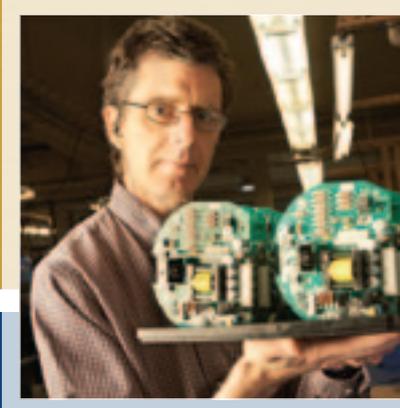
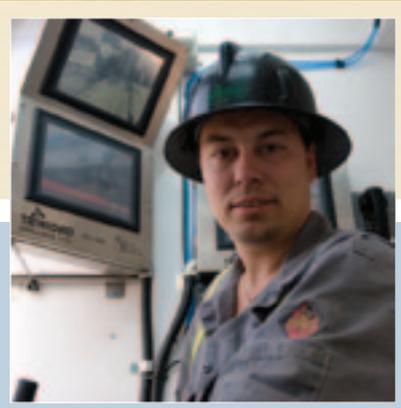




BRITISH COLUMBIA

Labour Market Outlook

2010 - 2020



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B.C. Labour Market Outlook, 2010 - 2020

Preface

The Ministry of Jobs, Tourism and Innovation is pleased to present the second edition of the B.C. Labour Market Outlook in partnership with BC Stats and the Ministry of Finance. This edition provides labour market demand and supply forecasts for B.C. and its regions from 2010 to 2020, based on output from the B.C. Labour Market Scenario Model.

The B.C. Labour Market Scenario Model is a tool that helps us understand the likely future of regional and provincial labour markets. Developed by the Province in 2009, the information the Model provides helps citizens, employers and government to accurately forecast future demand and supply for a range of occupations. The Outlook seeks to identify significant trends for the labour market of the future that can inform decision-making, based on statistical data, assumptions, and consultation with industry and other stakeholders. However, within particular occupations and regions there may be unique conditions that are not captured in this analysis. Assumptions and conditions may also change over time. Thus, despite best efforts, actual conditions may differ from those presented in the B.C. Labour Market Outlook.

While it is too early to fully assess the accuracy of last year's B.C. Labour Market Outlook, actual labour force data from 2010 suggests a high degree of accuracy for the first year of the model's labour market projection. At the provincial level, employment and labour force forecasts for 2010 were within one percentage point of the actual results. At 7.6 percent, the 2010 unemployment rate was slightly lower than the 7.9 percent forecast for B.C. Regionally, employment growth forecasts for 2010 were within three percentage points for six out of seven development regions.

Over the past year, the B.C. Labour Market Outlook, 2009-2019 has been used to help inform a variety of programs, policies, investments and initiatives both inside and outside government. The Outlook was also the key analytic tool used to develop *Skills for Growth: British Columbia's Labour Market Strategy to 2020*. Finally, a number of additional reports have been generated based on the first B.C. Labour Market Outlook, 2009-2019. These include:

- B.C. Trades Occupation Outlook, 2009-2019
- Science Related Occupations
- B.C. Labour Market Outlook, 2009-2019 Four-Digit Analysis

All of these documents are available online at www.WorkBC.ca.

It is important to note that the B.C. Labour Market Outlook, 2010-2020 incorporates economic projections provided by the B.C. Economic Review and Outlook from the B.C. Ministry of Finance Budget and Fiscal Plan. The 2011/12 to 2013/14 Budget and Fiscal Plan includes information available as of February 2011 only and reflects a prudent approach to

**Over one million job openings are expected
in B.C. from 2010 to 2020**

forecasting economic growth.¹ These sources suggest that the B.C. economy is expected to grow at close to historical rates in the medium term (2013 to 2015). However, uncertain global economic conditions continue to pose substantial downside risks to economic growth in the province. As a result, unemployment rates will likely remain slightly above those experienced before the recession.

Nevertheless, labour market conditions are expected to gradually improve. With the growth in the economy and labour market over the past year, more people have been looking for work and more people are employed. This led to a slight decrease in the unemployment rate. Over the longer term, more than one million job openings are expected throughout the province over the next ten years. By 2016 the number of workers needed in B.C. is expected to exceed the number of workers available province-wide. This trend toward tightening labour market conditions is even more apparent at the regional level. Starting in 2011 labour demand is expected to exceed supply in both the Cariboo and Northeast regions. This is a shift from the previous edition of the Outlook. In that edition, while tight labour conditions were forecast to occur at the regional level, labour shortages were not forecast for the province as a whole.

Throughout the forecast period, growth in the demand for workers is expected to outpace growth in the supply of workers. This will lead to an estimated shortage of 61,500 workers by 2020.

The B.C. Labour Market Scenario Model will continue to be updated annually. Improvements will be incorporated into each cycle. Details of changes for the 2010-2020 Outlook are provided in Appendix 3. In addition, the Ministry of Jobs, Tourism and Innovation will launch an interactive forecasting tool on WorkBC.ca in September 2011. This new and innovative tool will allow users to view and download labour demand, labour supply and other labour market indicator forecasts.

We are grateful for the questions and comments we have received so far. We look forward to continued participation and feedback as we strive to improve labour market forecasting in British Columbia. Please contact us at ALMD.LMI@gov.bc.ca.

Funding for the B.C. Labour Market Scenario Model has been provided by the Canada-British Columbia Labour Market Agreement and the Province of British Columbia.

¹ The key economic indicators in the B.C. Ministry of Finance Budget and Fiscal Plan 2011/2012 to 2013/14 cover the 2011 to 2015 period. For the purposes of the B.C. Labour Market Outlook 2010-2020, these indicators are extended to the 2016 to 2020 period.

Highlights

What is different in the Labour Market Outlook 2010-2020 ?

- Tight labour market conditions, with demand for workers exceeding supply, emerge at the provincial level by 2016. Tight labour market conditions were previously not expected at the provincial level
- Slower growth in demand for workers and in supply of available workers is expected in the latter half of the forecast period. This reflects uncertainty in external global economic activity and declining participation rates in step with the aging population
- A greater proportion of job openings is expected to be the result of replacing retiring workers

How many job openings are expected?

- 1,027,400 job openings are expected for B.C. over the ten-year period
- Close to two-thirds of job openings (676,400) will be due to replacement demand as a result of retiring workers and deaths
- The other one-third of job openings (351,000) will be due to the new jobs that result from economic growth
- Demand for workers in B.C. is expected to grow by an annual average rate of 1.4 percent over the ten-year period

Where is the greatest growth predicted to be across the province?

- Among the regions, the Northeast region is expected to have the highest growth of demand for workers at 1.7 percent annually. This is followed by Mainland/Southwest (1.6 percent) and North Coast and Nechako (1.3 percent)
- The largest number of job openings is expected for the Mainland/Southwest (666,300 job openings). This is followed by Vancouver Island/Coast (152,600) and Thompson-Okanagan (110,300). These three most populated regions account for 90 percent of the total projected job openings in the province

Which occupations are expected to have a strong outlook?

- The three occupation groups with the most expected job openings from expansion and replacement in B.C. are:
 - *Sales and Service Occupations (224,600)*
 - *Business, Finance and Administration Occupations (182,000)*
 - *Trades, Transport and Equipment Operators and Related Occupations (153,300)*
- The three occupation groups expected to experience the strongest growth in demand in the province are:
 - *Health Occupations (an annual average growth rate of 2.4 percent)*
 - *Natural and Applied Sciences and Related Occupations (1.6 percent)*
 - *Occupations in Art, Culture, Recreation and Sport (1.6 percent)*

- At the provincial level, the three occupation groups expected to have the lowest growth in demand are:
 - *Occupations Unique to Primary Industry (an annual average growth rate of 0.8 percent)*
 - *Trades, Transport and Equipment Operators and Related Occupations (1.1 percent)*
 - *Occupations Unique to Processing, Manufacturing and Utilities (1.2 percent)*

What level of training will be needed for the job openings?

- Approximately 78 percent of job openings over the ten-year period from 2010 to 2020 are expected to require some post-secondary education and training or a university degree
- The greatest number of job openings is expected in occupations requiring some post-secondary education, college or trade certificate

What is the impact of the aging workforce on employment?

- In B.C., approximately 66 percent of total job openings will be due to the demand to replace retiring workers. Replacement is important for all occupations. It accounts for over half of the total job openings for all occupation groups
- Replacement demand accounts for the greatest share of total openings for the following three occupation groups:
 - *Management Occupations (74 percent)*
 - *Occupations Unique to Primary Industry (73 percent)*
 - *Occupations Unique to Processing, Manufacturing and Utilities (70 percent)*

Will we have enough workers available to meet the anticipated demand?

- Looking at the balance between the demand for workers and supply of workers, tight labour market conditions are expected for B.C. in the latter half of the outlook period, starting in 2016. The tight conditions are expected to intensify towards 2020
- Labour market prospects in Mainland/Southwest, Thompson-Okanagan and Kootenay are expected to be similar to the provincial outlook
- Vancouver Island/Coast, Cariboo, North Coast and Nechako, and Northeast are expected to experience tight labour market conditions in the first half of the outlook period around 2012 to 2015, and in 2020
- Over the outlook period, the demand for workers is expected to outgrow the available supply by 61,500 workers. In other words, from 2010 and over the outlook period, the growth in supply of workers will not keep up with the growth in demand for workers

Where will the labour supply come from?

- In B.C., the number of new labour market entrants (who leave the education system and enter the labour market for the first time) is expected to decline steadily throughout the period of 2010 to 2020. This reflects the demographic shift to an older population
- The B.C. labour market is expected to rely increasingly on migrants² for new labour supply over the outlook period. New migrants to B.C. are expected to fill one-third of job openings to 2020

2. In this report, migrants refer to net arrivals to British Columbia from other provinces/territories, as well as from other countries. For a region, migrants refer to net arrivals from other regions in the province, from other provinces/territories and from other countries.

Introduction

The British Columbia Labour Market Scenario Model examines the possible future state of supply and demand in the labour market for 140 occupations. Two sets of models are used to generate indicators of possible future demand and supply by occupation. The first set of models contains seven regional macroeconomic models. The second set contains seven regional occupational demand and supply models. Occupations are defined based on the three-digit National Occupational Classification (NOC) from Human Resources and Skills Development Canada.³ The seven development regions are Vancouver Island/Coast, Mainland/Southwest, Thompson-Okanagan, Kootenay, Cariboo, North Coast and Nechako, and Northeast.⁴

The B.C. Labour Market Scenario Model is intended to complement existing work and add to the toolkit of available labour market information. Furthermore, a key objective of the model is to identify trends in the labour market. Understanding these trends helps citizens, businesses and governments make informed decisions. Actual conditions may differ from the forecasts. In an uncertain world, this work uses current information to describe the likely future state of the labour market, at a level of detail that is meaningful and relevant for users.

The underlying economic growth assumptions used in these labour market forecasts remain prudent. They reflect continuing uncertainty about the strength of economic recovery. Even under these prudent growth assumptions, labour market conditions throughout the province will return to more balanced conditions. In many cases, they will extend into excess demand conditions where the demand for workers surpasses the supply of workers. If economic growth is stronger than anticipated, the demand for workers will likely also be stronger than anticipated. This could lead to greater labour market pressures throughout B.C. as the labour market adjusts.

The remainder of this report is structured as follows: Economic and Labour Market Outlook in section 2; Occupation Outlook in section 3; Conclusions in section 4; and Appendices. The appendices include a summary data table. That table presents the demand and supply outlook and expected number of job openings for the province and the seven development regions. Requests for more detailed data by region and occupation are welcome at ALMD.LMI@gov.bc.ca.

3. NOC 2006 is the current framework used to classify occupations. At the three-digit level, all occupations are organized into 140 groups. For more information on the NOC, see <http://www5.hrsdc.gc.ca/NOC/English/NOC/2006/Welcome.aspx>.

4. The North Coast region and Nechako region are combined into one development region in this report to alleviate data reliability concerns associated with small numbers.

Economic and Labour Market Outlook

Provincial Outlook

Recovering from the economic downturn, B.C.'s economy and labour market are showing signs of improvement. Real GDP in B.C. increased by 4.0 percent from 2009 to 154 billion dollars (2002 chained dollars) in 2010. This is greater than the pre-recession GDP level. Real GDP in both the goods-producing sector and the service sector increased from 2009, by 7.0 percent and 3.1 percent respectively.

Labour market conditions have been improving along with the economy. Total employment in the province grew by 1.7 percent to 2.3 million in 2010, almost back to the pre-recession level. The goods-producing sector employed 0.9 percent more workers. However, in 2010 the employment level in the goods-producing sector was still below the pre-recession levels of 2005 to 2008. Employment in the service sector reached its highest level in recent years. It was 2.0 percent higher than in 2009. The number of unemployed workers increased slightly by 0.8 percent to 186,000 as more people joined the labour market to look for work. The combination of more people employed and more people looking for work led to a slight drop in the unemployment rate to 7.6 percent from 7.7 percent in 2009.

As the economy and labour market continue to recover, it is expected that GDP in B.C. will grow by 2.0 percent in 2011 and by 2.6 percent in 2012.⁵ The growth rate is expected to approach its historical level of about 2.8 percent annually in the medium term, from 2013 to 2015. Employment in the province is expected to increase by 1.4 percent in 2011 and by 1.8 percent in 2012. In the medium term, employment is forecast to grow by 1.7 percent annually. The unemployment rate in B.C. is expected to drop steadily throughout the ten-year outlook period. It is forecast to drop from 7.5 percent in 2011 to 6.5 percent in 2015, before declining to 5.2 percent in 2020.

The economy and labour market influence each other and move interactively. When the economy is performing well, it attracts more people into the labour market. People move into regions with strong growth. In addition, those who were previously not in the labour market may join to take advantage of the favourable conditions. Conversely, unfavourable economic conditions may discourage job seekers and result in them leaving the labour market and/or leaving a region. The growth of the economy relies on a well-functioning labour market.

Both migrants and new labour market entrants (those who leave the school system and enter the labour market for the first time) are important components of new labour supply. They add to the labour pool each year. Given the aging population challenge we are facing, the number of new entrants to the labour market is expected to decline gradually in the next ten years. The labour market will rely more on migrants as a source of new labour supply over the outlook period. Migrants to B.C. who arrive during the forecast

5. B.C. Ministry of Finance, Budget and Fiscal Plan – 2011/12 to 2013/14, February 2011.

Chart 1: Demand for Workers is Expected to Grow Faster than the Labour Force in B.C. Regions, 2010-2020

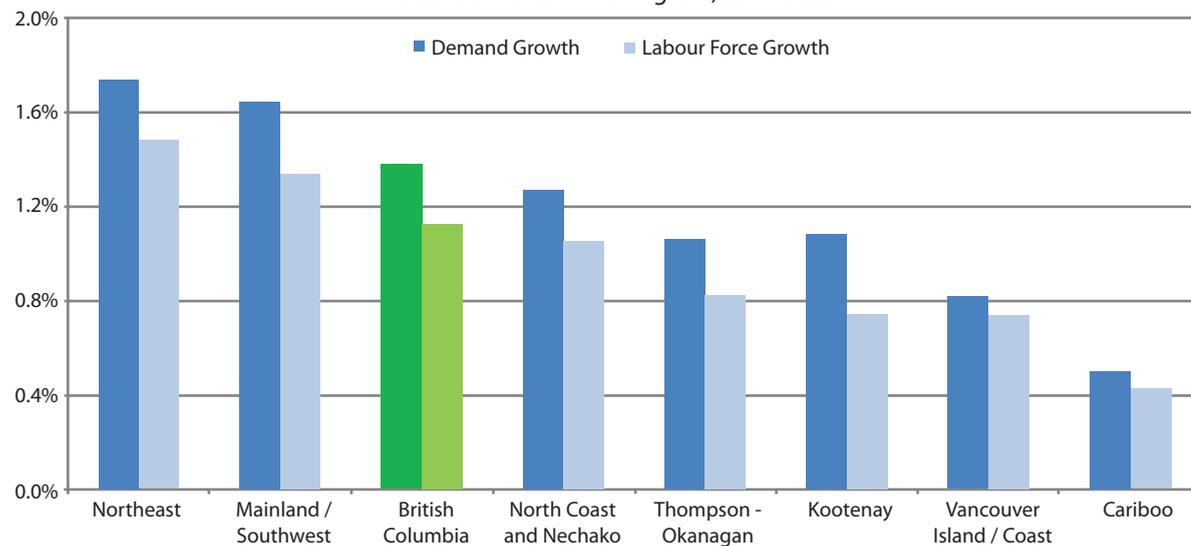
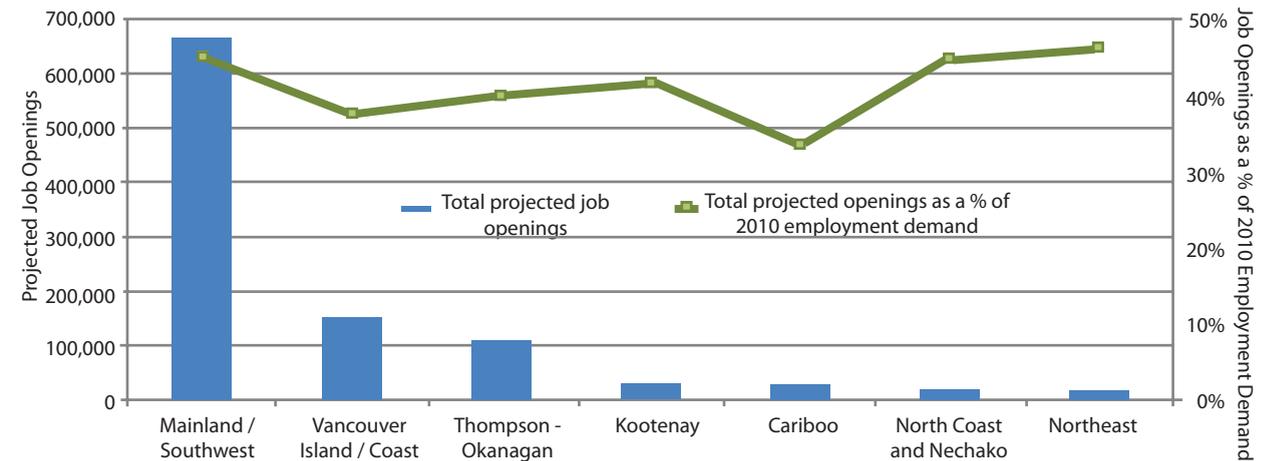


Chart 2: The Three Most Populated Regions Account for 90 Percent of B.C.'s Projected Job Openings, 2010-2020



period are expected to fill one-third (33%) of the total job openings in the province to 2020.

Regional Outlook

Economic and labour market prospects vary among the seven development regions in the province. They are affected by the regional differences in economic base, industry performance, demographics, major projects and other factors.

From 2010 to 2020, about 1,027,400 job openings are expected in the B.C. labour market. There are two components of future job openings. One is expansion demand, the new jobs that are generated by economic growth. The other is replacement demand to fill permanent workforce losses from retiring workers and deaths. Close to two-thirds of job openings (676,400) are expected to be replacement demand and the remaining one-third (351,000) is expected to be expansion demand.

As shown in Chart 1, demand growth is expected to vary across regions, from a high of 1.7 percent annually in the Northeast region to a low of 0.5 percent annually in Cariboo. At the provincial level, demand for workers is expected to increase at an annual average rate of 1.4 percent. Only two regions – Northeast and Mainland/Southwest – are expected to experience above-average demand growth over the outlook period. The demand growth in the Northeast region is mainly boosted by planned major projects that are expected to have significant labour market impacts on the region. In the Mainland/Southwest region, several projects planned or underway to improve the region's transportation system are each associated with over \$1 billion dollars in investment. These significant investments are expected to partly support the region's above-average growth in demand for workers.

A growing economy drives the demand for new workers. While workers tend to respond to demand, it takes time for people move to places where jobs are available and to develop

the necessary skills. In the short to medium term, this lag between the response of labour supply to demand often leads to imbalances in the labour market.

In all regions in B.C., the demand for workers is expected to increase at a higher rate than the labour force. This leads to tightening labour market conditions. For B.C. as a whole, demand for workers is expected to outgrow the labour force by 61,500 workers over the outlook period from 2010 to 2020. Labour market conditions are affected by both demand and supply. When demand for workers grows faster than the supply of workers, the labour market starts to absorb any excess supply of workers. Tight labour market conditions are expected after the excess labour supply is absorbed.

Over 2010 to 2020, B.C. is expected to experience tight labour market conditions, where the demand for workers surpasses the supply of workers, in the latter half of the outlook period, starting in 2016. Labour market pressures are expected to intensify towards 2020 as the demand for workers grows larger than the supply of workers. The provincial prospects largely reflect the outlook for regions like Mainland/Southwest, Thompson-Okanagan and Kootenay. Tight labour market conditions are expected in the first half of the outlook period around 2012 to 2015 for Cariboo, North Coast and Nechako, Northeast and Vancouver Island/Coast. They are expected to return at the very end of the period for these regions.

Chart 2 shows the projected job openings for the outlook period for each region. These job openings include both expansion demand driven by the growing economy and demand to fill the jobs left open by retiring workers. Consistent with the population distribution, the three largest regions are expected to account for 90 percent of the projected job openings in B.C. Mainland/Southwest is expected to represent 65 percent of the job openings, followed by Vancouver Island/Coast (15 percent) and Thompson-Okanagan (11 percent). The remaining smaller regions account for 10 percent of the projected job openings. From a different perspective, over the outlook period, the two smallest regions by population are expected to have the highest share of projected job openings relative

to their labour market size. For Northeast and North Coast and Nechako, the projected job openings are expected to represent 46 percent and 45 percent of their 2010 demand respectively. Projected job openings for the large Mainland/Southwest region are also expected to represent 45 percent of its 2010 demand. In the other regions, projected job openings as a share of 2010 demand is expected to range from a high of 42 percent in Kootenay to a low of 33 percent in Cariboo. For regions with a high share of job openings compared to their labour market size, there are relatively more job opportunities expected to arise.

Occupation Outlook

Job opportunities by occupation category

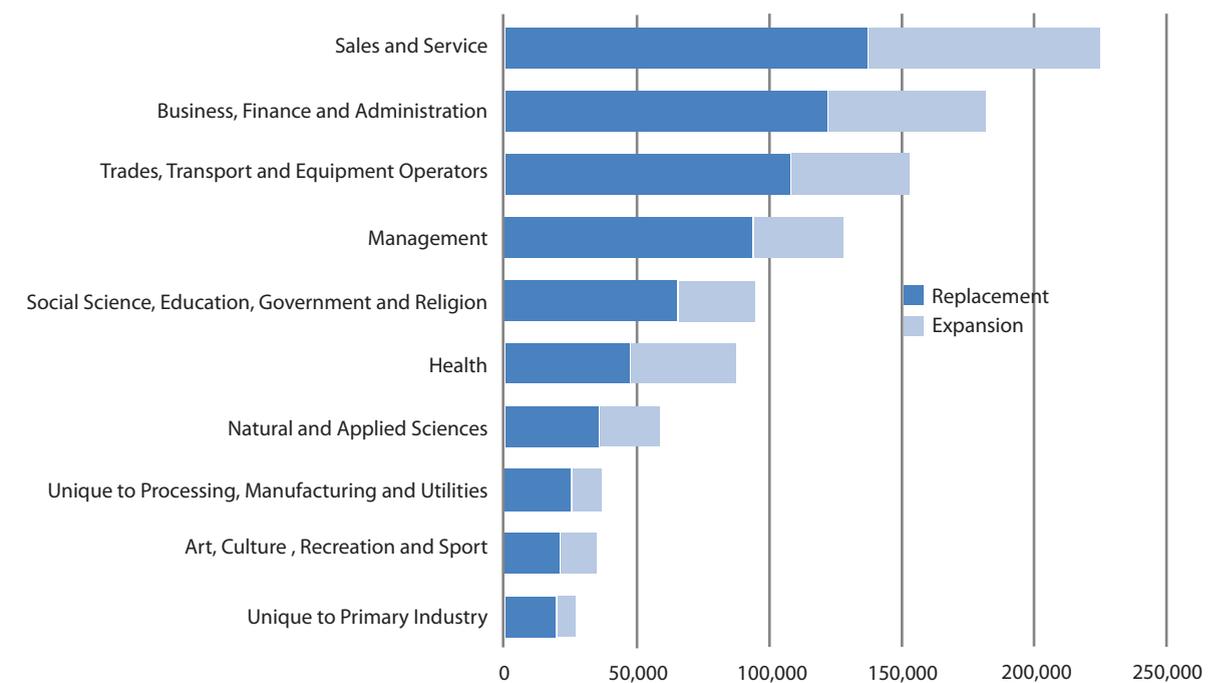
There are 10 broad occupational categories identified in Canada's National Occupation Classification (NOC). The categories are based on skill type. In B.C., the three occupation groups with the most expected job openings to 2020 are (see Chart 3):

- *Sales and Service Occupations*
- *Business, Finance and Administration Occupations*
- *Trades, Transport and Equipment Operators and Related Occupations*

These occupation groups, which currently are also the three largest occupation groups, account for over 54 percent of total projected job openings in B.C. Over the ten-year projection period to 2020, *Sales and Service Occupations* are expected to have the largest number of job openings. In total, 224,600 job openings are forecast. These include 136,900 due to replacement need, mainly as a result of retirement, and 87,700 driven by economic growth. Provincially, 182,000 job openings are expected for *Business, Finance and Administration Occupations* and 153,300 openings are expected for *Trades, Transport and Equipment Operators and Related Occupations*. In contrast, smaller occupation groups are more likely to have fewer job vacancies. *Occupations Unique to Primary Industry* (26,600 job openings), *Occupations in Art, Culture, Recreation and Sport* (35,300), and *Occupations Unique to Processing, Manufacturing and Utilities* (36,800) are expected to have the fewest job openings.

The B.C. population is anticipated to continue to age. The median age of British Columbians will have increased from 40.9 years in 2010 to 42.4 years in 2020.⁶ Due to the aging population and workforce, there are more expected employment opportunities due to replacement need than due to economic growth for each occupation group. More specifically, over 60 percent of the total expected job openings will replace retiring workers for most occupation groups except *Health Occupations* (54 percent) and *Occupations in Art, Culture, Recreation and Sport* (59 percent).

Chart 3. Most Job Openings in British Columbia Are to Replace Retiring Workers, 2010-2020



Economic growth provides opportunities for new jobs. British Columbia is expected to add jobs by 1.4 percent annually over the 2010-2020 decade. Three occupation groups are anticipated to add jobs at a faster pace than the provincial average. In particular, *Health Occupations* are forecast to experience the strongest job growth:

- *Health Occupations* (an annual average growth rate of 2.4 percent)
- *Natural and Applied Sciences and Related Occupations* (1.6 percent)
- *Occupations in Art, Culture, Recreation and Sport* (1.6 percent)

In contrast, rates of new job growth are predicted to be the lowest for *Occupations Unique to Primary Industry* (0.8 percent), *Trades, Transport and Equipment Operators and Related Occupations* (1.1 percent), and *Occupations Unique to Processing, Manufacturing and Utilities* (1.2 percent).

The rest of the occupation groups can expect modest labour market prospects. Between 2010 and 2020, the demand for workers in *Business, Finance and Administration Occupations* is projected to grow at about the average for all occupations. Demand for workers in *Sales and Service Occupations; Occupations in Social Science, Education, Government Service and Religion; and Management Occupations* is expected to rise at a slightly slower rate than the provincial average, at 1.3 percent per year on average.

6. BC Stats, British Columbia Population Projections 2010 to 2036 (December 2009).

Table 1. Occupations With the Greatest Expected Average Annual Growth in Demand in B.C. Are Health-Related, 2010-2020⁷

Occupation	Average annual growth rate (%)	Growth in demand for workers
British Columbia		
NOC311 Physicians, dentists and veterinarians	2.5	4,980
NOC315 Nurse supervisors and registered nurses	2.5	12,390
NOC312 Optometrists, chiropractors and other health diagnosing and treating professionals ⁸	2.4	500
Vancouver Island / Coast		
NOC315 Nurse supervisors and registered nurses	2.1	2,320
NOC312 Optometrists, chiropractors and other health diagnosing and treating professionals	2.1	130
NOC311 Physicians, dentists and veterinarians	2.0	770
Lower Mainland / Southwest		
NOC311 Physicians, dentists and veterinarians	2.6	3,460
NOC315 Nurse supervisors and registered nurses	2.6	7,490
NOC312 Optometrists, chiropractors and other health diagnosing and treating professionals	2.6	280
Thompson-Okanagan		
NOC315 Nurse supervisors and registered nurses	2.6	1,340
NOC311 Physicians, dentists and veterinarians	2.6	420
NOC321 Medical technologists and technicians (except dental health) ⁹	2.6	420

Occupation	Average annual growth rate (%)	Growth in demand for workers
Kootenay		
NOC315 Nurse supervisors and registered nurses	2.7	390
NOC311 Physicians, dentists and veterinarians	2.7	120
NOC341 Assisting occupations in support of health services ¹⁰	2.6	440
Cariboo		
NOC315 Nurse supervisors and registered nurses	2.9	470
NOC311 Physicians, dentists and veterinarians	2.7	130
NOC341 Assisting occupations in support of health services	2.6	400
North Coast and Nechako		
NOC729 Other construction trades ¹¹	4.5	120
NOC727 Carpenters and cabinetmakers	4.3	300
NOC071 Managers in construction and transportation	3.6	90
Northeast		
NOC063 Managers in food service and accommodation	3.2	90
NOC315 Nurse supervisors and registered nurses	3.2	230
NOC645 Occupations in food and beverage service ¹²	3.1	160

North Coast and Nechako and Northeast. This mirrors their position in the province as a whole. In addition to the health occupations named above, *Medical Technologists and Technicians* is one of the top growth occupations in Thompson-Okanagan. *Assisting Occupations in Support of Health Services* take the third spot in both Kootenay and Cariboo. On average, these health occupations are expected to expand their demand for workers by two to three percent each year.

North Coast and Nechako and Northeast, the youngest regions in the province, are expected to have a different picture. In North Coast and Nechako, several multi-billion dollar projects are either currently under development or planned over the next five years. As a result, three construction-related occupations are expected to occupy the top-growth spots. These are led by *Other Construction Trades*, which is expected to post 4.5 percent annual demand growth over the ten-year horizon. In Northeast, *Nurse Supervisors and Registered Nurses* and two food service and accommodation-related occupations are

Regional job opportunities by occupation

Taking a closer look at new job creation for 3-digit NOC occupation groups, across the province three health occupations are expected to experience the fastest growth in demand for workers. The demand for *Physicians, Dentists and Veterinarians* is forecast to expand by an average annual growth rate of 2.5 percent. Following are *Nurse Supervisors and Registered Nurses* (2.5 percent) and *Optometrists, Chiropractors and Other Health Diagnosing and Treating Professionals* (2.4 percent). The expected strong growth in health professionals is the result of strong demand for health services. The demand is driven by a growing and aging population and rising per capita expenditures in B.C.

As shown in Table 1, health occupations are the top performers in most B.C. regions, except

7. Occupations with a very low level of demand for workers are excluded.

8. Other health diagnosing and treating professionals includes doctors of podiatric medicine, chiropodists and podiatrists, naturopaths, orthoptists and osteopaths.

9. Medical technologists and technicians includes medical laboratory technologists and technicians, veterinary and animal health technologists and technicians, respiratory therapists, medical radiation technologists, medical sonographers and cardiology technologists.

10. Assisting occupations in support of health services include dental assistants, nurse aides, orderlies and patient services associates.

11. Other construction trades include roofers and shinglers, glaziers, insulators, painters and decorators and floor covering installers.

12. Occupations in food and beverage service include restaurant hosts/hostesses, bartenders and food and beverage servers.

expected to expand at the greatest rate.

Education, Training and Skills Demand

The qualifications required for occupations differ in education, training, skills and experience. Each of the 140 occupations covered in this forecast is classified into at least one skill level. This is based on the most recent historical patterns for education and training requirements.¹³

For the outlook period of 2010 to 2020, there are 1.03 million projected job openings in B.C. (including both expansion demand and replacement demand). Most job openings are expected in Skill Level B – Technical, Paraprofessional and Skilled Occupations. This is followed by Skill Level A – Professional and Managerial Occupations. Together these two skill levels, which normally require some post-secondary training or a university degree, account for 78 percent of the total projected job openings in the province. Current data from Statistics Canada’s Labour Force Survey suggest that 68 percent of the labour force in B.C. had some post-secondary education or a university degree in 2010.

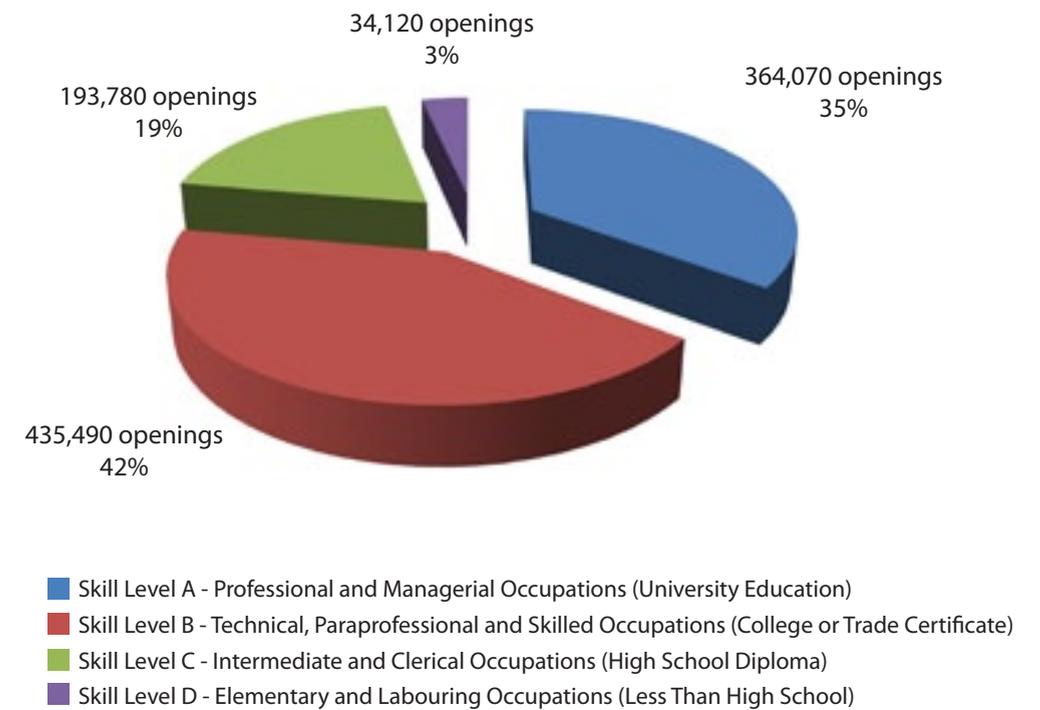
Conclusions

Over the past year, the B.C. economy and labour market have experienced gains, and this growth is expected to continue. While uncertainty remains about the strength of future growth, the labour market is improving. Tight labour market conditions are expected to return sooner than previously anticipated.

Over the next ten years, more than one million job openings are expected across the province’s seven development regions. At the same time, the number of workers needed will gradually become greater than the number of workers available.

The demographic profile of the province continues to influence the dynamics of the labour market. With relatively modest growth in new job creation, nearly two-thirds of job openings over the next ten years will replace retiring workers. The population of the province is expected to continue to age. This implies that the number of workers from within B.C. who join the workforce for the first time will decline slightly over the forecast

Chart 4: Education and Training Requirements of Projected Job Openings in B.C., 2010-2020



period. Migrants from outside the province will therefore be an increasingly important source of new labour supply. If regions are unable to attract migrants at the levels projected, then labour market pressures will be more intense.

We look forward to continuing to work collaboratively to improve the B.C. Labour Market Outlook. We welcome your thoughts on those aspects of the Outlook that are most valuable, as well as those that can be improved. Your input will help our efforts to continue to build a reliable labour market information system for our province and its diverse regions.

13. In this document, all the management occupations are grouped in Skill Level A although it is recognized that requirements for management occupations can vary in education and experience.

Professional and Managerial Occupations and Technical, Paraprofessional and Skilled Occupations, which normally require some post-secondary training or a university degree, account for 78 percent of the total projected job openings in the province

Appendix 1: Provincial Summary Data

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		2010-2020
All Occupations - British Columbia													
Demand Outlook	2,399,210	2,431,080	2,476,690	2,519,960	2,570,910	2,613,550	2,658,440	2,691,920	2,714,200	2,730,210	2,750,200	Total Openings Outlook	1,027,430
Supply Outlook	2,442,700	2,472,750	2,513,480	2,554,210	2,593,060	2,628,230	2,656,950	2,680,690	2,698,590	2,714,540	2,732,160	Expansion	350,990
Supply less Demand	43,490	41,670	36,790	34,250	22,150	14,680	-1,490	-11,230	-15,610	-15,670	-18,040	Replacement	676,440
Supply / Demand	1.02	1.02	1.01	1.01	1.01	1.01	1.00	1.00	0.99	0.99	0.99		
All Occupations - Mainland / Southwest													
Demand Outlook	1,471,250	1,493,840	1,515,650	1,537,760	1,573,730	1,611,100	1,655,440	1,688,740	1,707,630	1,718,030	1,730,680	Total Openings Outlook	666,250
Supply Outlook	1,503,000	1,525,970	1,554,150	1,581,580	1,609,820	1,636,100	1,658,870	1,677,190	1,690,700	1,702,740	1,716,210	Expansion	259,430
Supply less Demand	31,750	32,130	38,500	43,820	36,090	36,090	3,430	-11,550	-16,930	-15,290	-14,470	Replacement	406,820
Supply / Demand	1.02	1.02	1.03	1.03	1.02	1.02	1.00	0.99	0.99	0.99	0.99		
All Occupations - Vancouver Island / Coast													
Demand Outlook	407,390	412,840	422,130	431,800	437,590	439,980	439,520	437,540	438,310	440,140	441,940	Total Openings Outlook	152,620
Supply Outlook	409,700	414,290	418,790	424,440	429,470	434,420	437,560	439,300	440,190	440,590	441,020	Expansion	34,550
Supply less Demand	2,310	1,450	-3,340	-7,360	-8,120	-5,560	-1,960	1,760	1,880	450	-920	Replacement	118,070
Supply / Demand	1.01	1.00	0.99	0.98	0.98	0.99	1.00	1.00	1.00	1.00	1.00		
All Occupations - Thompson - Okanagan													
Demand Outlook	275,300	275,030	279,670	282,620	286,500	289,830	293,370	297,280	300,580	303,310	306,040	Total Openings Outlook	110,320
Supply Outlook	281,400	282,340	284,510	285,660	286,300	287,760	290,040	293,580	297,520	301,600	305,430	Expansion	30,740
Supply less Demand	6,100	7,310	4,840	3,040	-200	-2,070	-3,330	-3,700	-3,060	-1,710	-610	Replacement	79,580
Supply / Demand	1.02	1.03	1.02	1.01	1.00	0.99	0.99	0.99	0.99	0.99	1.00		
All Occupations - Kootenay													
Demand Outlook	74,740	76,480	78,730	81,310	83,860	83,340	82,490	82,200	82,190	82,500	83,240	Total Openings Outlook	31,170
Supply Outlook	76,500	77,060	78,560	79,920	81,610	81,910	81,980	82,000	82,070	82,170	82,360	Expansion	8,500
Supply less Demand	1,760	580	-170	-1,390	-2,250	-1,430	-510	-200	-120	-330	-880	Replacement	22,670
Supply / Demand	1.02	1.01	1.00	0.98	0.97	0.98	0.99	1.00	1.00	1.00	0.99		
All Occupations - Cariboo													
Demand Outlook	87,190	88,670	89,820	91,100	91,650	91,830	91,740	91,570	91,400	91,420	91,680	Total Openings Outlook	29,170
Supply Outlook	87,400	88,150	89,040	90,040	90,570	91,200	91,490	91,580	91,480	91,310	91,200	Expansion	4,490
Supply less Demand	210	-520	-780	-1,060	-1,080	-630	-250	10	80	-110	-480	Replacement	24,680
Supply / Demand	1.00	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	1.00	0.99		
All Occupations - North Coast and Nechako													
Demand Outlook	44,330	43,900	48,810	52,070	53,650	53,430	51,640	49,930	48,900	49,040	50,290	Total Openings Outlook	19,890
Supply Outlook	45,000	44,890	47,270	49,940	51,970	52,900	52,590	52,170	51,380	50,530	49,970	Expansion	5,960
Supply less Demand	670	990	-1,540	-2,130	-1,680	-530	950	2,240	2,480	1,490	-320	Replacement	13,930
Supply / Demand	1.02	1.02	0.97	0.96	0.97	0.99	1.02	1.04	1.05	1.03	0.99		

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2010 to 2020	
All Occupations - Northeast													
Demand Outlook	39,000	40,320	41,890	43,290	43,940	44,050	44,250	44,660	45,190	45,760	46,320	Total Openings Outlook	18,020
Supply Outlook	39,700	40,050	41,160	42,630	43,320	43,940	44,420	44,860	45,260	45,600	45,970	Expansion	7,320
Supply less Demand	700	-270	-730	-660	-620	-110	170	200	70	-160	-350	Replacement	10,700
Supply / Demand	1.02	0.99	0.98	0.98	0.99	1.00	1.00	1.00	1.00	1.00	0.99		

How to Interpret Summary Data Table

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2010-2020	
All Occupations - British Columbia													
Demand Outlook	2,399,210	2,431,080	2,476,690	2,519,960	2,570,910	2,613,550	2,658,440	2,691,920	2,714,200	2,730,210	2,750,200	Total Openings Outlook	1,027,430
Supply Outlook	442,700	2,472,750	2,513,480	2,554,210	2,593,060	2,628,230	2,656,950	2,680,690	2,698,590	2,714,540	2,732,160	Expansion	350,990
Supply less Demand	43,490	41,670	36,790	34,250	22,150	14,680	-1,490	-11,230	-15,610	-15,670	-18,040	Replacement	676,440
Supply / Demand	1.02	1.02	1.01	1.01	1.01	1.01	1.00	1.00	0.99	0.99	0.99		

1) Region: Means the geography referred to, development region or the province

2) Demand Outlook: The expected number of workers employed (employment) as well as the expected number of workers that are normally unemployed (because they are transitioning between jobs, responding to seasonal fluctuations, or their skills do not match those required by employers)

3) Supply Outlook: The expected labour force, including those who are employed and those who are actively looking for a job

4) Supply less Demand: The difference between the Supply Outlook and the Demand Outlook. A positive value indicates that Supply is greater than Demand

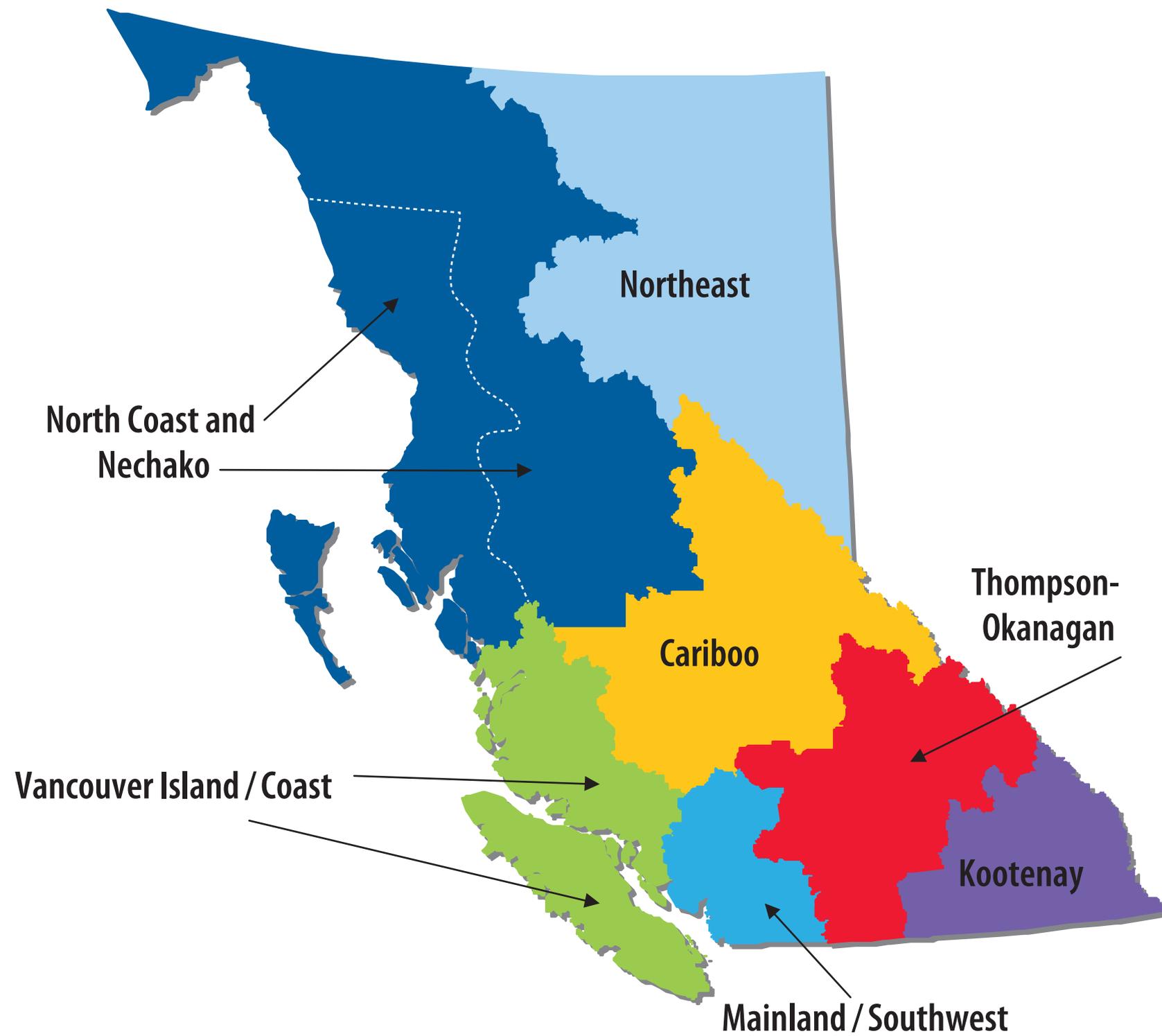
5) Supply/Demand: The ratio of the Supply Outlook to the Demand Outlook. If this ratio is greater than 1, Supply is greater than Demand, suggesting an excess supply of labour. If the ratio is less than 1, Supply is less than Demand, suggesting an excess demand for workers

6) Total Openings Outlook: The expected number of job openings over the outlook period generated through expansion and replacement

7) Expansion: New job openings that arise due to economic growth. It is the difference between the Demand Outlook in 2020 and 2010

8) Replacement: Job openings to fill positions that are generated through retirements and deaths over the 2010 to 2020 period

Appendix 2: Economic Development Regions



Appendix 3: Methodology and Assumptions

1. Model structure and methodology

- 1) The B.C. Labour Market Scenario Model is a complex modeling system with many variables. The Model is composed of two sets of models: regional macroeconomic models and regional occupational models. The results of the regional models are rolled up to generate provincial estimates.

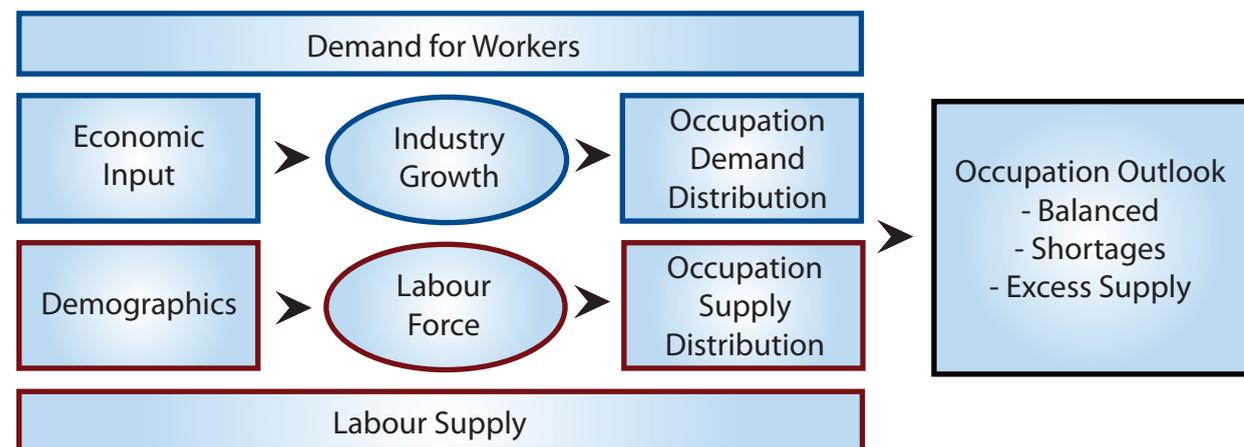
Regional macroeconomic models:

- Are basically fixed-price general equilibrium models which employ an input-output structure that links different sectors of the economy together. There are seven regional macroeconomic models, each covering 14 industries. Economic and industry growth drives labour demand in each region.
- Incorporate certain major projects to capture economic activities in regions and the labour market needs driven by those projects.

Regional occupational models:

- Provide demand and supply information for a total of 140 occupations at the 3-digit NOC level.
- Demand is determined by expected industry and economic performance, as well as labour productivity.
- Supply and its components of change are primarily driven by demographic shifts and economic performance.

The diagram below illustrates how the models work. Labour market conditions for each occupation are determined by both labour supply and labour demand for that particular occupation.



2) Model validation

- Industry intelligence and expertise from ministries, external industry associations, business and professional groups, and other organizations have been incorporated to validate the model approach, assumptions and results.
- Staff knowledge and internal research are also incorporated into the model development.
- The Conference Board of Canada has reviewed the approach and methodology of the B.C. Labour Market Scenario Model and has concluded it to be sound, and "the model's approach to estimating labour market supply and demand is likely to be reliable."

2. Key assumptions

- **Macroeconomic indicators:** Assumptions on key economic indicators such as GDP, investment, income, capital stock and housing starts are incorporated into the model. GDP and employment growth assumptions are consistent with the medium-term economic outlook in the B.C. Ministry of Finance Budget and Fiscal Plan 2011/12 to 2013/14, released in February 2011. Economic outlooks for B.C.'s major trading partners such as the U.S., Japan and European Union are incorporated.
- **Productivity:** Assumptions are made on the growth of industry productivity for each region.
- **Population:** Population projections (by region, including age and sex breakdown and components of population change) are consistent with P.E.O.P.L.E. 35 produced by BC Stats.
- **Participation rate:** Assumptions are made on participation rate trends by age and sex. Overall, labour force participation rates are expected to drop over the outlook period. However, the participation rate of women aged 55 and over is expected to increase.
- **New entrants:** Age and sex-specific participation rates are used to calculate the number of new entrants to the labour market.
- **Retirements and deaths:** Occupation-specific median retirement age and labour force age structure are used to derive the number of retirements from the labour force. Age and sex-specific death rates are used to calculate the number of deaths in the labour force.
- **Labour force adjustment:** 1) Labour supply generally follows labour demand, and in the long run, labour force for an occupation will be determined by the demand for the occupation; 2) Occupations need to compete with each other for new labour supply; 3) If the share of an occupation in the economy is rising, so will its share of new entrants.

3. Key data sources

- Labour Force Survey (Statistics Canada)
- Census 2006 (Statistics Canada)
- Population estimates and projections (BC Stats)
- Budget and Fiscal Plan (B.C. Ministry of Finance)
- British Columbia Economic Accounts (BC Stats)
- British Columbia Major Projects Inventory (B.C. Ministry of Jobs, Tourism and Innovation)

4. Major changes in the 2010-2020 cycle

- **Outlook:** Both the 2009-2019 and 2010-2020 forecast cycles expect the economy and employment to grow at a similar pace, on average, in the first five-year period. However, in the 2010-2020 outlook demand for workers is expected to grow at a slower pace in the second half of the outlook period as compared to the last cycle. For 2010-2020, demand for workers is expected to grow by an average of 1.7 percent in the first half, then by 0.9 percent in the second half of the forecast. Labour force growth follows a similar pattern, with 1.5 percent average annual growth in the first half of the period and 0.7 percent in the latter half of the period. The decrease in demand growth is driven by moderating economic growth due to uncertainty in external global economic activity. The decrease in labour force growth is driven by lower labour force participation due to aging of the population.
- **New entrants:** Unlike the last cycle, this forecast cycle assumes that there will be no new entrants entering management and supervisory occupations as these occupations usually require several years of work experience.
- **Revisions to the Labour Force Survey:** Statistics Canada revised the Labour Force Survey estimates back to 1996, based on 2006 Census population counts. Sub-provincial estimates now correspond to 2006 Census boundaries. The provincial labour force population for 2009 is revised downward by 43,700 people. Consistent with the revised population figure, provincial labour force and employment estimates for 2009 are revised downward by 42,700 and 41,500, respectively.

