and trades graduates is determined by applying the graduate rate to the different age groups who are enrolled in that institution and could potentially graduate.
- Drop out rates and mature student rates are used for the different fields of study and level of schooling.
- Migration rates by educational attainment are allowed to adjust to reflect relative demand conditions in Alberta.

Educational Attainment

- To calculate the number of people with university, college, vocational and trades, and high school education, a stock-flow approach² is used.
- Those with less than a high school education are determined to be those not already accounted for in other educational attainment categories.

¹ **Share Approach:** A method to estimate the future number of people in a group of interest. The proportion of the group of interest to the general population is applied to the forecasted general population estimates to find the predicted group of interest's population. **Example:**

The proportion at time t	Is Multiplied by the Projected Alberta Population for time t+1	To find the projected number of people with activities limitations for time t+1
$\left[\frac{\text{Activity Limitations}}{\text{Alberta Population}} \right]_t$	\times Alberta Population Projection $_{t+1}$	$=$ Activity Limitation Population $_{t+1}$

² **Stock-Flow Approach:** A method in estimating the future population of people in a group of interest. To find the forecasted population, the population from the previous year is adjusted to add those expected to enter that group and subtract those that are expected to leave that group. **Example:**

Number of people with College/Trades Training $_{t+1}$	=	Number of people with College/Trades Training $_t$	plus	Recent Graduates of College/Trades $_{t+1}$	minus	People Leaving Group due to death, retirement, etc. $_{t+1}$
--	---	--	------	---	-------	--

Appendix B

Education Component (Cont.)

Educational Attainment (Cont.)

- Less than high school educational attainment is adjusted to reflect the estimated portion of mature students in post-secondary institutions that do not have a high school diploma. High school educational attainment is also adjusted to subtract recent graduates from university, college and vocational and trades.
- The overall enrolment rate for mature students is used for all age groups within the mature student category.
- To project educational attainment by field of study, the historic relative enrolment rate for each age and sex cohort is maintained over the projection period.
- The share of new graduates by field of study for each age, sex group is constant over time.
- Educational attainment is based on the new graduate forecast plus net inflows from migration less deaths.

Replacement Demand Component

- Retirement rates are derived from Alberta Labour Force Survey (LFS) data, at a fairly aggregate occupational level.
- Retirement by occupation uses the age distribution in that occupation given by the census. As people working in a specific occupation enter older age cohorts a larger share will retire. Age specific retirement rates rise over time to the long-term trend toward falling median retirement ages.
- Other labour force separation rates are derived from the Alberta LFS data at the major group level of aggregation. These separation rates are kept constant over the forecast period.
- Emigration, out-migration and death rates are assumed to be the same for those employed as the general population for a particular age/gender group.

Occupational Component

- Potential occupational supply is determined over the historical period by the historical distribution of occupation by educational attainment—four levels of schooling and 46 post-secondary fields of study.
- The estimated number of individuals by occupation, age and gender is scaled up to ensure that, in general, the relative balance between labour supply and demand in 2006 is maintained.
- Over the forecast period, the distribution of occupation by education attainment will adjust to changes in relative occupational to educational demand at a pace that is consistent with differences occupational separation rates.
- Potential occupational supply is translated into actual occupational supply by using historic participation rates by occupation. Over forecast period, occupational participation rates adjust to reflect changes in relative occupational demand.

Appendix C

Calculating the Fastest Growing Shortages and Surpluses

To measure occupational shortages and surpluses, a ratio for each occupation is calculated:

$$\frac{\text{Occupational Demand}}{\text{Occupational Supply}} \quad (1)$$

A ratio less than one indicates that supply is greater than demand, a **supply surplus**.

A ratio greater than one occurs if demand is greater than supply, a **supply shortage**.

For each year in the forecast period the growth rate of the demand/supply ratio is calculated using the following formula:

$$\left[\frac{\left[\frac{\text{Demand}}{\text{Supply}} \right]_t \text{ minus } \left[\frac{\text{Demand}}{\text{Supply}} \right]_{t-1}}{\left[\frac{\text{Demand}}{\text{Supply}} \right]_{t-1}} \right] \times 100 \quad (2)$$

Then, the average annual growth rate for the demand/supply ratio is calculated for each of NOC 3-digit and 4-digit occupations. The average annual growth rate is a simple mean of the yearly growth rates for the period 2008 to 2018.

The highest demand/supply average annual growth rates identify the occupations with the fastest growing shortages. The lowest average annual growth rates find the occupations with the fastest growing surplus during the forecast period.

Example a: An average growth rate of 2.0% indicates that occupational demand will grow 2.0 percentage points faster than occupational supply on average each year.

Example b: An average growth rate of -0.7% indicates that occupational supply will grow 0.7 percentage points faster than occupational demand on average each year.

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
All Occupations												
Demand Projection	2,007,898	2,054,626	2,089,436	2,129,690	2,170,650	2,205,675	2,244,988	2,286,152	2,326,526	2,368,295	2,407,879	
Supply Projection	2,058,034	2,100,818	2,131,465	2,165,069	2,197,816	2,222,187	2,250,574	2,280,675	2,309,061	2,338,269	2,364,993	
Demand/Supply*	0.976	0.978	0.980	0.984	0.988	0.993	0.998	1.002	1.008	1.013	1.018	0.994
A01 - Legislators and senior management												
Demand Projection	6,390	6,840	7,134	7,522	7,928	8,282	8,622	8,958	9,309	9,661	10,001	
Supply Projection	6,405	7,116	7,974	8,572	9,085	9,421	9,652	9,864	10,105	10,316	10,567	
Demand/Supply	0.998	0.961	0.895	0.878	0.873	0.879	0.893	0.908	0.921	0.936	0.946	0.917
A11 - Administrative services managers												
Demand Projection	12,109	12,510	12,764	13,094	13,429	13,701	13,988	14,284	14,585	14,901	15,195	
Supply Projection	12,450	12,732	12,912	13,196	13,525	13,789	14,063	14,408	14,703	15,011	15,334	
Demand/Supply	0.973	0.983	0.989	0.992	0.993	0.994	0.995	0.991	0.992	0.993	0.991	0.989
A12 - Managers in engineering, architecture, science and information systems												
Demand Projection	6,798	7,010	7,117	7,283	7,428	7,517	7,622	7,737	7,849	7,994	8,111	
Supply Projection	6,712	6,926	6,983	7,149	7,273	7,338	7,443	7,548	7,627	7,760	7,863	
Demand/Supply	1.013	1.012	1.019	1.019	1.021	1.024	1.024	1.025	1.029	1.030	1.032	1.023
A13 - Sales, marketing and advertising managers												
Demand Projection	15,567	15,822	16,013	16,208	16,416	16,570	16,743	16,924	17,097	17,283	17,460	
Supply Projection	16,769	16,522	16,458	16,518	16,647	16,769	16,924	17,105	17,246	17,419	17,519	
Demand/Supply	0.928	0.958	0.973	0.981	0.986	0.988	0.989	0.989	0.991	0.992	0.997	0.979
A14 - Facility operation and maintenance managers												
Demand Projection	4,817	4,934	5,012	5,105	5,209	5,285	5,370	5,460	5,546	5,638	5,725	
Supply Projection	4,832	4,698	4,577	4,534	4,504	4,442	4,448	4,458	4,468	4,493	4,482	
Demand/Supply	0.997	1.050	1.095	1.126	1.157	1.190	1.207	1.225	1.241	1.255	1.277	1.165
A21 - Managers in retail trade												
Demand Projection	33,375	33,720	34,073	34,288	34,579	34,758	35,011	35,283	35,538	35,791	36,046	
Supply Projection	34,443	35,125	35,571	35,748	35,884	35,723	35,625	35,514	35,336	35,083	34,808	
Demand/Supply	0.969	0.960	0.958	0.959	0.964	0.973	0.983	0.993	1.006	1.020	1.036	0.984
A22 - Managers in food service and accommodation												
Demand Projection	21,125	21,755	22,247	22,803	23,371	23,795	24,400	25,029	25,682	26,314	26,875	
Supply Projection	21,391	21,953	22,507	23,057	23,620	24,152	24,718	25,302	25,879	26,461	27,033	
Demand/Supply	0.988	0.991	0.988	0.989	0.989	0.985	0.987	0.989	0.992	0.994	0.994	0.990
A30 - Managers in financial and business services												
Demand Projection	6,416	6,785	7,007	7,268	7,523	7,706	7,956	8,244	8,507	8,782	9,074	
Supply Projection	6,111	6,713	6,977	7,299	7,618	7,807	8,142	8,463	8,824	9,156	9,488	
Demand/Supply*	1.050	1.011	1.004	0.996	0.988	0.987	0.977	0.974	0.964	0.959	0.956	0.988
A32 - Managers in health, education, social and community services												
Demand Projection	11,230	11,408	11,486	11,604	11,715	11,821	11,992	12,193	12,374	12,561	12,742	
Supply Projection	11,348	11,596	11,826	12,047	12,254	12,445	12,625	12,792	12,943	13,081	13,207	
Demand/Supply	0.990	0.984	0.971	0.963	0.956	0.950	0.950	0.953	0.956	0.960	0.965	0.963

*Supply Shortage if Greater Than 1
 Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
A33 - Managers in public administration **												
Demand Projection	3,475	3,540	3,572	3,623	3,676	3,716	3,765	3,818	3,868	3,921	3,974	
Supply Projection	3,430	3,472	3,522	3,576	3,649	3,713	3,764	3,816	3,855	3,881	3,922	
Demand/Supply	1.013	1.020	1.014	1.013	1.007	1.001	1.000	1.001	1.003	1.010	1.013	1.009
A36 - Managers in other services												
Demand Projection	2,662	2,721	2,756	2,798	2,841	2,878	2,923	2,973	3,016	3,060	3,105	
Supply Projection	2,611	2,554	2,560	2,614	2,741	2,887	2,956	3,031	3,103	3,164	3,211	
Demand/Supply	1.020	1.065	1.077	1.070	1.036	0.997	0.989	0.981	0.972	0.967	0.967	1.013
A37 - Managers in construction and transportation												
Demand Projection	23,939	24,916	25,959	27,080	28,289	29,581	30,935	32,351	33,833	35,365	36,941	
Supply Projection	23,574	24,238	25,195	26,399	27,687	28,941	30,403	32,007	33,448	34,947	36,485	
Demand/Supply	1.015	1.028	1.030	1.026	1.022	1.022	1.018	1.011	1.011	1.012	1.013	1.019
A38 - Managers in primary production (except agriculture) **												
Demand Projection	4,968	5,143	5,167	5,363	5,541	5,587	5,605	5,611	5,709	5,821	5,828	
Supply Projection	4,936	4,948	4,806	4,913	4,990	4,928	4,852	4,769	4,861	4,966	4,929	
Demand/Supply*	1.006	1.040	1.075	1.092	1.110	1.134	1.155	1.177	1.174	1.172	1.183	1.120
A39 - Managers in manufacturing and utilities												
Demand Projection	7,363	7,530	7,622	7,770	7,899	7,955	8,041	8,123	8,212	8,355	8,434	
Supply Projection	7,559	7,997	8,254	8,429	8,513	8,478	8,453	8,417	8,393	8,416	8,390	
Demand/Supply	0.974	0.942	0.923	0.922	0.928	0.938	0.951	0.965	0.978	0.993	1.005	0.956
B01 - Auditors, accountants and investment professionals												
Demand Projection	40,496	41,564	42,111	42,940	43,692	44,158	44,730	45,363	45,992	46,745	47,384	
Supply Projection	41,153	42,396	42,959	43,682	44,309	44,608	45,135	45,720	46,238	46,827	46,843	
Demand/Supply	0.984	0.980	0.980	0.983	0.986	0.990	0.991	0.992	0.995	0.998	1.012	0.990
B02 - Human resources and business service professionals												
Demand Projection	21,102	21,434	21,597	21,845	22,057	22,188	22,357	22,551	22,728	22,954	23,147	
Supply Projection	21,368	21,624	21,866	22,088	22,292	22,474	22,635	22,774	22,893	22,992	23,071	
Demand/Supply	0.988	0.991	0.988	0.989	0.989	0.987	0.988	0.990	0.993	0.998	1.003	0.991
B11 - Finance and insurance administrative occupations												
Demand Projection	44,775	45,484	45,986	46,541	47,117	47,643	48,176	48,732	49,255	49,776	50,345	
Supply Projection	45,059	45,935	46,492	47,043	47,528	47,827	48,217	48,658	49,012	49,400	49,889	
Demand/Supply	0.994	0.990	0.989	0.989	0.991	0.996	0.999	1.002	1.005	1.008	1.009	0.997
B21 - Secretaries, recorders and transcriptionists												
Demand Projection	16,354	16,983	17,447	17,971	18,522	19,105	19,669	20,237	20,793	21,324	21,891	
Supply Projection	16,603	17,997	18,865	19,615	20,353	20,997	21,534	22,039	22,497	22,852	23,189	
Demand/Supply	0.985	0.944	0.925	0.916	0.910	0.910	0.913	0.918	0.924	0.933	0.944	0.929
B31 - Administrative and regulatory occupations												
Demand Projection	49,797	50,831	51,826	52,824	53,866	55,003	56,126	57,248	58,438	59,628	60,788	
Supply Projection	50,557	51,863	52,932	53,872	54,721	55,541	56,196	57,027	58,098	59,266	60,520	
Demand/Supply	0.985	0.980	0.979	0.981	0.984	0.990	0.999	1.004	1.006	1.006	1.004	0.993

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
B41 - Clerical supervisors												
Demand Projection	13,546	13,846	14,030	14,256	14,498	14,667	14,860	15,075	15,268	15,485	15,700	
Supply Projection	13,878	14,142	14,387	14,608	14,816	15,010	15,192	15,363	15,520	15,668	15,805	
Demand/Supply	0.976	0.979	0.975	0.976	0.979	0.977	0.978	0.981	0.984	0.988	0.993	0.981
B51 - Clerical occupations, general office skills												
Demand Projection	32,630	34,069	34,996	36,135	37,226	38,195	39,309	40,486	41,620	42,833	43,981	
Supply Projection	33,800	35,465	36,357	37,376	38,299	39,022	39,682	40,333	40,853	41,337	41,737	
Demand/Supply*	0.965	0.961	0.963	0.967	0.972	0.979	0.991	1.004	1.019	1.036	1.054	0.992
B52 - Office equipment operators												
Demand Projection	8,735	8,937	9,052	9,205	9,352	9,456	9,585	9,727	9,860	10,013	10,152	
Supply Projection	9,091	9,427	9,576	9,660	9,683	9,622	9,567	9,548	9,512	9,492	9,465	
Demand/Supply	0.961	0.948	0.945	0.953	0.966	0.983	1.002	1.019	1.037	1.055	1.073	0.995
B53 - Finance and insurance clerks												
Demand Projection	43,050	44,011	44,617	45,369	46,132	46,720	47,387	48,099	48,795	49,528	50,245	
Supply Projection	44,041	45,145	45,682	46,283	46,852	47,163	47,456	47,755	47,985	48,229	48,506	
Demand/Supply	0.978	0.975	0.977	0.980	0.985	0.991	0.999	1.007	1.017	1.027	1.036	0.997
B54 - Administrative support clerks												
Demand Projection	36,730	37,181	37,450	37,809	38,153	38,442	38,777	39,136	39,484	39,855	40,208	
Supply Projection	37,133	37,546	37,934	38,305	38,657	38,990	39,326	39,648	39,955	40,252	40,534	
Demand/Supply	0.989	0.990	0.987	0.987	0.987	0.986	0.986	0.987	0.988	0.990	0.992	0.988
B55 - Library, correspondence and related information clerks												
Demand Projection	15,769	16,221	16,483	16,811	17,126	17,330	17,611	17,922	18,199	18,537	18,835	
Supply Projection	16,356	16,641	16,541	16,724	16,819	16,782	16,977	17,234	17,369	17,588	17,751	
Demand/Supply	0.964	0.975	0.997	1.005	1.018	1.033	1.037	1.040	1.048	1.054	1.061	1.021
B56 - Mail and message distribution occupations												
Demand Projection	9,854	10,392	10,742	11,122	11,586	11,887	12,213	12,605	12,911	13,266	13,659	
Supply Projection	9,811	10,360	10,705	11,108	11,584	11,834	12,114	12,458	12,705	12,996	13,343	
Demand/Supply	1.004	1.003	1.004	1.001	1.000	1.004	1.008	1.012	1.016	1.021	1.024	1.009
B57 - Recording, scheduling and distributing occupations												
Demand Projection	26,652	27,282	27,740	28,238	28,812	29,215	29,637	30,087	30,513	30,974	31,421	
Supply Projection	27,583	28,318	28,738	29,110	29,471	29,565	29,647	29,777	29,871	29,949	30,019	
Demand/Supply	0.966	0.963	0.965	0.970	0.978	0.988	1.000	1.010	1.021	1.034	1.047	0.995
C01 - Physical science professionals **												
Demand Projection	5,278	5,496	5,558	5,755	5,918	5,974	6,029	6,090	6,194	6,330	6,392	
Supply Projection	5,325	5,606	5,714	5,924	6,111	6,152	6,137	6,129	6,164	6,227	6,073	
Demand/Supply	0.991	0.980	0.973	0.971	0.968	0.971	0.982	0.994	1.005	1.017	1.052	0.991
C02 - Life science professionals **												
Demand Projection	2,477	2,555	2,593	2,647	2,695	2,727	2,772	2,826	2,870	2,924	2,975	
Supply Projection	2,512	2,494	2,418	2,366	2,318	2,259	2,231	2,199	2,171	2,133	2,155	
Demand/Supply*	0.986	1.025	1.072	1.119	1.163	1.207	1.243	1.285	1.322	1.371	1.380	1.198

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
C03 - Civil, mechanical, electrical and chemical engineers												
Demand Projection	19,340	19,899	20,220	20,658	21,039	21,325	21,623	21,935	22,219	22,596	22,921	
Supply Projection	19,233	19,537	19,707	19,983	20,258	20,442	20,675	20,855	21,086	21,356	21,546	
Demand/Supply	1.006	1.019	1.026	1.034	1.039	1.043	1.046	1.052	1.054	1.058	1.064	1.040
C04 - Other engineers												
Demand Projection	18,600	18,900	19,000	19,400	19,700	19,800	19,900	20,000	20,200	20,400	20,500	
Supply Projection	18,616	18,835	19,049	19,286	19,499	19,674	19,818	19,925	20,024	20,091	20,101	
Demand/Supply	0.999	1.003	0.997	1.006	1.010	1.006	1.004	1.004	1.009	1.015	1.020	1.007
C05 - Architects, urban planners and land surveyors												
Demand Projection	5,943	6,090	6,174	6,281	6,371	6,448	6,529	6,619	6,692	6,783	6,877	
Supply Projection	5,970	6,135	6,216	6,302	6,350	6,378	6,415	6,478	6,513	6,556	6,603	
Demand/Supply	0.995	0.993	0.993	0.997	1.003	1.011	1.018	1.022	1.027	1.035	1.042	1.012
C07 - Computer and information systems professionals												
Demand Projection	30,694	31,486	31,873	32,443	32,918	33,204	33,583	34,030	34,413	34,929	35,374	
Supply Projection	31,516	32,406	32,719	33,064	33,204	33,168	33,287	33,487	33,563	33,740	33,860	
Demand/Supply	0.974	0.972	0.974	0.981	0.991	1.001	1.009	1.016	1.025	1.035	1.045	1.002
C11 - Technical occupations in physical sciences												
Demand Projection	7,419	7,639	7,724	7,912	8,071	8,142	8,219	8,302	8,408	8,550	8,636	
Supply Projection	7,647	7,824	7,843	7,937	8,015	7,981	7,916	7,877	7,859	7,879	7,723	
Demand/Supply	0.970	0.976	0.985	0.997	1.007	1.020	1.038	1.054	1.070	1.085	1.118	1.029
C12 - Technical occupations in life sciences												
Demand Projection	4,997	5,094	5,141	5,209	5,274	5,321	5,381	5,450	5,509	5,577	5,644	
Supply Projection	5,195	5,240	5,238	5,252	5,262	5,256	5,267	5,286	5,309	5,341	5,366	
Demand/Supply	0.962	0.972	0.982	0.992	1.002	1.012	1.022	1.031	1.038	1.044	1.052	1.010
C13 - Technical occupations in civil, mechanical and industrial engineering												
Demand Projection	7,995	8,195	8,401	8,613	8,833	9,058	9,289	9,528	9,773	10,023	10,280	
Supply Projection	8,090	8,179	8,312	8,451	8,602	8,771	8,942	9,115	9,284	9,459	9,645	
Demand/Supply*	0.988	1.002	1.011	1.019	1.027	1.033	1.039	1.045	1.053	1.060	1.066	1.031
C14 - Technical occupations in electronics and electrical engineering												
Demand Projection	16,337	16,623	16,803	17,043	17,287	17,467	17,656	17,843	18,038	18,263	18,448	
Supply Projection	16,639	17,216	17,381	17,399	17,379	17,322	17,292	17,340	17,413	17,542	17,705	
Demand/Supply	0.982	0.966	0.967	0.980	0.995	1.008	1.021	1.029	1.036	1.041	1.042	1.006
C15 - Technical occupations in architecture, drafting and surveying												
Demand Projection	12,645	12,908	13,065	13,262	13,426	13,568	13,712	13,869	13,998	14,165	14,330	
Supply Projection	12,760	12,976	13,217	13,411	13,657	13,821	13,905	13,957	13,914	13,739	13,375	
Demand/Supply	0.991	0.995	0.989	0.989	0.983	0.982	0.986	0.994	1.006	1.031	1.071	1.001
C16 - Other technical inspectors and regulatory officers												
Demand Projection	12,036	12,265	12,415	12,627	12,843	13,038	13,204	13,357	13,528	13,702	13,863	
Supply Projection	12,339	12,414	12,446	12,566	12,687	12,817	12,967	13,147	13,374	13,617	13,950	
Demand/Supply	0.975	0.988	0.998	1.005	1.012	1.017	1.018	1.016	1.012	1.006	0.994	1.004

*Supply Shortage if Greater Than 1
 Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
C17 - Transportation officers and controllers **												
Demand Projection	3,293	3,519	3,665	3,827	4,026	4,155	4,292	4,458	4,586	4,735	4,902	
Supply Projection	3,443	3,641	3,749	3,853	3,987	4,084	4,169	4,299	4,392	4,514	4,628	
Demand/Supply	0.956	0.967	0.978	0.993	1.010	1.017	1.029	1.037	1.044	1.049	1.059	1.013
C18 - Technical occupations in computer and information systems												
Demand Projection	11,690	11,962	12,105	12,302	12,480	12,594	12,740	12,909	13,058	13,243	13,408	
Supply Projection	11,766	11,427	11,193	11,125	11,157	11,211	11,339	11,569	11,813	12,095	12,165	
Demand/Supply	0.994	1.047	1.081	1.106	1.119	1.123	1.124	1.116	1.105	1.095	1.102	1.092
D01 - Physicians, dentists and veterinarians												
Demand Projection	7,280	7,600	7,843	8,084	8,247	8,470	8,767	9,103	9,411	9,732	10,047	
Supply Projection	7,221	7,383	7,492	7,573	7,572	7,593	7,644	7,713	7,727	7,730	7,708	
Demand/Supply	1.008	1.030	1.047	1.067	1.089	1.116	1.147	1.180	1.218	1.259	1.304	1.133
D03 - Pharmacists, dietitians and nutritionists **												
Demand Projection	4,594	4,651	4,703	4,743	4,779	4,815	4,866	4,922	4,974	5,028	5,080	
Supply Projection	4,523	4,529	4,563	4,598	4,636	4,651	4,671	4,705	4,712	4,692	4,659	
Demand/Supply*	1.016	1.027	1.031	1.031	1.031	1.035	1.042	1.046	1.056	1.072	1.090	1.043
D04 - Therapy and assessment professionals **												
Demand Projection	5,050	5,198	5,311	5,423	5,500	5,609	5,755	5,919	6,072	6,229	6,382	
Supply Projection	4,901	5,053	5,156	5,262	5,343	5,428	5,512	5,596	5,650	5,678	5,718	
Demand/Supply	1.030	1.029	1.030	1.031	1.029	1.033	1.044	1.058	1.075	1.097	1.116	1.052
D11 - Nurse supervisors and registered nurses												
Demand Projection	31,317	32,267	33,006	33,734	34,234	34,936	35,863	36,905	37,875	38,870	39,845	
Supply Projection	30,692	31,150	31,589	31,982	32,304	32,796	33,361	33,913	34,377	34,823	35,125	
Demand/Supply	1.020	1.036	1.045	1.055	1.060	1.065	1.075	1.088	1.102	1.116	1.134	1.072
D21 - Medical technologists and technicians (except dental health)												
Demand Projection	10,581	11,084	11,611	12,163	12,743	13,349	13,956	14,547	15,102	15,608	16,042	
Supply Projection	10,382	10,573	10,919	11,315	11,780	12,279	12,774	13,274	13,747	14,169	14,538	
Demand/Supply	1.019	1.048	1.063	1.075	1.082	1.087	1.092	1.096	1.099	1.102	1.103	1.079
D22 - Technical occupations in dental health care **												
Demand Projection	2,870	2,940	2,994	3,048	3,086	3,137	3,204	3,281	3,351	3,424	3,495	
Supply Projection	2,859	2,935	2,976	3,022	3,043	3,064	3,093	3,140	3,156	3,201	3,234	
Demand/Supply	1.004	1.002	1.006	1.009	1.014	1.024	1.036	1.045	1.062	1.070	1.081	1.032
D23 - Other technical occupations in health care (except dental)												
Demand Projection	17,378	17,726	17,982	18,247	18,444	18,690	19,017	19,386	19,728	20,079	20,419	
Supply Projection	17,265	17,401	17,532	17,656	17,726	17,822	17,939	18,070	18,190	18,297	18,397	
Demand/Supply	1.007	1.019	1.026	1.033	1.041	1.049	1.060	1.073	1.085	1.097	1.110	1.054
D31 - Assisting occupations in support of health services												
Demand Projection	28,382	29,041	29,564	30,066	30,415	30,899	31,541	32,263	32,934	33,621	34,295	
Supply Projection	28,764	29,289	29,673	29,936	30,019	30,132	30,263	30,453	30,542	30,588	30,631	
Demand/Supply	0.987	0.992	0.996	1.004	1.013	1.025	1.042	1.059	1.078	1.099	1.120	1.038

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
E01 - Judges, lawyers and Quebec notaries												
Demand Projection	7,517	7,766	7,884	8,052	8,178	8,259	8,367	8,503	8,603	8,749	8,889	
Supply Projection	7,418	7,713	7,889	8,107	8,281	8,455	8,665	8,876	9,032	9,228	9,387	
Demand/Supply	1.013	1.007	0.999	0.993	0.988	0.977	0.966	0.958	0.953	0.948	0.947	0.977
E02 - Psychologists, social workers, counsellors, clergy and probation officers												
Demand Projection	17,005	17,339	17,553	17,802	18,013	18,237	18,537	18,875	19,187	19,505	19,817	
Supply Projection	17,088	17,419	17,693	17,984	18,220	18,459	18,787	19,131	19,438	19,714	19,964	
Demand/Supply*	0.995	0.995	0.992	0.990	0.989	0.988	0.987	0.987	0.987	0.989	0.993	0.990
E03 - Policy and program officers, researchers and consultants												
Demand Projection	13,227	13,688	13,919	14,257	14,566	14,787	15,085	15,422	15,726	16,084	16,409	
Supply Projection	13,399	13,774	13,941	14,282	14,643	14,905	15,246	15,599	15,944	16,345	16,646	
Demand/Supply	0.987	0.994	0.998	0.998	0.995	0.992	0.989	0.989	0.986	0.984	0.986	0.991
E11 - University professors and assistants												
Demand Projection	16,540	16,834	17,157	17,507	17,864	18,229	18,555	18,830	19,046	19,189	19,247	
Supply Projection	17,032	17,267	17,559	17,856	18,185	18,482	18,762	19,038	19,267	19,450	19,595	
Demand/Supply	0.971	0.975	0.977	0.980	0.982	0.986	0.989	0.989	0.989	0.987	0.982	0.983
E12 - College and other vocational instructors												
Demand Projection	12,538	12,801	13,071	13,346	13,626	13,915	14,210	14,511	14,818	15,127	15,439	
Supply Projection	12,719	13,014	13,327	13,657	13,987	14,332	14,661	14,994	15,339	15,664	15,979	
Demand/Supply	0.986	0.984	0.981	0.977	0.974	0.971	0.969	0.968	0.966	0.966	0.966	0.973
E13 - Secondary and elementary school teachers and educational counsellors												
Demand Projection	43,740	44,730	46,194	47,809	49,531	51,366	53,212	55,070	56,985	58,915	60,917	
Supply Projection	43,953	44,552	45,101	45,663	46,173	46,749	47,390	48,092	48,713	49,264	49,904	
Demand/Supply	0.995	1.004	1.024	1.047	1.073	1.099	1.123	1.145	1.170	1.196	1.221	1.100
E21 - Paralegals, social services and occupations in education and religion, n.e.c.***												
Demand Projection	38,087	39,053	39,697	40,406	40,936	41,546	42,370	43,312	44,162	45,063	45,948	
Supply Projection	38,923	39,862	40,629	41,386	42,044	42,740	43,474	44,267	44,957	45,610	46,267	
Demand/Supply	0.979	0.980	0.977	0.976	0.974	0.972	0.975	0.978	0.982	0.988	0.993	0.979
F01 - Librarians, archivists, conservators and curators **												
Demand Projection	1,424	1,452	1,465	1,484	1,506	1,519	1,540	1,565	1,588	1,610	1,632	
Supply Projection	1,410	1,376	1,358	1,364	1,373	1,378	1,390	1,413	1,443	1,462	1,479	
Demand/Supply	1.009	1.055	1.078	1.089	1.097	1.102	1.108	1.108	1.100	1.101	1.103	1.086
F02 - Writing, translating and public relations professionals												
Demand Projection	8,851	9,017	9,096	9,214	9,327	9,403	9,509	9,631	9,738	9,861	9,974	
Supply Projection	8,920	9,145	9,221	9,288	9,319	9,303	9,301	9,317	9,293	9,281	9,266	
Demand/Supply	0.992	0.986	0.987	0.992	1.001	1.011	1.022	1.034	1.048	1.063	1.076	1.019
F03 - Creative and performing artists												
Demand Projection	10,736	10,833	10,857	10,913	10,985	11,030	11,118	11,223	11,314	11,406	11,493	
Supply Projection	11,070	11,448	11,569	11,639	11,643	11,593	11,587	11,575	11,527	11,467	11,409	
Demand/Supply*	0.970	0.946	0.938	0.938	0.944	0.951	0.960	0.970	0.982	0.995	1.007	0.964

** The 2007 data are not sufficiently reliable

*** Not elsewhere classified

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

F11 - Technical occupations in libraries, archives, museums and art galleries **

Demand Projection	3,444	3,479	3,490	3,511	3,537	3,554	3,584	3,620	3,651	3,682	3,712	
Supply Projection	3,505	3,432	3,376	3,355	3,359	3,349	3,348	3,352	3,367	3,381	3,425	
Demand/Supply	0.983	1.014	1.034	1.047	1.053	1.061	1.070	1.080	1.084	1.089	1.084	1.054

F12 - Photographers, graphic arts technicians and technical and co-ordinating occupations in motion pictures, broadcasting and the performing arts **

Demand Projection	3,382	3,453	3,488	3,534	3,573	3,600	3,639	3,687	3,723	3,768	3,811	
Supply Projection	3,593	3,783	3,829	3,851	3,840	3,806	3,772	3,755	3,733	3,695	3,684	
Demand/Supply	0.941	0.913	0.911	0.918	0.930	0.946	0.965	0.982	0.997	1.020	1.034	0.960

F13 - Announcers and other performers **

Demand Projection	1,812	1,829	1,839	1,852	1,865	1,875	1,890	1,906	1,921	1,936	1,949	
Supply Projection	1,909	1,974	2,047	2,126	2,186	2,228	2,270	2,303	2,321	2,330	2,334	
Demand/Supply	0.949	0.927	0.898	0.871	0.853	0.842	0.833	0.828	0.828	0.831	0.835	0.863

F14 - Creative designers and craftspersons

Demand Projection	8,838	8,992	9,093	9,204	9,299	9,384	9,476	9,578	9,659	9,755	9,860	
Supply Projection	8,850	8,960	9,020	9,115	9,173	9,191	9,237	9,306	9,317	9,299	9,355	
Demand/Supply	0.999	1.004	1.008	1.010	1.014	1.021	1.026	1.029	1.037	1.049	1.054	1.023

F15 - Athletes, coaches, referees and related occupations

Demand Projection	13,365	13,514	13,583	13,686	13,800	13,884	14,012	14,157	14,288	14,419	14,544	
Supply Projection	14,046	14,231	14,229	14,198	14,191	14,128	14,076	14,063	14,029	14,015	14,105	
Demand/Supply	0.952	0.950	0.955	0.964	0.972	0.983	0.995	1.007	1.018	1.029	1.031	0.987

G01 - Sales and service supervisors

Demand Projection	32,829	33,206	33,508	33,806	34,124	34,346	34,666	35,006	35,345	35,685	35,993	
Supply Projection	33,616	34,021	34,329	34,606	34,844	34,918	35,104	35,301	35,448	35,597	35,795	
Demand/Supply	0.977	0.976	0.976	0.977	0.979	0.984	0.988	0.992	0.997	1.002	1.006	0.987

G11 - Sales representatives, wholesale trade

Demand Projection	25,142	25,309	25,449	25,555	25,677	25,742	25,837	25,948	26,042	26,152	26,257	
Supply Projection	25,473	25,749	25,888	26,014	26,163	26,278	26,362	26,480	26,614	26,735	26,178	
Demand/Supply	0.987	0.983	0.983	0.982	0.981	0.980	0.980	0.980	0.979	0.978	1.003	0.983

G12 - Technical sales specialists, wholesale trade

Demand Projection	15,238	15,324	15,391	15,457	15,525	15,561	15,610	15,658	15,709	15,773	15,821	
Supply Projection	15,332	15,449	15,548	15,650	15,719	15,774	15,816	15,844	15,858	15,860	15,851	
Demand/Supply*	0.994	0.992	0.990	0.988	0.988	0.987	0.987	0.988	0.991	0.995	0.998	0.991

G13 - Insurance and real estate sales occupations and buyers

Demand Projection	17,866	18,212	18,456	18,710	18,981	19,208	19,480	19,777	20,056	20,326	20,627	
Supply Projection	17,930	18,348	18,707	19,043	19,363	19,671	19,968	20,256	20,526	20,788	21,043	
Demand/Supply	0.996	0.993	0.987	0.983	0.980	0.976	0.976	0.976	0.977	0.978	0.980	0.982

G21 - Retail salespersons and sales clerks

Demand Projection	63,623	64,324	65,055	65,513	66,133	66,533	67,057	67,606	68,135	68,658	69,178	
Supply Projection	65,508	66,440	67,127	67,329	67,474	67,140	66,900	66,653	66,285	65,837	65,461	
Demand/Supply	0.971	0.968	0.969	0.973	0.980	0.991	1.002	1.014	1.028	1.043	1.057	1.000

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
G31 - Cashiers												
Demand Projection	29,800	30,200	30,600	30,900	31,200	31,400	31,800	32,100	32,500	32,800	33,100	
Supply Projection	31,993	32,252	32,433	32,592	32,775	32,670	32,818	32,879	33,092	33,211	32,455	
Demand/Supply	0.931	0.936	0.943	0.948	0.952	0.961	0.969	0.976	0.982	0.988	1.020	0.964
G41 - Chefs and cooks												
Demand Projection	27,800	28,900	29,700	30,600	31,500	32,200	33,100	34,200	35,200	36,300	37,200	
Supply Projection	29,298	30,015	30,498	31,102	31,775	32,338	33,086	34,069	34,996	35,999	36,914	
Demand/Supply	0.949	0.963	0.974	0.984	0.991	0.996	1.000	1.004	1.006	1.008	1.008	0.989
G51 - Occupations in food and beverage service												
Demand Projection	33,017	34,240	35,205	36,290	37,402	38,231	39,418	40,646	41,928	43,162	44,259	
Supply Projection	34,542	35,998	36,983	38,024	38,928	39,414	40,227	41,013	41,587	42,529	43,638	
Demand/Supply	0.956	0.951	0.952	0.954	0.961	0.970	0.980	0.991	1.008	1.015	1.014	0.977
G61 - Police officers and firefighters												
Demand Projection	10,557	10,947	11,127	11,435	11,755	11,991	12,283	12,597	12,898	13,215	13,529	
Supply Projection	10,557	10,904	11,133	11,426	11,717	11,965	12,221	12,484	12,732	12,970	13,199	
Demand/Supply	1.000	1.004	0.999	1.001	1.003	1.002	1.005	1.009	1.013	1.019	1.025	1.007
G62 - Other occupations in protective service **												
Demand Projection	3,161	3,331	3,509	3,696	3,895	4,103	4,324	4,556	4,801	5,056	5,325	
Supply Projection	3,179	3,272	3,510	3,790	4,107	4,361	4,686	4,816	4,895	5,023	5,371	
Demand/Supply	0.994	1.018	1.000	0.975	0.948	0.941	0.923	0.946	0.981	1.007	0.991	0.975
G63 - Security guards and related occupations												
Demand Projection	8,706	8,938	9,061	9,217	9,335	9,417	9,527	9,664	9,764	9,903	10,042	
Supply Projection	8,861	9,398	9,634	9,822	9,942	9,969	9,986	10,054	10,074	10,126	10,247	
Demand/Supply*	0.982	0.951	0.941	0.938	0.939	0.945	0.954	0.961	0.969	0.978	0.980	0.958
G71 - Occupations in travel and accommodation												
Demand Projection	10,660	11,128	11,439	11,788	12,164	12,420	12,732	13,090	13,397	13,740	14,088	
Supply Projection	10,578	11,050	11,372	11,793	12,208	12,421	12,703	13,045	13,320	13,602	13,931	
Demand/Supply	1.008	1.007	1.006	1.000	0.996	1.000	1.002	1.003	1.006	1.010	1.011	1.005
G72 - Tour and recreational guides and casino occupations **												
Demand Projection	2,152	2,205	2,232	2,268	2,306	2,332	2,370	2,415	2,453	2,494	2,531	
Supply Projection	2,445	2,495	2,477	2,506	2,522	2,519	2,537	2,553	2,570	2,568	2,566	
Demand/Supply	0.880	0.884	0.901	0.905	0.914	0.926	0.934	0.946	0.954	0.971	0.986	0.927
G73 - Other occupations in travel, accommodation, amusement and recreation												
Demand Projection	4,281	4,354	4,398	4,454	4,515	4,557	4,614	4,678	4,737	4,797	4,854	
Supply Projection	4,779	4,806	4,812	4,832	4,863	4,866	4,878	4,905	4,923	4,950	4,994	
Demand/Supply	0.896	0.906	0.914	0.922	0.928	0.936	0.946	0.954	0.962	0.969	0.972	0.937
G81 - Childcare and home support workers												
Demand Projection	25,830	26,359	26,600	26,941	27,271	27,581	28,088	28,687	29,221	29,768	30,296	
Supply Projection	26,526	27,016	27,274	27,672	28,070	28,478	29,093	29,699	30,162	30,624	31,089	
Demand/Supply	0.974	0.976	0.975	0.974	0.972	0.969	0.965	0.966	0.969	0.972	0.974	0.971

** The 2007 data are not sufficiently reliable

***Supply Shortage** if Greater Than 1
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
G91 - Technical occupations in personal service												
Demand Projection	9,033	9,135	9,184	9,251	9,329	9,383	9,467	9,564	9,648	9,729	9,804	
Supply Projection	9,298	9,610	9,706	9,713	9,703	9,645	9,562	9,515	9,436	9,349	9,274	
Demand/Supply	0.971	0.951	0.946	0.952	0.961	0.973	0.990	1.005	1.023	1.041	1.057	0.988
G92 - Other occupations in personal service												
Demand Projection	8,664	8,736	8,776	8,822	8,875	8,911	8,967	9,033	9,088	9,145	9,197	
Supply Projection	8,927	9,019	9,089	9,127	9,172	9,176	9,191	9,229	9,241	9,257	9,253	
Demand/Supply	0.971	0.969	0.966	0.967	0.968	0.971	0.976	0.979	0.983	0.988	0.994	0.975
G93 - Cleaners												
Demand Projection	48,500	49,800	50,600	51,600	52,500	53,300	54,300	55,300	56,300	57,300	58,300	
Supply Projection	51,330	52,904	53,759	54,751	55,417	55,636	56,014	56,390	57,087	57,904	58,713	
Demand/Supply	0.945	0.941	0.941	0.942	0.947	0.958	0.969	0.981	0.986	0.990	0.993	0.963
G94 - Butchers and bakers												
Demand Projection	8,871	8,940	9,008	9,060	9,121	9,158	9,216	9,278	9,339	9,400	9,456	
Supply Projection	9,400	9,490	9,558	9,606	9,652	9,693	9,735	9,773	9,804	9,834	9,868	
Demand/Supply*	0.944	0.942	0.942	0.943	0.945	0.945	0.947	0.949	0.953	0.956	0.958	0.948
G96 - Food counter attendants, kitchen helpers and related occupations												
Demand Projection	30,222	31,379	32,286	33,294	34,301	35,084	36,199	37,364	38,563	39,727	40,772	
Supply Projection	32,397	33,069	33,505	34,088	34,759	35,344	36,289	37,319	38,610	39,933	41,221	
Demand/Supply	0.933	0.949	0.964	0.977	0.987	0.993	0.998	1.001	0.999	0.995	0.989	0.980
G97 - Other sales and related occupations												
Demand Projection	28,357	28,538	28,734	28,838	28,983	29,058	29,177	29,308	29,426	29,552	29,674	
Supply Projection	29,486	29,348	29,265	29,183	29,161	29,151	29,185	29,231	29,278	29,297	29,334	
Demand/Supply	0.962	0.972	0.982	0.988	0.994	0.997	1.000	1.003	1.005	1.009	1.012	0.993
G98 - Other elemental service occupations												
Demand Projection	7,283	7,366	7,421	7,483	7,549	7,600	7,672	7,752	7,827	7,900	7,969	
Supply Projection	7,793	7,854	7,895	7,930	7,929	7,912	7,953	7,992	8,024	8,061	8,091	
Demand/Supply	0.935	0.938	0.940	0.944	0.952	0.961	0.965	0.970	0.975	0.980	0.985	0.959
H01 - Contractors and supervisors, trades and related workers												
Demand Projection	41,982	42,735	43,564	44,461	45,440	46,446	47,474	48,452	49,371	50,207	50,929	
Supply Projection	42,026	42,496	43,305	44,330	45,431	46,442	47,630	48,881	49,914	50,898	51,709	
Demand/Supply	0.999	1.006	1.006	1.003	1.000	1.000	0.997	0.991	0.989	0.986	0.985	0.997
H02 - Supervisors, railway and motor transportation occupations												
Demand Projection	5,481	5,562	5,614	5,672	5,743	5,789	5,838	5,896	5,942	5,996	6,054	
Supply Projection	5,559	5,613	5,661	5,702	5,741	5,777	5,811	5,844	5,876	5,908	5,938	
Demand/Supply	0.986	0.991	0.992	0.995	1.000	1.002	1.005	1.009	1.011	1.015	1.019	1.002
H11 - Plumbers, pipefitters and gas fitters												
Demand Projection	17,578	18,199	18,862	19,578	20,352	21,178	22,039	22,934	23,867	24,828	25,817	
Supply Projection	18,162	18,420	18,932	19,602	20,305	20,965	21,777	22,687	23,486	24,324	25,417	
Demand/Supply	0.968	0.988	0.996	0.999	1.002	1.010	1.012	1.011	1.016	1.021	1.016	1.004

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
H12 - Carpenters and cabinetmakers												
Demand Projection	21,451	22,156	22,883	23,634	24,410	25,212	25,987	26,706	27,336	27,854	28,226	
Supply Projection	21,778	22,158	22,608	23,159	23,770	24,361	24,986	25,598	26,127	26,537	26,782	
Demand/Supply	0.985	1.000	1.012	1.021	1.027	1.035	1.040	1.043	1.046	1.050	1.054	1.028
H13 - Masonry and plastering trades												
Demand Projection	10,323	10,665	11,020	11,386	11,764	12,155	12,558	12,970	13,391	13,817	14,246	
Supply Projection	10,788	11,058	11,333	11,607	11,890	12,223	12,552	12,899	13,248	13,632	14,033	
Demand/Supply*	0.957	0.965	0.972	0.981	0.989	0.994	1.000	1.006	1.011	1.014	1.015	0.991
H14 - Other construction trades												
Demand Projection	15,861	16,359	16,872	17,403	17,949	18,514	19,096	19,694	20,308	20,920	21,507	
Supply Projection	16,344	16,474	16,864	17,394	17,941	18,430	19,052	19,770	20,454	21,163	21,836	
Demand/Supply	0.971	0.993	1.000	1.001	1.000	1.005	1.002	0.996	0.993	0.989	0.985	0.994
H21 - Electrical trades and telecommunications occupations												
Demand Projection	24,825	25,628	26,482	27,407	28,407	29,475	30,583	31,732	32,926	34,151	35,407	
Supply Projection	25,633	25,802	26,270	26,971	27,836	28,798	29,957	31,334	32,738	34,039	35,375	
Demand/Supply	0.968	0.993	1.008	1.016	1.021	1.024	1.021	1.013	1.006	1.003	1.001	1.007
H22 - Stationary engineers and power station and system operators												
Demand Projection	3,519	3,645	3,697	3,807	3,898	3,920	3,972	4,019	4,081	4,192	4,235	
Supply Projection	3,562	3,656	3,650	3,708	3,754	3,740	3,758	3,780	3,841	3,941	3,977	
Demand/Supply	0.988	0.997	1.013	1.027	1.038	1.048	1.057	1.063	1.063	1.064	1.065	1.038
H31 - Machinists and related occupations												
Demand Projection	8,303	8,358	8,384	8,444	8,498	8,522	8,545	8,569	8,604	8,646	8,669	
Supply Projection	8,594	8,684	8,702	8,745	8,785	8,795	8,755	8,723	8,750	8,730	8,723	
Demand/Supply	0.966	0.962	0.963	0.966	0.967	0.969	0.976	0.982	0.983	0.990	0.994	0.975
H32 - Metal forming, shaping and erecting trades												
Demand Projection	30,603	30,808	31,213	31,566	32,084	32,850	33,348	33,708	34,160	34,426	34,814	
Supply Projection	31,552	31,175	31,168	31,243	31,583	32,232	32,853	33,215	33,751	34,492	35,132	
Demand/Supply	0.970	0.988	1.001	1.010	1.016	1.019	1.015	1.015	1.012	0.998	0.991	1.003
H41 - Machinery and transportation equipment mechanics												
Demand Projection	25,494	25,953	26,352	26,824	27,407	27,965	28,396	28,768	29,206	29,592	29,979	
Supply Projection	25,727	25,957	26,266	26,751	27,307	27,759	28,109	28,426	28,792	29,090	29,390	
Demand/Supply	0.991	1.000	1.003	1.003	1.004	1.007	1.010	1.012	1.014	1.017	1.020	1.007
H42 - Automotive service technicians												
Demand Projection	18,758	19,057	19,254	19,468	19,728	19,909	20,131	20,376	20,596	20,823	21,043	
Supply Projection	18,976	19,072	19,128	19,171	19,280	19,322	19,430	19,584	19,708	19,867	20,055	
Demand/Supply	0.989	0.999	1.007	1.015	1.023	1.030	1.036	1.040	1.045	1.048	1.049	1.026
H43 - Other mechanics **												
Demand Projection	1,610	1,711	1,711	1,711	1,811	1,811	1,912	1,912	1,912	1,912	2,013	
Supply Projection	1,632	1,718	1,709	1,696	1,787	1,780	1,869	1,863	1,854	1,849	1,943	
Demand/Supply*	0.987	0.996	1.001	1.009	1.013	1.018	1.023	1.026	1.031	1.034	1.036	1.016

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
H51 - Upholsterers, tailors, shoe repairers, jewellers and related occupations **												
Demand Projection	3,291	3,313	3,327	3,343	3,359	3,371	3,388	3,407	3,424	3,440	3,457	
Supply Projection	3,410	3,437	3,466	3,494	3,520	3,538	3,554	3,571	3,581	3,590	3,605	
Demand/Supply	0.965	0.964	0.960	0.957	0.954	0.953	0.953	0.954	0.956	0.958	0.959	0.958
H52 - Printing press operators, commercial divers and other trades and related occupations, n.e.c.*** (**)												
Demand Projection	3,395	3,421	3,437	3,456	3,470	3,479	3,492	3,509	3,521	3,537	3,553	
Supply Projection	3,455	3,519	3,546	3,575	3,587	3,572	3,560	3,552	3,539	3,514	3,486	
Demand/Supply	0.982	0.972	0.969	0.966	0.967	0.974	0.981	0.988	0.995	1.007	1.019	0.984
H53 - Other installers, repairers and servicers												
Demand Projection	10,180	10,294	10,542	10,713	10,982	11,396	11,681	11,884	12,123	12,283	12,505	
Supply Projection	10,535	10,513	10,683	10,830	11,095	11,482	11,765	11,971	12,217	12,396	12,657	
Demand/Supply	0.966	0.979	0.987	0.989	0.990	0.993	0.993	0.993	0.992	0.991	0.988	0.987
H61 - Heavy equipment operators												
Demand Projection	17,758	18,256	18,793	19,368	19,990	20,634	21,299	21,951	22,588	23,197	23,762	
Supply Projection	18,893	19,199	19,621	20,176	20,755	21,203	21,716	22,250	22,727	23,160	23,480	
Demand/Supply	0.940	0.951	0.958	0.960	0.963	0.973	0.981	0.987	0.994	1.002	1.012	0.975
H62 - Crane operators, drillers and blasters **												
Demand Projection	2,259	2,319	2,380	2,443	2,508	2,574	2,643	2,714	2,786	2,860	2,935	
Supply Projection	2,293	2,335	2,390	2,436	2,485	2,532	2,587	2,652	2,721	2,784	2,843	
Demand/Supply	0.985	0.993	0.996	1.003	1.009	1.017	1.022	1.023	1.024	1.027	1.032	1.012
H71 - Motor vehicle and transit drivers												
Demand Projection	63,881	67,181	69,402	71,873	74,906	76,996	79,093	81,504	83,512	85,746	88,183	
Supply Projection	66,110	68,905	70,684	72,675	75,153	76,822	78,704	80,911	82,968	85,226	87,706	
Demand/Supply	0.966	0.975	0.982	0.989	0.997	1.002	1.005	1.007	1.007	1.006	1.005	0.995
H72 - Train crew operating occupations **												
Demand Projection	1,884	1,985	2,052	2,124	2,213	2,270	2,331	2,405	2,462	2,528	2,602	
Supply Projection	1,973	2,047	2,079	2,124	2,185	2,216	2,256	2,317	2,324	2,300	2,348	
Demand/Supply	0.955	0.970	0.987	1.000	1.013	1.024	1.033	1.038	1.060	1.099	1.108	1.026
H73 - Other transport equipment operators and related workers **												
Demand Projection	2,481	2,574	2,636	2,704	2,787	2,843	2,901	2,970	3,024	3,086	3,156	
Supply Projection	2,613	2,793	2,907	3,007	3,115	3,164	3,185	3,217	3,256	3,281	3,287	
Demand/Supply*	0.949	0.922	0.907	0.899	0.895	0.898	0.911	0.923	0.929	0.940	0.960	0.921
H81 - Longshore workers and material handlers												
Demand Projection	22,965	23,382	23,744	24,078	24,507	24,871	25,202	25,546	25,855	26,158	26,509	
Supply Projection	24,266	24,352	24,509	24,703	25,025	25,295	25,559	25,875	26,136	26,440	26,777	
Demand/Supply	0.946	0.960	0.969	0.975	0.979	0.983	0.986	0.987	0.989	0.989	0.990	0.978
H82 - Trades helpers and labourers												
Demand Projection	20,053	20,650	21,295	21,986	22,731	23,505	24,305	25,093	25,867	26,610	27,307	
Supply Projection	22,436	22,487	22,720	23,024	23,479	23,989	24,483	24,959	25,559	26,342	27,220	
Demand/Supply	0.894	0.918	0.937	0.955	0.968	0.980	0.993	1.005	1.012	1.010	1.003	0.971

** The 2007 data are not sufficiently reliable

*** Not elsewhere classified

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
H83 - Public works and other labourers, n.e.c.*** (**)												
Demand Projection	2,612	2,731	2,853	2,982	3,115	3,256	3,402	3,556	3,715	3,882	4,056	
Supply Projection	2,708	2,856	2,986	3,103	3,223	3,351	3,496	3,644	3,794	3,948	4,127	
Demand/Supply	0.965	0.956	0.955	0.961	0.967	0.972	0.973	0.976	0.979	0.983	0.983	0.970
I01 - Contractors, operators and supervisors in agriculture, horticulture and aquaculture												
Demand Projection	44,660	45,331	46,014	46,709	47,415	48,131	48,857	49,594	50,342	51,102	51,872	
Supply Projection	44,995	47,582	49,544	50,686	51,198	51,654	52,092	52,410	52,696	53,033	53,338	
Demand/Supply	0.993	0.953	0.929	0.922	0.926	0.932	0.938	0.946	0.955	0.964	0.973	0.948
I02 - Agriculture and horticulture workers												
Demand Projection	8,501	8,604	8,708	8,814	8,925	9,037	9,150	9,265	9,381	9,499	9,618	
Supply Projection	8,780	9,419	9,802	10,030	10,220	10,353	10,396	10,376	10,320	10,235	10,139	
Demand/Supply	0.968	0.914	0.888	0.879	0.873	0.873	0.880	0.893	0.909	0.928	0.949	0.905
I12 - Supervisors, mining, oil and gas												
Demand Projection	17,015	17,441	17,877	18,325	18,784	19,257	19,741	20,240	20,748	21,264	21,788	
Supply Projection	17,504	17,908	18,314	18,719	19,139	19,572	20,023	20,491	20,974	21,477	21,997	
Demand/Supply	0.972	0.974	0.976	0.979	0.981	0.984	0.986	0.988	0.989	0.990	0.990	0.983
I13 - Underground miners, oil and gas drillers and related workers												
Demand Projection	21,213	21,471	21,502	21,797	22,063	22,129	22,153	22,157	22,302	22,467	22,474	
Supply Projection	22,233	22,258	21,946	21,931	21,823	21,477	21,060	20,625	20,351	19,997	19,902	
Demand/Supply*	0.954	0.965	0.980	0.994	1.011	1.030	1.052	1.074	1.096	1.124	1.129	1.037
I14 - Mine service workers and operators in oil and gas drilling												
Demand Projection	8,610	8,781	8,802	9,000	9,181	9,229	9,246	9,248	9,347	9,457	9,461	
Supply Projection	8,913	9,107	9,101	9,271	9,381	9,335	9,248	9,146	9,159	9,124	9,005	
Demand/Supply	0.966	0.964	0.967	0.971	0.979	0.989	1.000	1.011	1.021	1.036	1.051	0.996
I15 - Logging machinery operators **												
Demand Projection	657	666	673	682	689	698	707	716	726	735	743	
Supply Projection	753	807	842	863	887	907	923	941	955	967	981	
Demand/Supply	0.873	0.826	0.800	0.791	0.777	0.769	0.766	0.761	0.761	0.760	0.758	0.786
I21 - Primary production labourers												
Demand Projection	15,628	16,203	16,438	16,956	17,430	17,698	17,945	18,192	18,530	18,911	19,159	
Supply Projection	16,736	16,935	16,991	17,452	17,910	18,129	18,366	18,612	18,935	19,241	19,440	
Demand/Supply	0.934	0.957	0.967	0.972	0.973	0.976	0.977	0.977	0.979	0.983	0.986	0.971
J01 - Supervisors, processing occupations												
Demand Projection	5,915	6,030	6,078	6,184	6,272	6,296	6,342	6,382	6,439	6,539	6,576	
Supply Projection	5,909	6,007	6,083	6,141	6,204	6,281	6,337	6,389	6,445	6,498	6,549	
Demand/Supply	1.001	1.004	0.999	1.007	1.011	1.002	1.001	0.999	0.999	1.006	1.004	1.003
J02 - Supervisors, assembly and fabrication												
Demand Projection	5,508	5,511	5,515	5,521	5,526	5,532	5,536	5,540	5,544	5,547	5,551	
Supply Projection	5,579	5,571	5,544	5,521	5,502	5,483	5,439	5,399	5,385	5,349	5,328	
Demand/Supply*	0.987	0.989	0.995	1.000	1.004	1.009	1.018	1.026	1.030	1.037	1.042	1.012

** The 2007 data are not sufficiently reliable

*** Not elsewhere classified

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix D

Results of Alberta's Occupational Demand and Supply for 3 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
J11 - Central control and process operators in manufacturing and processing												
Demand Projection	9,960	10,199	10,250	10,502	10,730	10,787	10,831	10,863	10,991	11,156	11,189	
Supply Projection	9,901	9,853	9,836	9,986	10,152	10,249	10,380	10,510	10,707	10,927	11,088	
Demand/Supply	1.006	1.035	1.042	1.052	1.057	1.053	1.043	1.034	1.027	1.021	1.009	1.034
J12 - Machine operators and related workers in metal and mineral products processing **												
Demand Projection	1,618	1,627	1,632	1,643	1,652	1,657	1,662	1,666	1,672	1,679	1,683	
Supply Projection	1,611	1,679	1,697	1,703	1,699	1,679	1,663	1,649	1,634	1,624	1,619	
Demand/Supply	1.004	0.969	0.962	0.965	0.973	0.987	0.999	1.010	1.024	1.034	1.039	0.997
J13 - Machine operators and related workers in chemical, plastic and rubber processing **												
Demand Projection	4,188	4,287	4,331	4,411	4,472	4,482	4,525	4,566	4,609	4,698	4,735	
Supply Projection	4,145	4,187	4,216	4,247	4,274	4,294	4,322	4,346	4,370	4,400	4,428	
Demand/Supply	1.011	1.024	1.027	1.039	1.046	1.044	1.047	1.051	1.055	1.068	1.069	1.044
J14 - Machine operators and related workers in pulp and paper production and wood processing **												
Demand Projection	2,917	2,923	2,929	2,937	2,944	2,948	2,952	2,957	2,961	2,966	2,971	
Supply Projection	3,010	3,070	3,085	3,092	3,088	3,067	3,045	3,025	3,015	3,007	3,006	
Demand/Supply	0.969	0.952	0.950	0.950	0.953	0.961	0.969	0.978	0.982	0.986	0.988	0.967
J17 - Machine operators and related workers in food, beverage and tobacco processing **												
Demand Projection	9,180	9,197	9,210	9,233	9,247	9,251	9,260	9,272	9,280	9,294	9,305	
Supply Projection	9,346	9,375	9,383	9,366	9,345	9,313	9,278	9,234	9,183	9,129	9,071	
Demand/Supply	0.982	0.981	0.982	0.986	0.989	0.993	0.998	1.004	1.011	1.018	1.026	0.997
J18 - Printing machine operators and related occupations **												
Demand Projection	3,146	3,170	3,186	3,204	3,219	3,228	3,241	3,258	3,272	3,288	3,303	
Supply Projection	3,127	3,080	3,100	3,183	3,306	3,336	3,374	3,412	3,440	3,467	3,478	
Demand/Supply*	1.006	1.029	1.028	1.007	0.974	0.968	0.961	0.955	0.951	0.949	0.950	0.980
J19 - Machining, metalworking, woodworking and related machine operators **												
Demand Projection	3,753	3,771	3,787	3,811	3,830	3,844	3,857	3,871	3,885	3,901	3,914	
Supply Projection	3,824	3,866	3,882	3,897	3,901	3,887	3,869	3,858	3,859	3,873	3,785	
Demand/Supply	0.982	0.976	0.976	0.978	0.982	0.989	0.997	1.003	1.007	1.007	1.034	0.994
J21 - Mechanical, electrical and electronics assemblers												
Demand Projection	4,421	4,443	4,459	4,482	4,501	4,511	4,525	4,541	4,554	4,572	4,587	
Supply Projection	4,534	4,591	4,606	4,619	4,640	4,628	4,645	4,635	4,620	4,595	4,563	
Demand/Supply	0.975	0.968	0.968	0.970	0.970	0.975	0.974	0.980	0.986	0.995	1.005	0.979
J22 - Other assembly and related occupations												
Demand Projection	8,849	8,877	8,918	8,960	9,003	9,054	9,093	9,128	9,163	9,191	9,228	
Supply Projection	9,313	9,064	8,955	8,931	8,946	9,006	9,082	9,181	9,259	9,344	9,428	
Demand/Supply	0.950	0.979	0.996	1.003	1.006	1.005	1.001	0.994	0.990	0.984	0.979	0.990
J31 - Labourers in processing, manufacturing and utilities												
Demand Projection	10,537	10,650	10,729	10,838	10,928	10,971	11,035	11,103	11,165	11,257	11,323	
Supply Projection	11,201	11,423	11,513	11,570	11,576	11,488	11,420	11,354	11,269	11,211	11,159	
Demand/Supply	0.941	0.932	0.932	0.937	0.944	0.955	0.966	0.978	0.991	1.004	1.015	0.963

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix E

Results of Alberta's Occupational Demand and Supply for Selected 4 - Digit NOC Occupations, 2008- 2018

Occupational Projections	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
A016 - Senior managers - Goods production, utilities, transportation and construction **													
Demand Projection	1,517	1,556	1,596	1,637	1,680	1,724	1,769	1,815	1,863	1,912	1,962	2,014	
Supply Projection	1,512	1,578	1,713	1,875	1,968	2,035	2,057	2,054	2,044	2,037	2,022	2,012	
Demand/Supply	1.004	0.986	0.932	0.873	0.853	0.847	0.860	0.884	0.911	0.938	0.970	1.001	0.914
A121 - Engineering managers **													
Demand Projection	2,600	2,642	2,696	2,732	2,772	2,806	2,836	2,869	2,904	2,932	2,968	3,004	
Supply Projection	2,600	2,636	2,711	2,725	2,780	2,819	2,836	2,867	2,898	2,919	2,960	2,989	
Demand/Supply	1.000	1.002	0.994	1.003	0.997	0.995	1.000	1.001	1.002	1.005	1.003	1.005	1.001
A321 - Managers in health care **													
Demand Projection	2,700	2,778	2,836	2,882	2,926	2,957	3,000	3,056	3,120	3,179	3,239	3,298	
Supply Projection	2,700	2,762	2,823	2,881	2,936	2,988	3,036	3,082	3,124	3,162	3,198	3,230	
Demand/Supply	1.000	1.006	1.004	1.000	0.997	0.990	0.988	0.992	0.999	1.005	1.013	1.021	1.001
A371 - Construction managers													
Demand Projection	8,200	8,544	8,903	9,277	9,668	10,075	10,499	10,942	11,404	11,884	12,382	12,897	
Supply Projection	8,264	8,425	8,653	8,986	9,406	9,854	10,290	10,799	11,357	11,856	12,374	12,906	
Demand/Supply	0.992	1.014	1.029	1.032	1.028	1.022	1.020	1.013	1.004	1.002	1.001	0.999	1.015
A372 - Residential home builders and renovators													
Demand Projection	13,000	13,080	13,051	13,240	13,310	13,491	13,906	14,141	14,284	14,462	14,512	14,683	
Supply Projection	13,044	12,978	13,001	13,159	13,415	13,679	13,889	14,162	14,457	14,636	14,798	14,934	
Demand/Supply	0.997	1.008	1.004	1.006	0.992	0.986	1.001	0.999	0.988	0.988	0.981	0.983	0.994
B213 - Medical secretaries **													
Demand Projection	1,800	1,842	1,872	1,896	1,919	1,935	1,957	1,986	2,019	2,050	2,082	2,113	
Supply Projection	1,800	1,818	1,942	2,005	2,054	2,098	2,131	2,151	2,166	2,175	2,173	2,168	
Demand/Supply	1.000	1.013	0.964	0.945	0.934	0.922	0.918	0.923	0.932	0.942	0.958	0.975	0.948
C013 - Geologists, geochemists and geophysicists **													
Demand Projection	3,600	3,636	3,701	3,734	3,775	3,802	3,818	3,843	3,877	3,897	3,931	3,965	
Supply Projection	3,700	3,794	3,921	3,923	3,990	4,036	3,983	3,894	3,809	3,750	3,708	3,538	
Demand/Supply	0.973	0.958	0.944	0.952	0.946	0.942	0.959	0.987	1.018	1.039	1.060	1.121	0.993
C032 - Mechanical engineers **													
Demand Projection	6,700	6,787	6,902	6,972	7,054	7,117	7,167	7,225	7,292	7,341	7,411	7,480	
Supply Projection	6,700	6,788	6,865	6,895	6,960	7,024	7,057	7,105	7,135	7,181	7,240	7,271	
Demand/Supply	1.000	1.000	1.005	1.011	1.013	1.013	1.016	1.017	1.022	1.022	1.024	1.029	1.016
C034 - Chemical engineers **													
Demand Projection	1,700	1,733	1,781	1,809	1,843	1,870	1,889	1,913	1,940	1,961	1,992	2,019	
Supply Projection	1,700	1,735	1,767	1,788	1,818	1,848	1,870	1,896	1,918	1,945	1,975	1,998	
Demand/Supply	1.000	0.999	1.008	1.012	1.014	1.012	1.010	1.009	1.011	1.008	1.008	1.011	1.009
C045 - Petroleum engineers													
Demand Projection	10,700	10,740	10,808	10,848	10,895	10,930	10,954	10,985	11,023	11,049	11,088	11,126	
Supply Projection	10,900	10,949	10,998	11,043	11,099	11,139	11,155	11,153	11,129	11,099	11,051	10,972	
Demand/Supply	0.982	0.981	0.983	0.982	0.982	0.981	0.982	0.985	0.990	0.995	1.003	1.014	0.989

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix E

Results of Alberta's Occupational Demand and Supply for Selected 4 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
C054 - Land surveyors **													
Demand Projection	3,600	3,641	3,701	3,739	3,780	3,812	3,843	3,874	3,910	3,935	3,969	4,007	
Supply Projection	3,800	3,817	3,894	3,916	3,941	3,941	3,929	3,921	3,930	3,920	3,915	3,913	
Demand/Supply	0.947	0.954	0.951	0.955	0.959	0.967	0.978	0.988	0.995	1.004	1.014	1.024	0.981
C151 - Architectural technologists and technicians **													
Demand Projection	1,600	1,620	1,646	1,667	1,686	1,704	1,727	1,746	1,765	1,780	1,795	1,816	
Supply Projection	1,600	1,623	1,654	1,687	1,715	1,749	1,774	1,787	1,797	1,795	1,775	1,731	
Demand/Supply	1.000	0.998	0.995	0.988	0.983	0.974	0.974	0.977	0.982	0.992	1.011	1.049	0.993
C153 - Drafting technologists and technicians													
Demand Projection	7,100	7,198	7,335	7,421	7,520	7,599	7,672	7,747	7,830	7,893	7,977	8,063	
Supply Projection	7,200	7,300	7,433	7,580	7,700	7,850	7,954	8,012	8,051	8,036	7,944	7,743	
Demand/Supply	0.986	0.986	0.987	0.979	0.977	0.968	0.965	0.967	0.973	0.982	1.004	1.041	0.984
C154 - Land survey technologists and technicians **													
Demand Projection	1,700	1,719	1,746	1,763	1,781	1,795	1,807	1,820	1,836	1,847	1,862	1,879	
Supply Projection	1,900	1,894	1,895	1,899	1,895	1,897	1,887	1,866	1,840	1,801	1,746	1,668	
Demand/Supply*	0.895	0.908	0.921	0.928	0.940	0.946	0.957	0.975	0.998	1.026	1.067	1.127	0.981
C155 - Mapping and related technologists and technicians **													
Demand Projection	1,700	1,718	1,748	1,763	1,783	1,800	1,811	1,827	1,846	1,860	1,879	1,896	
Supply Projection	1,700	1,724	1,755	1,790	1,818	1,854	1,878	1,892	1,901	1,898	1,876	1,829	
Demand/Supply	1.000	0.997	0.996	0.985	0.981	0.971	0.964	0.966	0.971	0.980	1.001	1.037	0.986
C111 - Chemical technologists and technicians **													
Demand Projection	1,800	1,848	1,899	1,950	2,002	2,057	2,114	2,172	2,233	2,294	2,358	2,422	
Supply Projection	1,900	1,985	2,054	2,081	2,129	2,173	2,186	2,191	2,203	2,220	2,248	2,226	
Demand/Supply	0.947	0.931	0.925	0.937	0.941	0.947	0.967	0.991	1.014	1.033	1.049	1.088	0.984
C112 - Geological and mineral technologists and technicians													
Demand Projection	5,300	5,337	5,393	5,426	5,464	5,493	5,516	5,544	5,577	5,600	5,632	5,666	
Supply Projection	5,400	5,567	5,683	5,683	5,738	5,781	5,743	5,682	5,641	5,615	5,615	5,491	
Demand/Supply	0.981	0.959	0.949	0.955	0.952	0.950	0.961	0.976	0.989	0.997	1.003	1.032	0.975
C134 - Construction estimators **													
Demand Projection	2,200	2,241	2,284	2,326	2,370	2,414	2,458	2,501	2,543	2,583	2,620	2,655	
Supply Projection	2,200	2,242	2,256	2,281	2,308	2,338	2,372	2,406	2,440	2,473	2,507	2,543	
Demand/Supply	1.000	1.000	1.013	1.020	1.027	1.033	1.037	1.040	1.042	1.045	1.045	1.044	1.031
C164 - Construction inspectors **													
Demand Projection	2,900	2,941	2,983	3,040	3,084	3,140	3,229	3,293	3,347	3,399	3,436	3,493	
Supply Projection	3,000	3,072	3,079	3,074	3,092	3,109	3,128	3,152	3,182	3,224	3,269	3,335	
Demand/Supply	0.967	0.957	0.969	0.989	0.998	1.010	1.032	1.045	1.052	1.054	1.051	1.047	1.019
D011 - Specialist physicians **													
Demand Projection	2,200	2,266	2,334	2,405	2,477	2,551	2,628	2,707	2,789	2,872	2,959	3,048	
Supply Projection	2,200	2,258	2,297	2,320	2,333	2,321	2,316	2,320	2,329	2,321	2,310	2,291	
Demand/Supply	1.000	1.003	1.016	1.036	1.061	1.099	1.135	1.167	1.198	1.237	1.281	1.330	1.142

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix E

Results of Alberta's Occupational Demand and Supply for Selected 4 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
D012 - General practitioners and family physicians **													
Demand Projection	2,500	2,617	2,754	2,863	2,967	3,038	3,140	3,275	3,427	3,568	3,714	3,856	
Supply Projection	2,500	2,582	2,642	2,684	2,715	2,718	2,728	2,749	2,776	2,784	2,787	2,782	
Demand/Supply	1.000	1.014	1.043	1.067	1.093	1.118	1.151	1.192	1.235	1.282	1.332	1.386	1.174
D013 - Dentists **													
Demand Projection	1,800	1,853	1,911	1,957	2,001	2,031	2,074	2,131	2,196	2,255	2,315	2,375	
Supply Projection	1,800	1,849	1,883	1,903	1,915	1,907	1,904	1,909	1,918	1,913	1,906	1,892	
Demand/Supply*	1.000	1.002	1.015	1.028	1.045	1.065	1.089	1.116	1.145	1.178	1.215	1.255	1.105
D031 - Pharmacists **													
Demand Projection	3,600	3,669	3,747	3,800	3,855	3,917	3,963	4,017	4,080	4,130	4,188	4,249	
Supply Projection	3,600	3,611	3,610	3,630	3,652	3,675	3,680	3,689	3,709	3,708	3,685	3,653	
Demand/Supply	1.000	1.016	1.038	1.047	1.056	1.066	1.077	1.089	1.100	1.114	1.137	1.163	1.082
D042 - Physiotherapists **													
Demand Projection	2,500	2,562	2,626	2,676	2,725	2,758	2,805	2,868	2,939	3,005	3,073	3,139	
Supply Projection	2,500	2,500	2,577	2,628	2,681	2,721	2,764	2,806	2,848	2,874	2,888	2,907	
Demand/Supply	1.000	1.025	1.019	1.018	1.016	1.013	1.015	1.022	1.032	1.045	1.064	1.080	1.032
D111 - Head nurses and supervisors **													
Demand Projection	1,800	1,826	1,845	1,859	1,874	1,883	1,897	1,916	1,937	1,956	1,976	1,995	
Supply Projection	1,900	1,887	1,897	1,904	1,909	1,909	1,918	1,931	1,943	1,949	1,953	1,949	
Demand/Supply	0.947	0.968	0.973	0.976	0.982	0.986	0.989	0.992	0.997	1.004	1.012	1.024	0.991
D112 - Registered nurses													
Demand Projection	28,500	29,340	30,265	30,987	31,691	32,172	32,849	33,750	34,765	35,707	36,673	37,616	
Supply Projection	28,700	28,805	29,253	29,685	30,073	30,396	30,878	31,430	31,970	32,428	32,870	33,176	
Demand/Supply	0.993	1.019	1.035	1.044	1.054	1.058	1.064	1.074	1.087	1.101	1.116	1.134	1.071
D212 - Medical laboratory technicians **													
Demand Projection	2,900	2,968	3,045	3,105	3,163	3,203	3,259	3,333	3,418	3,496	3,576	3,655	
Supply Projection	2,884	2,920	2,957	3,037	3,130	3,241	3,360	3,476	3,592	3,696	3,785	3,859	
Demand/Supply	1.006	1.017	1.030	1.022	1.010	0.988	0.970	0.959	0.952	0.946	0.945	0.947	0.980
D213 - Veterinary and animal health technologists and technicians **													
Demand Projection	1,013	1,043	1,082	1,100	1,125	1,141	1,151	1,166	1,185	1,198	1,219	1,238	
Supply Projection	1,034	1,038	1,044	1,064	1,087	1,117	1,148	1,177	1,206	1,230	1,248	1,261	
Demand/Supply	0.980	1.005	1.037	1.034	1.034	1.022	1.003	0.990	0.983	0.974	0.977	0.982	1.004
D215 - Medical radiation technologists **													
Demand Projection	2,700	2,752	2,807	2,849	2,891	2,919	2,959	3,010	3,070	3,124	3,181	3,236	
Supply Projection	2,685	2,764	2,846	2,971	3,113	3,275	3,450	3,627	3,809	3,982	4,143	4,290	
Demand/Supply*	1.006	0.996	0.986	0.959	0.929	0.891	0.857	0.830	0.806	0.785	0.768	0.754	0.869
D222 - Dental hygienists and dental therapists **													
Demand Projection	2,000	2,045	2,093	2,130	2,166	2,191	2,226	2,272	2,325	2,373	2,423	2,472	
Supply Projection	2,100	2,130	2,173	2,188	2,207	2,207	2,207	2,213	2,231	2,227	2,242	2,249	
Demand/Supply	0.952	0.960	0.963	0.973	0.981	0.993	1.009	1.027	1.042	1.065	1.080	1.099	1.018

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix E

Results of Alberta's Occupational Demand and Supply for Selected 4 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
D233 - Licensed practical nurses **													
Demand Projection	7,400	7,577	7,758	7,944	8,135	8,333	8,536	8,744	8,958	9,177	9,401	9,629	
Supply Projection	7,500	7,489	7,465	7,437	7,405	7,349	7,303	7,265	7,231	7,192	7,146	7,097	
Demand/Supply	0.987	1.012	1.039	1.068	1.099	1.134	1.169	1.204	1.239	1.276	1.315	1.357	1.174
D234 - Ambulance attendants and other paramedical occupations **													
Demand Projection	4,900	4,987	5,063	5,120	5,177	5,219	5,273	5,346	5,428	5,502	5,579	5,654	
Supply Projection	5,000	5,027	5,045	5,061	5,076	5,074	5,079	5,090	5,105	5,117	5,124	5,130	
Demand/Supply	0.980	0.992	1.004	1.012	1.020	1.029	1.038	1.050	1.063	1.075	1.089	1.102	1.043
D235 - Other technical occupations in therapy and assessment **													
Demand Projection	2,500	2,599	2,701	2,808	2,919	3,034	3,152	3,273	3,396	3,519	3,643	3,766	
Supply Projection	2,500	2,594	2,685	2,777	2,868	2,951	3,039	3,132	3,229	3,324	3,418	3,511	
Demand/Supply*	1.000	1.002	1.006	1.011	1.018	1.028	1.037	1.045	1.052	1.059	1.066	1.073	1.036
D311 - Dental assistants **													
Demand Projection	3,000	3,146	3,255	3,341	3,422	3,479	3,558	3,664	3,784	3,895	4,009	4,120	
Supply Projection	3,011	3,103	3,192	3,267	3,330	3,373	3,419	3,468	3,523	3,568	3,607	3,647	
Demand/Supply	0.996	1.014	1.020	1.022	1.028	1.032	1.041	1.057	1.074	1.092	1.111	1.130	1.056
D312 - Nurse aides, orderlies and patient service associates													
Demand Projection	18,900	19,340	19,783	20,131	20,468	20,700	21,025	21,458	21,944	22,396	22,859	23,313	
Supply Projection	19,168	19,535	19,874	20,117	20,278	20,316	20,375	20,445	20,556	20,598	20,610	20,621	
Demand/Supply	0.986	0.990	0.995	1.001	1.009	1.019	1.032	1.050	1.068	1.087	1.109	1.131	1.045
D313 - Other assisting occupations in support of health services													
Demand Projection	5,800	5,972	6,124	6,235	6,347	6,445	6,546	6,674	6,820	6,949	7,086	7,224	
Supply Projection	6,021	6,127	6,223	6,289	6,329	6,331	6,339	6,350	6,374	6,377	6,370	6,363	
Demand/Supply	0.963	0.975	0.984	0.991	1.003	1.018	1.033	1.051	1.070	1.090	1.112	1.135	1.042
H012 - Contractors and supervisors, electrical trades and telecommunications occupations **													
Demand Projection	4,800	4,839	4,838	4,906	4,937	5,004	5,144	5,227	5,281	5,346	5,370	5,433	
Supply Projection	4,572	4,580	4,605	4,666	4,750	4,840	4,919	5,016	5,118	5,196	5,267	5,320	
Demand/Supply	1.050	1.057	1.051	1.051	1.039	1.034	1.046	1.042	1.032	1.029	1.019	1.021	1.038
H015 - Contractors and supervisors, carpentry trades													
Demand Projection	4,600	4,701	4,805	4,912	5,021	5,132	5,246	5,363	5,483	5,605	5,728	5,853	
Supply Projection	4,382	4,394	4,422	4,486	4,571	4,663	4,744	4,843	4,947	5,028	5,103	5,159	
Demand/Supply	1.050	1.070	1.087	1.095	1.098	1.101	1.106	1.107	1.108	1.115	1.123	1.134	1.104
H017 - Contractors and supervisors, heavy construction equipment crews													
Demand Projection	5,800	5,874	5,949	6,025	6,102	6,180	6,260	6,340	6,423	6,505	6,587	6,669	
Supply Projection	5,810	5,752	5,714	5,718	5,747	5,780	5,797	5,830	5,865	5,869	5,862	5,831	
Demand/Supply	0.998	1.021	1.041	1.054	1.062	1.069	1.080	1.087	1.095	1.108	1.124	1.144	1.080
H019 - Contractors and supervisors, other construction trades, installers, repairers and servicers													
Demand Projection	10,900	10,978	10,959	11,130	11,197	11,363	11,733	11,946	12,077	12,238	12,288	12,443	
Supply Projection	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	
Demand/Supply	0.991	0.998	0.996	1.012	1.018	1.033	1.067	1.086	1.098	1.113	1.117	1.131	1.061

** The 2007 data are not sufficiently reliable

***Supply Shortage** if Greater Than 1
Supply Surplus if Less Than 1

Appendix E

Results of Alberta's Occupational Demand and Supply for Selected 4 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
H111 - Plumbers													
Demand Projection	6,900	7,115	7,336	7,564	7,800	8,042	8,292	8,532	8,754	8,945	9,099	9,205	
Supply Projection	6,912	7,133	7,247	7,462	7,740	8,032	8,308	8,645	9,022	9,357	9,707	10,161	
Demand/Supply*	0.998	0.998	1.012	1.014	1.008	1.001	0.998	0.987	0.970	0.956	0.937	0.906	0.981
H112 - Steamfitters, pipefitters and sprinkler system installers													
Demand Projection	9,100	9,187	9,192	9,352	9,428	9,585	9,905	10,098	10,223	10,374	10,435	10,580	
Supply Projection	9,717	9,956	10,044	10,268	10,574	10,894	11,187	11,556	11,973	12,326	12,695	13,191	
Demand/Supply	0.937	0.923	0.915	0.911	0.892	0.880	0.885	0.874	0.854	0.842	0.822	0.802	0.873
H113 - Gas fitters **													
Demand Projection	1,000	1,034	1,068	1,104	1,143	1,183	1,223	1,261	1,297	1,329	1,355	1,376	
Supply Projection	1,002	1,072	1,128	1,202	1,288	1,379	1,470	1,576	1,692	1,804	1,922	2,065	
Demand/Supply	0.998	0.964	0.947	0.919	0.887	0.858	0.832	0.800	0.767	0.737	0.705	0.666	0.826
H121 - Carpenters													
Demand Projection	19,700	20,105	20,518	20,940	21,370	21,810	22,262	22,723	23,195	23,673	24,155	24,642	
Supply Projection	20,429	20,543	20,779	21,075	21,460	21,894	22,304	22,738	23,153	23,486	23,707	23,778	
Demand/Supply	0.964	0.979	0.987	0.994	0.996	0.996	0.998	0.999	1.002	1.008	1.019	1.036	1.001
H211 - Electricians (except industrial and power system)													
Demand Projection	11,400	11,655	11,932	12,233	12,557	12,907	13,269	13,641	14,002	14,349	14,675	14,972	
Supply Projection	11,800	12,064	12,011	12,093	12,277	12,527	12,811	13,173	13,616	14,058	14,441	14,825	
Demand/Supply	0.966	0.966	0.993	1.012	1.023	1.030	1.036	1.036	1.028	1.021	1.016	1.010	1.016
H821 - Construction trades helpers and labourers													
Demand Projection	16,400	16,782	17,174	17,575	17,985	18,405	18,837	19,280	19,734	20,197	20,665	21,139	
Supply Projection	18,200	18,800	18,739	18,828	18,973	19,239	19,546	19,835	20,104	20,469	20,974	21,547	
Demand/Supply	0.901	0.893	0.916	0.933	0.948	0.957	0.964	0.972	0.982	0.987	0.985	0.981	0.956
I122 - Supervisors, oil and gas drilling and service													
Demand Projection	15,300	15,318	15,348	15,374	15,397	15,421	15,449	15,473	15,497	15,516	15,536	15,560	
Supply Projection	15,800	15,750	15,679	15,592	15,484	15,368	15,242	15,109	14,965	14,811	14,646	14,468	
Demand/Supply	1	0.973	0.979	0.986	0.994	1.003	1.014	1.024	1.036	1.048	1.061	1.075	1.017
I132 - Oil and gas well drillers, servicers, testers and related workers													
Demand Projection	19,400	19,406	19,424	19,442	19,457	19,475	19,497	19,514	19,529	19,543	19,556	19,572	
Supply Projection	19,600	20,664	20,698	20,418	20,415	20,325	20,013	19,635	19,240	18,994	18,674	18,595	
Demand/Supply*	0.990	0.939	0.938	0.952	0.953	0.958	0.974	0.994	1.015	1.029	1.047	1.053	0.987
I142 - Oil and gas well drilling workers and services operators													
Demand Projection	8,200	8,205	8,217	8,231	8,242	8,257	8,274	8,287	8,298	8,309	8,319	8,330	
Supply Projection	8,700	8,648	8,671	8,498	8,487	8,416	8,204	7,959	7,703	7,546	7,351	7,091	
Demand/Supply	0.943	0.949	0.948	0.969	0.971	0.981	1.008	1.041	1.077	1.101	1.132	1.175	1.032
I215 - Oil and gas drilling, servicing and related labourers													
Demand Projection	5,800	5,826	5,848	5,893	5,921	5,965	6,037	6,087	6,125	6,165	6,190	6,231	
Supply Projection	6,300	6,344	6,252	6,105	6,099	6,082	5,978	5,875	5,771	5,684	5,586	5,453	
Demand/Supply	0.921	0.918	0.935	0.965	0.971	0.981	1.010	1.036	1.061	1.085	1.108	1.143	1.019

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**
Supply Surplus if Less Than 1

Appendix E

Results of Alberta's Occupational Demand and Supply for Selected 4 - Digit NOC Occupations, 2008-2018 (Cont.)

Occupational Projections	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2008-2018
J012 - Supervisors, petroleum, gas and chemical processing and utilities **													
Demand Projection	2,300	2,329	2,350	2,366	2,392	2,410	2,419	2,433	2,448	2,460	2,478	2,493	
Supply Projection	2,300	2,319	2,332	2,337	2,334	2,332	2,335	2,330	2,322	2,316	2,308	2,299	
Demand/Supply	1.000	1.004	1.008	1.013	1.025	1.034	1.036	1.045	1.054	1.062	1.074	1.085	1.040
J112 - Petroleum, gas and chemical process operators													
Demand Projection	9,300	9,336	9,379	9,410	9,447	9,481	9,500	9,525	9,551	9,575	9,610	9,634	
Supply Projection	9,266	9,216	9,003	8,819	8,782	8,754	8,661	8,594	8,521	8,496	8,483	8,416	
Demand/Supply	1.004	1.013	1.042	1.067	1.076	1.083	1.097	1.108	1.121	1.127	1.133	1.145	1.092

** The 2007 data are not sufficiently reliable

***Supply Shortage if Greater Than 1**

Supply Surplus if Less Than 1