



# CONSTRUCTION LOOKING FORWARD

An Assessment of Construction  
Labour Markets from 2008 to 2016  
for **BRITISH COLUMBIA**

PRODUCED BY THE  
CONSTRUCTION SECTOR COUNCIL

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*Glossary of terms available at [www.constructionforecasts.ca](http://www.constructionforecasts.ca)*

- |             |                            |
|-------------|----------------------------|
| 1. NATIONAL | 5. MANITOBA                |
| 2. ATLANTIC | 6. SASKATCHEWAN            |
| 3. QUEBEC   | 7. ALBERTA                 |
| 4. ONTARIO  | <b>8. BRITISH COLUMBIA</b> |



## 1. HIGHLIGHTS AND INTRODUCTION

Since the start of the millennium, British Columbia has led the country in construction employment growth thanks to advances in both residential and non-residential construction investments. By 2007, British Columbia labour markets for virtually every trade were tight and recruiting was difficult. Looking ahead, the high demand for construction skills will continue into 2010, and employers can expect wage premiums and other labour costs to rise.

Whereas in the past most of the competition for skilled workers came from Alberta, growing construction activity in Saskatchewan, Manitoba and New Brunswick will all add new competition for workers from 2008 to 2016. Stiff competition for trades all across Canada will lead to increased reliance on immigration, temporary foreign workers, retaining older workers and increasing recruitment of youth, Aboriginals and women.

By 2010 and 2011, conditions will ease in British Columbia. More normal recruiting will be possible and demand will ease off gradually from that point on. By 2012 and beyond, however, new risks emerge that major projects scheduled in other provinces will draw workers from British Columbia. Growing construction activity in Saskatchewan, Manitoba and New Brunswick all add new competition for skilled workers.

These cyclical shifts will sustain the need for British Columbia industry and government investment in promotion, recruiting and training programs. Even as construction activity flattens out later in the cycle, increased retirement demand will call for large numbers of new workers into construction. From 2007 to 2016, retirement demand is estimated to require at least 26,500 new entrants, while new building will require an additional 21,000 workers for construction trades and occupations to reach the employment peak in 2009.

This is the fourth annual edition of *Construction Looking Forward*, providing labour market assessments from 2008 to 2016 for British Columbia. By combining a macroeconomic scenario with an inventory of underway and planned construction projects, this report analyzes the details of demand and supply for more than 30 trades and occupations and then ranks market conditions over the next nine years.

*Construction Looking Forward* is an industry planning tool. Findings reported here provide an assessment of labour market conditions that are tied to expected future levels of construction activity. Results depend on one scenario for major projects and other economic conditions. As indicated in the report, it is

anticipated that project plans may well change and labour market conditions may adjust in the face of events. Similarly, industry and government initiatives may adapt to expected future conditions.

The system of labour market analysis used in this and all provincial *Construction Looking Forward* reports is the most advanced and detailed industry model available in Canada. It is based on forecasting approaches pioneered by the Construction Owners Association of Alberta and the Commission de la construction du Québec. These models have been adapted and expanded by the Construction Sector Council (CSC) with input from key players from all sectors of the industry. These organizations – members of the British Columbia Labour Market Information (LMI) Committee – are identified on the inside back cover.

Each year the CSC LMI system is reviewed and improvements are introduced in response to industry suggestions and other opportunities. During 2008, plans include the addition of details for residential construction and the update of labour market measures based on 2006 Census results released by Statistics Canada in early March 2008. Improvements based on this work will be available in the 2009 release of *Construction Looking Forward*.

## 2. ECONOMIC ENVIRONMENT

The economic environment facing the construction industry determines both supply and demand for construction trades through its impact on investment, employment and the labour force. This environment includes the economic performance of both the provincial economy and that of its trading partners.

The assumptions for the rest of the world are derived from economic outlooks produced by such organizations as the World Bank and the International Monetary Fund. These assumptions reflect the views of world economy performance held near the end of 2007, when they were assembled.

The assumptions for the domestic economic environment were developed under the direction of the provincial LMI Committee. They are based on forecasts of a macroeconomic model of the provincial economy that incorporates the external environment assumptions and those about major project investment provided by the LMI Committee. The forecast starts in 2008.

### External Environment

The external environment facing British Columbia over the forecast period continues to be a positive factor behind the province's expected economic performance. Table 1 shows the key assumptions for commodity prices and trading partner performance. These assumptions may be summarized as follows:

- ◆ Oil prices, as measured by West Texas Intermediate oil prices at Cushing, rise to US\$84 per barrel in 2008 and then fall to US\$78 in 2016. Natural gas prices at the Henry Hub recover in 2007 and reach US\$7.7 per MMBTU in 2008. They also weaken with oil prices falling below US\$7 by 2016. These assumptions are based on recent forecasts by the U.S. Energy Information Administration.
- ◆ The agriculture and metals and minerals price indices are composites of commodities – part of Statistics Canada's Raw Materials Price Index. Agriculture product prices generally match inflation over the forecast period, after rising sharply in 2007. Metals and minerals prices are assumed to decline over the period following rapid increases over the past few years.
- ◆ The Canadian dollar depreciates from US\$0.98 in 2007 to US\$0.91 in 2011 in line with lower energy prices, falling commodity prices and weak economic performance in Central Canada. It remains near US\$0.90 over the remainder of the forecast period driven by its purchasing power parity value and Canada-U.S. interest rate differentials.

- ◆ Economic growth weakens in the United States in 2008, but a recession is not assumed to occur. The slowdown is particularly evident in housing investment, which declines sharply in 2008, automobile expenditures and business investment. This slowdown reduces growth in those industries that specialize in these products.
- ◆ The high exchange rate and weak U.S. growth cause growth in Canada as a whole to slow to below 2% in 2008 and recover only slowly in 2009. The rapid increase in the Canadian dollar has had a significant negative impact on the manufacturing and tourism industries. It will take time to adjust to the higher exchange rate. Growth, nevertheless, recovers in 2010 and beyond to average near 2.5% in the last half of the forecast period.
- ◆ Interest rates fall in both Canada and the United States in line with weaker economic growth in 2008, but increase thereafter as growth strengthens. A tightening labour market in Canada causes interest rates to trend upward over the forecast period to allow the Bank of Canada to achieve its target inflation rate of about 2%.
- ◆ Federal and provincial government fiscal policy is assumed to be expansionary over the next 10 years. Corporate tax reductions and additional personal income tax reductions are assumed over the forecast period for the federal government. Provincial governments also are assumed to reduce taxes, and health expenditures continue to rise rapidly.
- ◆ It is assumed the federal government will increase annual immigration levels over the forecast period in line with labour force requirements.

External economic conditions are always subject to change and the likelihood of new developments that might alter these key assumptions are high.

### Provincial Environment

Table 1 shows the outlook for the key indicators of the province's economic performance. The highlights include the following:

- ◆ Economic growth averages 2.7% over the forecast period. The major source of growth in the first half of the period is investment. Higher commodity prices, which have increased investment in the mining industry, the construction of facilities for the 2010 Winter Olympics, additional tourism-related investment and transportation and warehousing projects are the factors behind the strong investment growth.
- ◆ In the second half of the period, growth slows as major projects are completed and investment declines. Exports associated with the strong investment in the medium term are an important factor behind growth.

**TABLE 1 KEY ECONOMIC INDICATORS, REST OF THE WORLD AND BRITISH COLUMBIA**

	2006	2007	2008f	2009f	2010f	2011f	2012-16f*	2007-16f**
<b>Raw Material Prices</b>								
Agricultural Products \$US Inflation	7.9	14.7	2.1	2.2	2.0	1.7	2.1	3.3
Other Non-Energy Products \$US Inflation	53.9	5.7	-12.9	-7.8	-1.5	-1.8	-1.4	-2.5
WTI Oil Price (@ Cushing) \$US/BBL	66.1	72.0	84.0	80.0	79.3	79.1	78.4	78.6
Henry Hub Gas Price \$US/MMBTU	6.9	7.2	7.7	7.5	7.2	6.9	6.8	7.1
<b>United States Economy</b>								
Real GDP Growth (%)	2.9	2.2	1.8	2.7	2.8	2.4	2.3	2.3
GDP Deflator Inflation (%)	3.1	2.7	2.1	2.2	2.0	1.7	2.1	2.1
3 Month Treasury Bill Rate (%)	4.7	4.5	3.5	4.0	4.2	4.0	3.6	3.8
<b>Canadian Economy</b>								
Real GDP Growth (%)	2.8	2.5	1.8	2.4	2.6	3.0	2.5	2.5
GDP Deflator Inflation (%)	2.4	3.6	2.2	1.9	1.7	0.9	1.7	1.9
3 Month Treasury Bill Rate (%)	4.0	4.2	3.6	3.9	4.2	4.4	5.0	4.5
Exchange Rate \$US	0.88	0.93	0.98	0.95	0.92	0.91	0.90	0.9
<b>British Columbia</b>								
(Growth Rates %)								
Real GDP	3.3	3.3	2.6	3.2	2.9	2.8	2.4	2.7
Consumer Expenditures	5.5	4.9	3.8	3.5	3.0	3.0	2.7	3.2
Government Consumption Expenditures	4.3	4.4	2.8	2.9	3.0	3.0	2.9	3.1
Government Investment Expenditures	7.7	6.1	3.2	1.6	0.9	2.0	2.5	2.6
Business Investment Expenditures	10.5	8.5	6.5	8.5	-4.6	-2.2	0.1	1.7
Exports	2.5	0.8	0.3	2.1	3.3	5.4	2.3	2.4
Imports	8.1	5.5	3.5	4.3	0.2	3.0	1.9	2.6
Population	1.4	1.4	1.4	1.4	1.5	1.5	1.3	1.4
Employment	3.1	3.2	1.4	1.8	1.4	0.7	1.0	1.3
Labour Force	1.8	2.6	1.6	1.3	1.4	1.3	1.0	1.3
Unemployment Rate (Level %)	4.8	4.2	4.4	3.9	3.9	4.4	4.5	4.3
CPI	1.7	1.7	1.6	1.9	2.5	1.9	2.2	2.1
Labour Income Per Hour (\$)	5.9	3.6	3.3	3.5	3.8	3.7	3.6	3.6

f = forecast

\* Growth rates are averages for the period, while levels are 2016 values.

\*\* Forecast period average

Sources: Construction Sector Council; World Bank; International Monetary Fund; Statistics Canada.

- ◆ Employment grows on average 1.3% over the forecast period in line with gross domestic product (GDP) growth and an improvement in the province's productivity performance – 1.5% per year. The higher productivity is driven in part by increased production in the mining sector, which is characterized by high levels of productivity.
- ◆ The labour market remains tight over the forecast period with the unemployment rate averaging 4.4%. Labour force growth is unable to keep pace with employment growth in the medium term, in part, because of an aging population that leads to rapidly rising retirements from the labour force.
- ◆ Population growth strengthens in the medium term to average 1.4%. The strong growth is a result of rising retirements and strong employment growth, which requires continued high levels of net in-migration. As employment growth slows in the last half of the forecast period, net in-migration falls and population growth slows to average 1.3%.
- ◆ Consumer price index (CPI) inflation averages 2.1% during the forecast period. A tight labour market, inflation and productivity growth cause labour income per hour to rise on average 3.6% per year.

### 3. INVESTMENT OUTLOOK

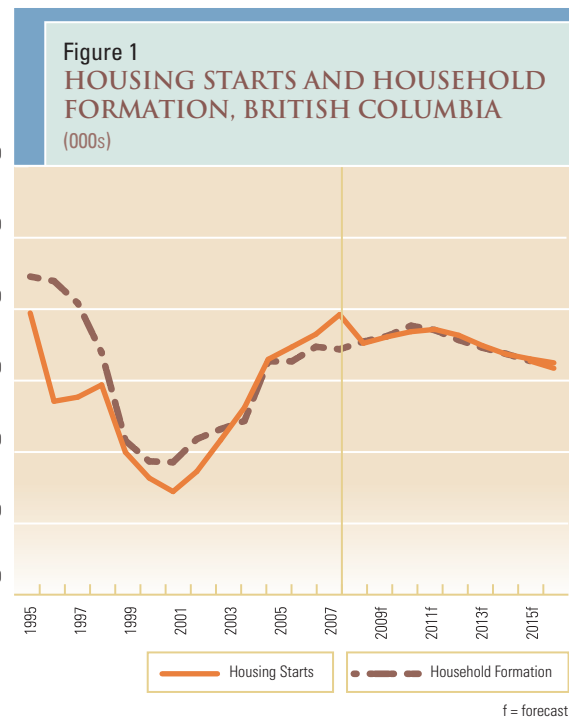
The province's outlook for investment is the key driver for construction trades demand. The current forecast shows moderate growth in residential investment in the medium term and strong growth in non-residential investment in the short term (see Table 2). In the last half of the forecast period, residential investment declines and non-residential investment exhibits slow growth.

#### Residential

The outlook for residential construction investment may be summarized as follows:

- ◆ Rising income, employment and population growth lead to an increase in household formation to 2010 (see Figure 1). Slower economic and population growth cause household formation to decline to 2016.
- ◆ While housing starts fall slightly to about 35 thousand units in 2008, they rise slightly again in 2009 in line with rising household formation. They fall after 2010 to about 31 thousand units in 2016.
- ◆ New housing investment experiences the largest increase and decrease over the forecast period in line with housing starts.

- ◆ Renovation investment expenditures experience steadier growth driven by an increasing number of households and rising real after-tax household income. These expenditures grow by an average of 4.2% to 2011 and 2.7% thereafter.



Sources: Construction Sector Council; Statistics Canada; Canada Mortgage and Housing Corporation.

**TABLE 2 INVESTMENT EXPENDITURES, BRITISH COLUMBIA**  
(\$2002 millions)

Investment	2006	2007	2008f	2009f	2010f	2011f	2012-16f*	2007-16f**
<b>Housing Starts (000s)</b>	<b>36.4</b>	<b>39.2</b>	<b>35.2</b>	<b>36.1</b>	<b>36.8</b>	<b>37.1</b>	<b>34.0</b>	<b>35.5</b>
<b>Residential Construction</b>	<b>11,687</b>	<b>12,519</b>	<b>11,940</b>	<b>12,304</b>	<b>12,589</b>	<b>12,791</b>	<b>12,582</b>	
% Change	6.7	7.1	-4.6	3.1	2.3	1.6	-0.3	0.8
New Housing	7,436	7,993	7,172	7,357	7,503	7,568	6,618	
% Change	12.6	7.5	-10.3	2.6	2.0	0.9	-2.71	-1.1
Renovations	4,251	4,526	4,767	4,948	5,086	5,224	5,964	
% Change	-2.3	6.5	5.3	3.8	2.8	2.7	2.7	3.5
<b>Non-Residential Investment</b>	<b>24,420</b>	<b>26,633</b>	<b>29,604</b>	<b>32,451</b>	<b>30,234</b>	<b>29,217</b>	<b>30,157</b>	
% Change	10.0	9.1	11.2	9.6	-6.8	-3.4	0.6	2.3
Engineering Construction	7,305	7,804	9,700	10,683	9,508	8,911	9,042	
% Change	4.3	6.8	24.3	10.1	-11.0	-6.3	0.3	2.5
Building Construction	3,700	4,289	4,341	4,632	4,532	4,469	4,583	
% Change	14.6	13.8	1.2	6.7	-2.2	-1.4	0.3	2.0
Industrial	618	695	759	937	821	747	738	
% Change	18.4	12.5	9.1	23.6	-12.4	-9.0	-0.2	2.3
Commercial	1,654	2,031	1,994	2,086	2,110	2,102	1,980	
% Change	23.4	22.8	-1.8	4.6	1.2	-0.4	-1.2	2.1
Institutional & Government	1,497	1,563	1,589	1,609	1,601	1,621	1,821	
% Change	5.0	4.4	1.7	1.3	-0.6	1.3	2.4	2.0
Machinery & Equipment	13,345	14,539	15,562	17,136	16,194	15,837	16,578	
% Change	12.1	9.0	7.0	10.1	-5.5	-2.2	0.9	2.3

f = forecast

\* Growth rates and housing starts are averages for the period, while levels are 2016 values.

\*\* Forecast period average

Sources: Construction Sector Council; Statistics Canada; Canada Mortgage and Housing Corporation.

## Major Projects

A list of major projects underway or planned for construction in the province provides an important set of information behind the outlook for non-residential investment and associated trades requirements. Economic models have difficulty in accurately predicting the occurrence, lumpiness and exact timing of construction expenditures and the associated number and types of trades required. The use of project information is an attempt to improve the accuracy of the outlook for the economy and trades requirements.

At present, there are a large number of major projects listed for construction in the province. The major projects in the forecast include only those identified before January 2008. While there are too many to list here, following are a few examples:

The recent dramatic increases in commodity prices have led to announcements of a number of mining projects. These include numerous gold, coal, copper, silver, lead, zinc and magnesium mines, as well as several aggregate resource mines.

The manufacturing sector is expanding wood product exports through the construction of a new pellet plant. Ethanol production is increasing with the construction of a couple of new facilities along with a new wind turbine production plant. The largest manufacturing project entails a billion dollar aluminium smelter expansion by Alcan.

A number of pipeline projects, as well as liquefied natural gas (LNG) terminals, have been announced. Demand for increased port capacity has also led to the announcement of major increases in port facilities, and the Vancouver International Airport expansion continues to 2027.

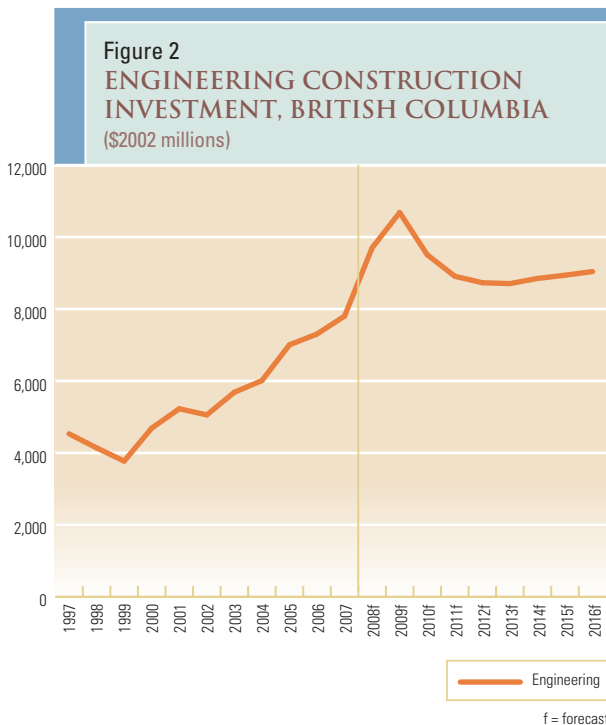
The utilities sector is rapidly expanding with more than a dozen major hydroelectric projects either planned or underway, several wind farms, a geothermal power plant and a large-capacity transmission line connecting Vancouver Island to the Pacific Northwest power grid.

A lot of investment activity also surrounds the preparation for the 2010 Winter Olympics, including the upgrading of the Sea-to-Sky Highway and the construction of new facilities such as the Olympic Village and several athletic event venues.

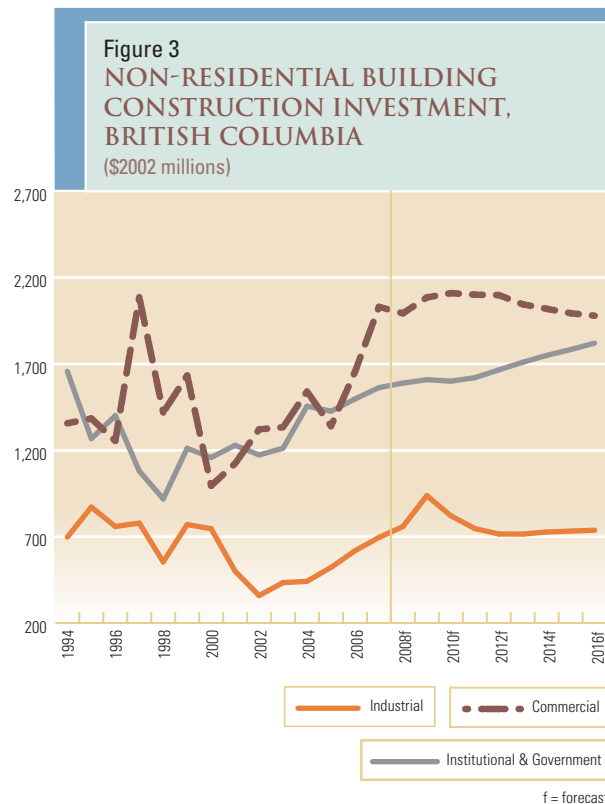
## Non-Residential

The outlook for non-residential construction investment may be summarized as follows:

- Engineering construction experiences strong growth to 2009 driven by increases in mining, utility and government infrastructure investment (see Figure 2). With declining commodity prices and the completion of many major projects, engineering investment declines in 2010 and 2011 before cycling up in the long term. Growth averages about 2.6% over the forecast period.
- Increases in manufacturing, transportation and warehousing investment are largely responsible for the strong increase in industrial building construction in the short term (see Figure 3). Investment growth averages 2.3% over the forecast period and 4.8% in the medium term. The completion of major projects and slower economic growth lead to a decline in industrial investment after 2009.



Sources: Construction Sector Council; Statistics Canada.



Sources: Construction Sector Council; Statistics Canada.

- ◆ Commercial building construction declines slightly in 2008 and then continues to grow to 2010 as increased business activity and population growth occur. It then declines slowly to 2016. Growth averages 2.1% over the period as a whole.
- ◆ In the medium term, expenditures related to the construction of Olympic facilities provide an important source of growth for institutional and government building construction. With the completion of these facilities by 2010, additional spending growth occurs to meet the needs of a rising and aging population.

## 4. CONSTRUCTION LABOUR MARKETS

The previously mentioned construction plans imply specific labour requirements for trades and occupations. In the CSC LMI system, employment in each trade and occupation is linked to spending on specific building types. Each link is defined by a measure of labour required for each million dollars of construction. This model structure distributes the changing mix of construction activity to the trades based on their specialization.

The CSC LMI system tracks employment, labour force, excess supply,<sup>1</sup> unemployment, apprenticeship and mobility for up to 31 selected trades and occupations (the CSC trades cover approximately 70% of total construction industry employment). Estimates are based on the 2001 Census, input from the industry and analysis of building patterns and labour requirements.<sup>2</sup> These estimates for British Columbia are sometimes limited by difficulties allocating workers to occupations, the small size of the workforce and the associated risks in statistical measurement. In some cases, information for the smaller trades and occupations is suppressed because of limited statistical reliability.<sup>3</sup>

### Employment Trends

In the recent past (2001 to 2007) British Columbia enjoyed strong growth in construction employment. Highlights for this period include the following:

- ◆ In 2001, the starting point for the analysis, British Columbia's construction industry was just entering a major upturn in activity, lagging the national expansion that had begun in the mid 1990s.
- ◆ From 2001 to 2007, British Columbia construction employment for the CSC trades rose more than 50%, exceeding all other provinces.
- ◆ The building boom was spread across all sectors, but new industrial and engineering activity accelerated in 2005.

The forecast period can be broken down into two distinct periods: 2008-2011 and 2012-2016.

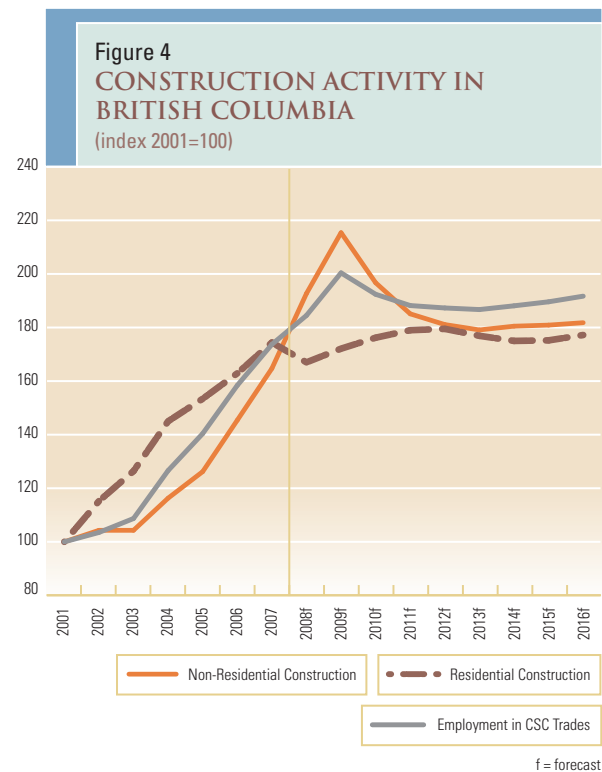
The first forecast period, 2008-2011, is marked by a turning point with activity rising to a peak in 2009 and turning down in 2010. Highlights include the following:

- ◆ Major engineering and industrial building projects expand strongly to 2009 and then several projects end, dropping activity in 2010.
- ◆ A drop in housing starts lowers residential work in 2008.

The second forecast period, 2012-2016, begins with a gradual decline in building that bottoms out in 2014 followed by flat activity in the last two years. Employment recedes, ending the period at levels very close to 2008.

Essentially, the scenario developed here suggests that the British Columbia building boom is reaching its peak. Housing activity will plateau in 2008 and non-residential building will peak in 2009.

The CSC analysis of the construction labour market starts by linking employment in the trades and occupations to building activity by sector. Figure 4 tracks the cumulative growth of the value of residential and non-residential building construction, as well as total employment for the 31 CSC trades and occupations. The data is presented using index numbers (2001 = 100) to reflect the cumulative growth in each measure starting from 2001.



Sources: Construction Sector Council; Statistics Canada.

1 The CSC LMI system uses the concept of excess supply rather than the more traditional measure of unemployment. Excess supply measures the difference between the simulated value of the provincial construction labour force and employment. Excess supply can be measured as the number of workers or as a percentage of the labour force. The simulated labour force estimates all the workers employed or seeking employment in the province independent of their province of residence. Measures of the unemployment rate sometimes allocate construction workers to their province of residence rather than their province of employment.

2 Statistics Canada released detailed statistics for occupations and industries from the 2006 Census in early March 2008 and these results will be used to update the CSC LMI system for the 2009 release.

3 The CSC, in consultation with the provincial LMI committees, determines which trades and occupations are suppressed. In some cases industry input on the number of employed in the workforce is used to refine Census and other Statistics Canada sources. Industrial instrument technicians and mechanics is the only trade that is suppressed in British Columbia.

The ebb and flow of building across sectors impacts the different trades. To illustrate these impacts the trades can be associated with sectors. For example, engineering construction activity is linked to big projects and provides employment for the following trades and occupations:

- ◆ Concrete finishers
- ◆ Construction managers
- ◆ Contractors and supervisors
- ◆ Crane operators
- ◆ Heavy equipment operators
- ◆ Heavy-duty equipment mechanics
- ◆ Trades helpers and labourers
- ◆ Truck drivers
- ◆ Welders

These trades and occupations also contribute to industrial projects and work with the following trades:

- ◆ Boilermakers
- ◆ Construction millwrights and industrial mechanics
- ◆ Electricians
- ◆ Ironworkers
- ◆ Steam, pipe and gasfitters

Employment in these trades responds to the timing of non-residential building projects.

The following trades are tied to new residential, commercial and institutional building and renovation:

- ◆ Bricklayers
- ◆ Carpenters
- ◆ Electricians
- ◆ Painters and decorators
- ◆ Plasterers, drywall installers and finishers
- ◆ Plumbers
- ◆ Refrigeration and air conditioning mechanics
- ◆ Roofers and shinglers
- ◆ Sheet metal workers

These rough allocations of trades and occupations to sectors help evaluate the employment trends reported in Table 3.<sup>4</sup> Overall, employment in the CSC trades and occupations continues to grow by 6% in 2008 and 9% in 2009. The forecast, however, calls for a decline of 4% in construction employment in 2010, led by expected job losses of about 10% for the engineering and industrial trades.

## The Available Workforce

Employers and workers respond in many ways to changing conditions in construction and related industries. Table 4 notes the projected change in the labour force<sup>5</sup> given the scenario for construction activity. These projections suggest recruiting strategies that fit shifting circumstances in British Columbia construction markets. Conditions related to attracting and retaining the construction workforce change across the recent past and forecast period.

During the recent past, 2001–2007, market realities included the following:

- ◆ While the provincial labour force grew on average 2.1% annually, the construction industry labour force expanded on average 8.1% each year between 2002 and 2007.
- ◆ Construction employers were recruiting four or more new workers for each one employed elsewhere, creating the following conditions:
  - A high profile for the construction industry
  - Increasing recruiting demands and challenges across the period
  - Rising numbers of temporary foreign workers<sup>6</sup>
  - Concerns about the cost and availability of accommodation for arriving workers
  - Additional initiative required for recruiting as unemployment had been reduced to well below normal levels by 2006

During 2008 and 2009 these pressures will persist as recruiting continues to expand. As industrial and engineering projects end in 2010, there will be a notable rise in unemployment in key trades. This will be the first easing in construction labour markets in more than eight years.

4 Note that percentage changes reported in the last column of tables 3 and 4 are average annual compound growth rates over the period in consideration.

5 The labour force is defined as those people identifying themselves as members of the trade or occupation and working and or seeking work in the industry.

6 The number of temporary foreign workers arriving in British Columbia has risen almost every year since 2001 and reached 25,000 in 2006. A portion of these are in construction.

**TABLE 3 EMPLOYMENT CHANGE IN TRADES AND OCCUPATIONS  
IN BRITISH COLUMBIA, 2007-2016 (levels and annual percentage change)**

Trades		2007e	2008f	2009f	2010f	2011f	2012-16f*
Boilermakers	(#)	89	76	175	-98	-38	64
	(%)	9%	7%	15%	-7%	-3%	1.0%
Bricklayers	(#)	133	-10	85	10	14	65
	(%)	8%	-1%	5%	1%	1%	0.7%
Carpenters	(#)	1,882	92	1,208	61	170	853
	(%)	8%	0%	5%	0%	1%	0.6%
Concrete Finishers	(#)	150	138	146	-83	-45	47
	(%)	10%	8%	8%	-4%	-2%	0.5%
Construction Managers	(#)	1,433	1,215	1,741	-1,115	-691	-209
	(%)	11%	9%	12%	-7%	-4%	-0.3%
Construction Millwrights and Industrial Mechanics (except textile)	(#)	69	75	135	-87	-45	19
	(%)	11%	10%	17%	-9%	-5%	0.5%
Contractors and Supervisors	(#)	1,084	1,154	1,484	-952	-569	61
	(%)	11%	10%	12%	-7%	-4%	0.1%
Crane Operators	(#)	90	103	109	-79	-48	-2
	(%)	12%	12%	12%	-8%	-5%	0.0%
Drillers and Blasters	(#)	67	178	116	-110	-68	-20
	(%)	13%	31%	15%	-13%	-9%	-0.6%
Electricians (including industrial and power system)	(#)	854	246	867	-336	-173	296
	(%)	10%	3%	9%	-3%	-2%	0.6%
Elevator Constructors and Mechanics	(#)	44	1	12	12	12	55
	(%)	8%	0%	2%	2%	2%	1.7%
Floor Covering Installers	(#)	212	-43	92	58	52	126
	(%)	8%	-1%	3%	2%	2%	0.8%
Gasfitters	(#)	79	55	161	-101	-64	-2
	(%)	12%	8%	21%	-11%	-8%	-0.1%
Glaziers	(#)	102	-19	36	18	15	38
	(%)	9%	-2%	3%	2%	1%	0.6%
Heavy Equipment Operators (except crane)	(#)	985	2,292	1,549	-1,416	-867	-217
	(%)	13%	26%	14%	-11%	-8%	-0.4%
Heavy-Duty Equipment Mechanics	(#)	114	249	186	-165	-102	-29
	(%)	13%	25%	15%	-12%	-8%	-0.5%
Insulators	(#)	70	20	62	-15	6	75
	(%)	8%	2%	7%	-2%	1%	1.5%
Ironworkers and Structural Metal Fabricators and Fitters	(#)	123	108	157	-96	-52	30
	(%)	11%	9%	12%	-6%	-4%	0.4%
Painters and Decorators	(#)	629	-104	318	120	116	328
	(%)	8%	-1%	4%	1%	1%	0.7%
Plasterers, Drywall Installers and Finishers, and Lathers	(#)	414	-21	203	82	84	280
	(%)	8%	0%	4%	1%	1%	0.9%
Plumbers	(#)	479	77	431	-116	-50	202
	(%)	9%	1%	7%	-2%	-1%	0.7%
Refrigeration and Air Conditioning Mechanics	(#)	109	28	85	-34	-19	30
	(%)	11%	3%	8%	-3%	-2%	0.5%
Residential and Commercial Installers and Servicers	(#)	258	31	208	-44	-17	77
	(%)	9%	1%	7%	-1%	-1%	0.5%
Roofers and Shinglers	(#)	260	-17	158	26	35	168
	(%)	8%	-1%	5%	1%	1%	0.9%
Sheet Metal Workers	(#)	362	23	243	-73	-40	46
	(%)	11%	1%	7%	-2%	-1%	0.2%
Steamfitters, Pipefitters and Sprinkler System Installers	(#)	109	42	83	-8	41	147
	(%)	8%	3%	5%	-1%	2%	1.6%
Tilesetters	(#)	106	-23	56	25	23	62
	(%)	8%	-2%	4%	2%	2%	0.8%
Trades Helpers and Labourers	(#)	1,384	1,627	1,573	-1,018	-559	267
	(%)	10%	11%	9%	-6%	-3%	0.3%
Truck Drivers	(#)	332	729	499	-451	-275	-75
	(%)	13%	25%	14%	-11%	-7%	-0.4%
Welders and Related Machine Operators	(#)	264	320	484	-346	-217	-36
	(%)	13%	14%	18%	-11%	-8%	-0.3%
<b>Total CSC Trades</b>	<b>(#)</b>	<b>12,293</b>	<b>8,647</b>	<b>12,677</b>	<b>-6,342</b>	<b>-3,376</b>	<b>2,753</b>
	<b>(%)</b>	<b>10%</b>	<b>6%</b>	<b>9%</b>	<b>-4%</b>	<b>-2%</b>	<b>0.4%</b>

e = estimation

f = forecast

\* The percentage changes in the final column are calculated as average annual compound growth rates over the sub-period 2012-2016.

Sources: Construction Sector Council; Statistics Canada.

**TABLE 4 LABOUR FORCE CHANGE IN TRADES AND OCCUPATIONS  
IN BRITISH COLUMBIA, 2007-2016 (levels and annual percentage change)**

Trades		2007e	2008f	2009f	2010f	2011f	2012-16f*
Boilermakers	(#)	129	108	116	-33	-36	22
	(%)	12%	9%	9%	-2%	-3%	0.3%
Bricklayers	(#)	113	40	64	29	25	52
	(%)	6%	2%	3%	2%	1%	0.5%
Carpenters	(#)	1,597	717	969	394	321	668
	(%)	6%	3%	4%	1%	1%	0.5%
Concrete Finishers	(#)	153	154	152	6	-25	5
	(%)	10%	9%	8%	0%	-1%	0.0%
Construction Managers	(#)	1,774	1,238	1,540	-84	-458	-720
	(%)	14%	9%	10%	-1%	-3%	-0.9%
Construction Millwrights and Industrial Mechanics (except textile)	(#)	84	78	109	-22	-38	-18
	(%)	12%	10%	12%	-2%	-4%	-0.4%
Contractors and Supervisors	(#)	1,063	1,055	1,314	-61	-367	-334
	(%)	10%	9%	10%	0%	-3%	-0.5%
Crane Operators	(#)	111	87	114	-16	-37	-39
	(%)	14%	10%	12%	-2%	-4%	-0.7%
Drillers and Blasters	(#)	69	157	118	-22	-54	-67
	(%)	13%	26%	16%	-3%	-6%	-1.7%
Electricians (including industrial and power system)	(#)	909	364	714	-34	-109	75
	(%)	10%	4%	7%	0%	-1%	0.1%
Elevator Constructors and Mechanics	(#)	49	8	8	10	13	52
	(%)	8%	1%	1%	2%	2%	1.5%
Floor Covering Installers	(#)	173	42	64	59	63	122
	(%)	6%	1%	2%	2%	2%	0.7%
Gasfitters	(#)	98	63	127	-23	-52	-49
	(%)	14%	8%	15%	-2%	-5%	-1.1%
Glaziers	(#)	85	23	28	21	21	35
	(%)	7%	2%	2%	2%	2%	0.5%
Heavy Equipment Operators (except crane)	(#)	1,334	1,769	1,603	-256	-675	-809
	(%)	16%	18%	14%	-2%	-5%	-1.4%
Heavy-Duty Equipment Mechanics	(#)	157	199	189	-59	-90	-103
	(%)	17%	18%	15%	-4%	-6%	-1.6%
Insulators	(#)	67	31	49	9	9	66
	(%)	7%	3%	5%	1%	1%	1.2%
Ironworkers and Structural Metal Fabricators and Fitters	(#)	147	107	140	-23	-41	-17
	(%)	12%	8%	10%	-1%	-3%	-0.2%
Painters and Decorators	(#)	542	154	233	159	158	300
	(%)	6%	2%	3%	2%	2%	0.6%
Plasterers, Drywall Installers and Finishers, and Lathers	(#)	329	121	156	107	110	262
	(%)	6%	2%	2%	2%	2%	0.8%
Plumbers	(#)	442	171	322	47	-3	108
	(%)	8%	3%	5%	1%	0%	0.3%
Refrigeration and Air Conditioning Mechanics	(#)	105	51	58	0	-10	6
	(%)	10%	4%	5%	0%	-1%	0.1%
Residential and Commercial Installers and Servicers	(#)	229	115	168	36	9	37
	(%)	7%	4%	5%	1%	0%	0.2%
Roofers and Shinglers	(#)	251	93	124	62	55	148
	(%)	7%	3%	3%	2%	1%	0.7%
Sheet Metal Workers	(#)	418	117	190	24	-10	-10
	(%)	12%	3%	5%	1%	0%	0.0%
Steamfitters, Pipefitters and Sprinkler System Installers	(#)	62	53	68	20	38	146
	(%)	4%	3%	4%	1%	2%	1.5%
Tilesetters	(#)	88	21	38	29	30	57
	(%)	6%	1%	2%	2%	2%	0.6%
Trades Helpers and Labourers	(#)	1,432	1,677	1,673	-4	-353	-210
	(%)	10%	10%	9%	0%	-2%	-0.2%
Truck Drivers	(#)	489	641	521	-130	-233	-258
	(%)	17%	19%	13%	-3%	-5%	-1.3%
Welders and Related Machine Operators	(#)	341	283	424	-85	-179	-191
	(%)	15%	11%	15%	-3%	-6%	-1.3%
<b>Total CSC Trades</b>	<b>(#)</b>	<b>12,851</b>	<b>9,743</b>	<b>11,406</b>	<b>160</b>	<b>-1,920</b>	<b>-664</b>
	<b>(%)</b>	<b>9%</b>	<b>7%</b>	<b>7%</b>	<b>0%</b>	<b>-1%</b>	<b>-0.1%</b>

e = estimation

f = forecast

\* The percentage changes in the final column are calculated as average annual compound growth rates over the sub-period 2012-2016.

Sources: Construction Sector Council; Statistics Canada.

From 2011 to 2016 the construction labour force will decline slowly:

- ◆ The estimated labour force declines following the drop in employment with a lag.
- ◆ Displaced construction workers leave for other industries or return to previous provinces of residence.
- ◆ Normal levels of excess supply are restored with the labour force remaining very near a constant level from 2012 to 2016.
- ◆ Demographic trends indicate that a relatively large number of older workers will consider retirement:
  - Recruiting efforts will continue late in the forecast period to replace these retiring workers.
  - Government, industry and contractor human resources strategies can target retaining these older workers by providing an incentive for older workers to gain added skills in areas such as training and supervision that would facilitate deepening and sharing construction skills among employees.

These expected conditions confirm the wisdom of the many career promotion and industry recruiting projects that have been launched by the industry and government. Sustaining this momentum and adding targeted efforts is a natural response to the expected conditions.

## 5. APPRENTICESHIP AND RELATED TRAINING

Labour market conditions noted above confirm the growing need for training facilities, programs and instructors. While apprenticeship provides the traditional and most important source of skilled labour, a need also exists for in-house and specialized programs aimed at new entrants for basic health and safety preparation, equipment and material suppliers, labour groups and industry associations providing training for supervisors/managers and upgrading skills.

The British Columbia Industry Training Authority has provided 2007 data on registrations and completions in apprenticeship programs. Analysis presented here invites a comparison of trends in the numbers of apprenticeship registrations and completions with the apparent needs of the industry.

Table 5 looks at both short- and long-term trends in registrations and completions for the construction trades up to 2007. The total number of registered apprentices in the system grew by 20% in 2007, adding to the 35% gain in 2006. Completions rose 50% after rising 5% last year.

Looking at the longer term, the number of certificates issued in 2007 was above the average number issued from 1998 to 2007. There are also above-average gains in registrations and completions for most key trades.

It will be important to sustain and grow apprenticeship and other training programs over the coming years. As 2010 approaches and major projects are scheduled for completion, the release of skilled trades into the labour market should not be regarded as a signal to ease up on these programs. As noted in the next sections, there will be continuing demand for skilled workers, especially to meet replacement demand as workers retire.

## 6. RETIREMENT DEMAND

The calculation of retirement demand estimates the number and proportion of the workforce in each trade that is expected to retire and be replaced between 2007 and 2016 to sustain the workforce present in 2006.

Table 6 notes the following trades and occupations with an above-average age profile. Retirement demand for the following trades could exceed 3% of the workforce each year later in the forecast period:

- ◆ Boilermakers
- ◆ Bricklayers
- ◆ Construction managers
- ◆ Construction millwrights and industrial mechanics
- ◆ Contractors and supervisors
- ◆ Crane operators
- ◆ Elevator constructors and mechanics
- ◆ Heavy equipment operators
- ◆ Heavy-duty equipment mechanics
- ◆ Tilersetters
- ◆ Truck drivers
- ◆ Welders

The following trades are young and retirement demand rarely exceeds 2% of the workforce in the later period:

- ◆ Concrete finishers
- ◆ Gasfitters
- ◆ Insulators
- ◆ Refrigeration and air conditioning mechanics
- ◆ Roofers and shinglers
- ◆ Trades helpers and labourers

**TABLE 5 APPRENTICESHIP REGISTRATIONS AND COMPLETIONS,  
BRITISH COLUMBIA, 2007**

Trade	Active App. Jan-Dec 2007	% Change in Active App. 2006-07	New App. Jan-Dec 2007	Certificate of App. Issued	Certificate of Qual. Issued	% Change in Certificates of Qual. Issued 2006-07	Red Seal Issued	Average Certificate of App. 1996-07	Average Certificate of Qual. 1996-07	Average Red Seal, 1996-07
Architectural Sheet Metal Worker	72	95%	3	1	1	-75%	0	3	8	0
Bricklayer	243	0%	34	6	10	0%	10	6	9	7
Carpenter	6,398	14%	492	249	325	76%	325	234	308	291
Cement Mason	173	11%	6	2	4	0%	4	5	12	9
Construction Boilermaker	95	0%	0	10	10	0%	10	15	16	16
Construction Formwork Technician	16	-27%	0	0	0	-	0	0	0	0
Domestic/Commercial Gasfitter	294	44%	9	46	0	-	0	40	0	0
Drywall Finisher	55	-4%	4	0	0	-	0	3	17	0
Electrical (construction section)	0	-	0	0	0	-	0	3	0	0
Electrician	6,207	14%	330	518	728	83%	697	374	523	434
Elevator Mechanic	2	-50%	0	2	2	100%	0	6	8	0
Floor Covering Installer	128	-4%	4	15	17	750%	17	12	22	19
Forklift Mechanic	4	-20%	0	1	0	-	0	3	0	0
Glazier	361	38%	22	13	14	-26%	14	19	23	20
Hardwood Floorlayer	25	-14%	1	3	0	-	0	2	0	0
Heat and Frost Insulator	104	3%	3	15	15	400%	15	5	7	5
Heavy-Duty Equipment Mechanic	1,146	11%	75	105	158	55%	157	83	120	106
Hydraulic Crane Operator	0	-	0	0	4	-20%	0	0	6	0
Industrial Electrical Work	0	-	0	0	0	-	0	1	0	0
Industrial Electrician	64	0%	0	0	1	0%	0	0	1	0
Industrial Gasfitter	0	-	0	0	0	-	0	0	0	0
Industrial Instrument Mechanic	198	-3%	7	23	25	9%	25	15	19	17
Ironworker	86	12%	3	10	10	25%	9	15	21	10
Joiner	624	15%	48	18	24	-23%	23	36	41	39
Locksmith	10	-17%	0	0	0	-	0	2	14	0
Metal Fabricator (fitter)	595	7%	23	53	73	74%	73	48	55	51
Millwright	1,092	7%	59	130	168	11%	167	117	174	166
Mobile Crane Operator (construction industry)	67	2%	3	7	13	-28%	14	7	18	16
Oil Burner Mechanic (residential)	7	250%	0	0	0	-	0	0	1	0
Painter and Decorator	340	26%	16	10	20	0%	20	22	40	37
Piledriver and Bridgeworker	133	19%	6	16	18	800%	0	9	13	0
Plasterer	7	-30%	0	0	0	-	0	4	9	0
Plumber	3,169	16%	153	300	320	88%	315	194	220	201
Power Line Technician	198	14%	0	40	43	65%	42	25	56	24
Refrigeration Mechanic	625	16%	26	63	67	26%	67	45	56	48
Reinforcing Steel Installer	133	-12%	13	1	22	0%	0	0	4	0
Residential Building Maintenance Worker	74	12%	0	0	0	-	0	1	1	0
Residential Construction Framing Technician	1,166	38%	222	36	36	260%	0	3	4	0
Residential Steep Roofer	13	160%	0	0	0	-	0	0	5	0
Roofer, Damp and Waterproofing	557	15%	13	46	51	89%	51	37	42	37
Sheet Metal Worker	1,001	17%	36	72	76	7%	75	70	75	70
Sheet Metal Worker (manufacturing)	0	-	0	0	0	-	0	1	0	0
Sprinkler System Installer	488	30%	18	19	22	-12%	22	28	33	29
Steamfitter-Pipefitter	261	-3%	10	22	44	63%	44	20	36	25
Tilesetter	50	-4%	2	1	1	0%	0	4	6	0
Tower Crane Operator	0	-	0	0	0	-	0	0	2	0
Transport Refrigeration Mechanic	7	250%	0	0	1	0%	0	2	2	0
Wall and Ceiling Installer	279	0%	32	6	9	0%	9	13	27	17
Welder – Level 'A'	860	18%	109	14	113	30%	30	16	92	33
Welder – Level 'B'	0	-	0	0	301	18%	5	0	198	15
Welder – Level 'C'	361	0%	152	0	563	30%	0	0	335	0
Winder Electrician	29	26%	4	5	5	25%	5	4	6	3
<b>Totals</b>	<b>27,817</b>	<b>20%</b>	<b>1,938</b>	<b>1,878</b>	<b>3,314</b>	<b>49%</b>	<b>2,245</b>	<b>1,551</b>	<b>2,684</b>	<b>1,745</b>

Source: British Columbia Industry Training Authority.

TABLE 6 RETIREMENT DEMAND IN BRITISH COLUMBIA

Trades	Average Age	Exits from the Labour Force (Retirement Demand)			Retirement Demand as a % of Labour Force (Previous Year)	
		2007	2007	2016	Total 2007-16	2007 (%)
Boilermakers	43	12	27	225	1.1	3.1
Bricklayers	44	50	48	478	2.7	3.5
Carpenters	42	452	583	5,153	1.8	2.8
Concrete Finishers	39	23	27	247	1.4	1.9
Construction Managers	46	284	380	3,294	2.2	3.9
Construction Millwrights and Industrial Mechanics (except textile)	44	18	18	197	2.6	3.4
Contractors and Supervisors	45	211	298	2,586	2.0	3.6
Crane Operators	45	16	22	199	2.0	3.6
Drillers and Blasters	41	8	12	105	1.6	2.7
Electricians (including industrial and power system)	39	148	186	1,652	1.6	2.3
Elevator Constructors and Mechanics	43	12	16	149	2.0	3.5
Floor Covering Installers	40	43	56	500	1.4	2.2
Gasfitters	40	12	11	110	1.8	1.9
Glaziers	41	15	27	215	1.3	2.8
Heavy Equipment Operators (except crane)	43	173	207	1,967	2.1	3.2
Heavy-Duty Equipment Mechanics	44	18	26	240	1.9	3.6
Insulators	37	7	15	113	0.8	1.9
Ironworkers and Structural Metal Fabricators and Fitters	40	23	28	245	1.9	2.8
Painters and Decorators	40	142	179	1,561	1.6	2.5
Plasterers, Drywall Installers and Finishers, and Lathers	40	89	117	1,028	1.5	2.3
Plumbers	39	87	103	968	1.5	2.1
Refrigeration and Air Conditioning Mechanics	39	11	18	137	1.0	1.9
Residential and Commercial Installers and Servicers	40	52	57	504	1.7	2.2
Roofers and Shinglers	38	38	57	454	1.1	1.8
Sheet Metal Workers	40	38	71	550	1.1	2.4
Steamfitters, Pipefitters and Sprinkler System Installers	40	21	37	306	1.3	2.7
Tilesetters	44	35	39	354	2.2	3.2
Trades Helpers and Labourers	35	152	221	1,869	1.0	1.7
Truck Drivers	43	56	72	683	2.0	3.3
Welders and Related Machine Operators	41	36	54	478	1.6	3.0
<b>Total CSC Trades</b>	<b>41</b>	<b>2,280</b>	<b>3,013</b>	<b>26,578</b>	<b>1.7</b>	<b>2.7</b>

Sources: Construction Sector Council; Statistics Canada.

Other trades fall close to the average age profile for all construction workers.

The age distribution patterns are combined with historical trends of exit (and mortality) for the industry. This analysis highlights work-related factors that are naturally associated with occupations, including the need for managers, supervisors and foremen to have more experience, and the reality that trades such as roofers and shinglers, helpers and labourers and floor covering installers are physically challenging for older workers.

As the expected number of exits grows later in the forecast period, it is possible for retirement demand to actually exceed the demand for new workers related to additional construction activity. These demographic trends will gradually erode the available workforce and will create labour shortages in the face of what might now be considered moderate demand.

## 7. MARKET RANKINGS AND MOBILITY

This section draws together industry input and analysis of labour requirements, supply features, retirements and training systems to create a summary view of market conditions.

### Rankings

An annual measure of regional market conditions is shown for each trade and occupation in the form of a ranking from 1 (excess supply) to 5 (intense competition for qualified workers). Each ranking represents conditions for a construction trade or occupation in the province. Each ranking is based on four measures:

- ◆ The rate of excess supply at the seasonal peak of activity
- ◆ The annual change in employment
- ◆ Retirement demand as a percentage of the workforce
- ◆ Industry consultation

Each of these measures is assigned a ranking based on market conditions from the employer's point of view.

When market conditions tighten, labour shortages are rarely observed directly. It is common, however, to observe symptoms of a shortage, such as changes in market conditions, including delays in projects, increases in overtime payments, modified hiring practices and concerns about safety and quality.

At the end of this section, the analysis considers how provincial and regional market assessments might be altered by mobility. New workers entering a tight market could potentially ease conditions and reduce the ranking. Similarly, workers may leave a weak market to seek jobs elsewhere.

Figure 5 provides a broad overview of the construction labour market in the province.<sup>7</sup> It tracks total employment, the labour force and the rate of excess supply in the trades and occupations included in the CSC LMI system.

Highlights of local construction labour market conditions over the 2001–2007 period include the following:

- ◆ Employment growth exceeded labour force growth and the capacity of the training system to teach needed skills.
- ◆ Excess supply dropped to record low levels in 2006 and 2007. Measured at the summer peak, this suggests that needed workers were not available.
- ◆ Large numbers of workers were drawn into the British Columbia construction industry.

The first forecast period, 2008–2010, shows the following:

- ◆ The surge in employment in the engineering and industrial trades during 2008 and 2009 drives rates even lower.
- ◆ The sudden 4% drop in overall employment in 2010 drives excess supply up over 4% in that year.
- ◆ Excess supply jumps 8% or more for some of the industrial and engineering construction trades.

The last forecast period, 2011–2016, will be characterized by excess supply rates that rise very slowly from the 2010 levels and then recede slowly at the end of the period.

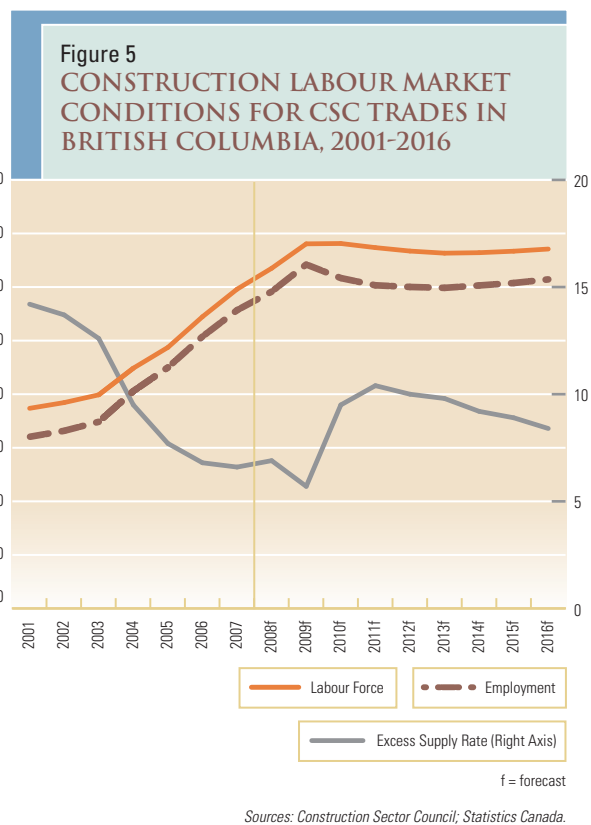


Table 7 draws together all the analysis into a regional ranking with comments on the specific conditions for individual trades and occupations. Rankings include the results of consultations with contractors and the building trades unions on market conditions for 2007 and 2008. The views of the LMI Committee are also included in the rankings.

These consultations included a report on conditions across union dispatch centres. Most locals reported that they have been able to fill orders for workers. In some cases respondents noted that workers would travel to jobs in other areas if incentives for mobility were improved.

In another survey of contractors, results showed 84% of employers had difficulty finding trades people. The proportion of respondents reporting difficulties declines to 58% for supervisors and 50% for managers and general labourers.

7 Readers will notice the excess supply rate in Figure 5 is higher than the average unemployment rate reported by Statistics Canada's Labour Force Survey for the construction industry as a whole. This occurs because the 31 trades and occupations selected for the CSC LMI system do not represent the entire construction industry workforce. About one third to one quarter of the construction workforce does not work on job sites (e.g., estimators, office support, engineers, managers) and this group of workers faces lower seasonal fluctuations in employment. As a consequence, the reported unemployment rate for that group is well below the rates reported here for the CSC trades and occupations. The CSC LMI system is managed to broadly reconcile these differences and assure that over the long term the CSC measures are consistent with Statistics Canada trends.

## MARKET RANKINGS

- 1 Workers meeting employer qualifications are available in local markets to meet an increase in demand at the current offered rate of compensation and other current working conditions. Excess supply is apparent and there is a risk of losing workers to other markets.
- 2 Workers meeting employer qualifications are available in local or adjacent markets to meet an increase in demand at the current offered rate of compensation and other working conditions.
- 3 The availability of workers meeting employer qualifications in the local market may be limited by large projects, plant shutdowns or other short-term increases in demand. Similar or weaker conditions exist in adjacent markets so that mobility is an option. Employers may need to compete to attract needed workers. Established patterns of recruiting and mobility are sufficient to meet job requirements.
- 4 Workers meeting employer qualifications are generally not available in local and adjacent markets to meet any increase. Employers will need to compete to attract additional workers. Recruiting and mobility may extend beyond traditional sources and practices.
- 5 Needed workers meeting employer qualifications are not available in local or adjacent markets to meet current demand so that projects or production may be delayed or deferred. There is excess demand, competition is intense and recruiting reaches to remote markets.

**TABLE 7 MARKET RANKINGS AND COMMENTS FOR TRADES AND OCCUPATIONS IN BRITISH COLUMBIA**

Trades	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Boilermakers	4	3	5	3	3	4	3	3	4	4
<i>Comments: Industrial projects expand in 2009 and then begin a decline in 2010. The age profile for this trade is well above average and retirement demand will put pressure on recruiting and markets in the last years of the forecast period.</i>										
Bricklayers	4	3	4	4	4	4	3	4	4	4
<i>Comments: Residential and commercial building dips slightly in 2008 and resumes manageable growth later in the projection. Industrial activity remains strong until 2010. The age profile for this trade is well above average and retirement demand will put pressure on recruiting and markets toward the end of the forecast period.</i>										
Carpenters	5	4	4	4	4	4	3	3	4	4
<i>Comments: Housing starts and commercial building dip slightly in 2008 and this trade is kept busy with work in other sectors until 2010. Retirement demand is average and does not challenge traditional recruiting processes until late in the forecast period.</i>										
Concrete Finishers	4	4	4	3	3	3	3	3	3	3
<i>Comments: Residential and commercial building dip slightly in 2008 and this trade is kept busy with work in other sectors until 2010. This trade has a young age profile. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period. New training capacity is being ramped up to meet demand.</i>										
Construction Managers	5	5	5	4	4	4	3	3	4	4
<i>Comments: Industrial and engineering projects expand from 2007 to 2009 and then begin a decline in 2010. Experienced construction managers are hard to find. The BC LMI Committee raised the ranking from 2007 to 2012 to reflect these unique conditions. The age profile for this occupation is well above average and retirement demand will put pressure on recruiting and markets in the last years of the forecast period.</i>										
Construction Millwrights and Industrial Mechanics (except textile)	4	4	5	3	3	3	4	3	3	4
<i>Comments: Industrial projects expand from 2007 to 2009 and then begin a decline in 2010. The age profile for this occupation is well above average and retirement demand will put pressure on recruiting and markets in the last years of the forecast period.</i>										
Contractors and Supervisors	5	5	5	4	4	4	3	3	3	4
<i>Comments: Industrial and engineering projects expand from 2007 to 2009 and then begin a decline in 2010. Experienced construction supervisors are hard to find. The BC LMI Committee raised the ranking from 2007 to 2012 to reflect these unique conditions. The age profile for this occupation is well above average and retirement demand will put pressure on recruiting and markets in the last years of the forecast period.</i>										
Crane Operators	4	5	5	3	3	3	3	3	4	4
<i>Comments: Industrial and engineering projects expand from 2007 to 2009 and then begin a decline in 2010. The age profile for this occupation is well above average and retirement demand will put pressure on recruiting and markets in the last years of the forecast period.</i>										
Drillers and Blasters – Surface Mining, Quarrying and Construction	4	4	5	2	2	3	3	3	4	4
<i>Comments: Engineering and mining projects expand from 2007 to 2009 and then begin a decline in 2010. The age profile for this occupation is close to average and retirement demand will put pressure on recruiting and markets in the last years of the forecast period.</i>										
Electricians (including industrial and power system)	4	4	4	3	4	4	3	3	3	3
<i>Comments: Housing starts and commercial building dip slightly in 2008 and this trade is kept busy with work in other sectors until 2010. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period.</i>										
Elevator Constructors and Mechanics	5	4	4	4	4	4	4	4	4	4
<i>Comments: Residential and commercial building dip slightly in 2008 and resume a manageable growth later in the projection. The age profile for this trade is well above average and retirement demand will put pressure on recruiting and markets toward the end of the forecast period.</i>										
Floor Covering Installers	5	4	4	4	4	4	3	3	3	3
<i>Comments: Housing starts and commercial building dip slightly in 2008. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period.</i>										
Gasfitters	4	4	5	2	3	3	3	3	3	3
<i>Comments: This group is linked to industrial, commercial and residential projects that expand from 2007 to 2009 and then begin a decline in 2010. The age profile for this occupation is below average and retirement demand will not put pressure on recruiting and markets later in the forecast period.</i>										

Trades	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Glaziers	5	4	4	4	4	4	3	3	4	4
<i>Comments: Housing starts and commercial building dip slightly in 2008 and resume a manageable growth path later in the projection. The age profile for this trade is average and retirement demand will put pressure on recruiting and markets toward the end of the forecast period. New training capacity is being ramped up to meet demand.</i>										
Heavy Equipment Operators (except crane)	4	5	5	2	2	3	3	3	3	3
<i>Comments: Industrial and engineering projects expand from 2007 to 2009 and then begin a decline in 2010. The age profile for this occupation is well above average and retirement demand will put pressure on recruiting and markets in the last years of the forecast period.</i>										
Heavy-Duty Equipment Mechanics	4	5	5	2	3	3	3	4	4	4
<i>Comments: Industrial and engineering projects expand from 2007 to 2009 and then begin a decline in 2010. The age profile for this occupation is well above average and retirement demand will put pressure on recruiting and markets in the last years of the forecast period.</i>										
Insulators	5	4	5	4	3	3	3	4	4	4
<i>Comments: Large engineering and industrial projects will exhaust the skilled work force during the next years. More traditional recruiting conditions will return after the big projects end in 2010. This group has a younger age profile.</i>										
Ironworkers and Structural Metal Fabricators and Fitters	4	4	5	3	3	4	3	3	4	4
<i>Comments: Large engineering and industrial projects will exhaust the skilled work force during the next years. Markets are more balanced after the big projects end in 2010. This group has an average age profile and retirement demand will tighten markets late in the forecast period. Market conditions for the trade differ across shop workers, rebar and other areas of work.</i>										
Painters and Decorators	5	4	4	4	4	4	3	3	3	3
<i>Comments: Housing starts and commercial building dip slightly in 2008. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period.</i>										
Plasterers, Drywall Installers and Finishers, and Lathers	5	5	5	5	4	4	3	3	3	3
<i>Comments: Housing starts and commercial building dip slightly in 2008. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period.</i>										
Plumbers	5	4	5	4	4	4	3	3	3	3
<i>Comments: Housing starts and commercial building dip slightly in 2008 and this trade is kept busy with work in other sectors until 2010. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period. New training capacity is being ramped up to meet demand.</i>										
Refrigeration and Air Conditioning Mechanics	4	4	5	4	3	3	3	3	3	3
<i>Comments: Housing starts and commercial building dip slightly in 2008 and this trade is kept busy with work in other sectors until 2010. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period.</i>										
Residential and Commercial Installers and Servicers	5	4	4	4	4	4	3	3	3	3
<i>Comments: Housing starts and commercial building dip slightly in 2008. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period.</i>										
Roofers and Shinglers	4	4	4	4	3	3	3	3	3	3
<i>Comments: Housing starts and commercial building dip slightly in 2008. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period.</i>										
Sheet Metal Workers	4	4	4	3	3	3	3	3	3	3
<i>Comments: Housing starts and commercial building dip slightly in 2008. Retirement demand is below average and does not challenge traditional recruiting processes later in the forecast period.</i>										
Steamfitters, Pipefitters and Sprinkler System Installers	4	4	4	4	4	4	3	3	3	4
<i>Comments: This trade is heavily oriented to engineering and industrial work, and projects will limit the skilled work force during the next years. Markets are more balanced after the big projects end in 2010. This group has an average age profile and training and recruiting for retirement demand will be an issue late in the forecast period. New training capacity is being ramped up to meet demand.</i>										
Tilesetters	5	4	4	4	4	4	4	4	4	4
<i>Comments: Residential and commercial building dip slightly in 2008. Retirement demand is above average and will challenge traditional recruiting processes later in the forecast period. New training capacity is being ramped up to meet demand.</i>										
Trades Helpers and Labourers	4	4	4	3	3	3	3	3	3	3
<i>Comments: Engineering and industrial projects expand from 2007 to 2009 and then begin a decline in 2010. The age profile for this occupation is younger than average and retirement demand will not be an issue late in the forecast period.</i>										
Truck Drivers	4	5	5	2	2	3	3	3	3	3
<i>Comments: This trade is heavily oriented to engineering and industrial work, and projects will limit the skilled work force during the next years. Markets are more balanced after the big projects end in 2010. This group has an older-than-average age profile and training and recruiting for retirement demand will be an issue late in the forecast period.</i>										
Welders and Related Machine Operators	4	5	5	2	2	3	3	4	4	4
<i>Comments: This trade is heavily oriented to engineering and industrial work and projects will exhaust the skilled work force during the next years. More traditional recruiting conditions return after the big projects end in 2010. This group has an older-than-average age profile and training and recruiting for retirement demand will be an issue late in the forecast period.</i>										

Source: Construction Sector Council.

## Mobility

Rankings noted on the previous pages refer to conditions in the British Columbia construction labour markets before any allowance is included for mobility across other industries or provinces.

Two specific situations can be evaluated. First, labour markets for the trades are assessed in industries outside construction, but in British Columbia. Second, the rankings for each trade are assessed in other provinces. In some situations and market conditions, the CSC LMI system identifies the potential for mobility. Cases where this potential mobility is likely to actually balance markets (workers actually relocate) are described below.<sup>8</sup>

Mobility across industries in British Columbia is not likely to change the rankings for trades and occupations over the forecast period. Employment in the CSC trades working outside construction in the 2008–2010 period is generally quite weak and often grows less than 1%. This implies weak labour markets, but there are only a small number of workers and excess supply rates in these markets are already low. These circumstances likely relate to the ongoing weakness in the forestry and manufacturing industries. For construction employers to take advantage of the situation, the skills acquired in manufacturing and forestry must be close to those needed in construction.

A similar situation exists regarding the potential for regional mobility. Workers are more likely to move when the following conditions exist:

- ◆ Job opportunities are available outside their province.
- ◆ A significant number of workers are unemployed locally.<sup>9</sup>
- ◆ There is a tradition of past mobility for the trades.

British Columbia shares a common profile with other provinces as some big industrial and engineering projects continue to hire industrial and engineering trades until 2009 and then projects end in 2010. Mobility across provincial labour markets will be muted in the early years of the scenario. In most regions, big employment gains in 2009 and very limited excess supply, even in 2010, leave very tight markets. In this environment, very few workers would be expected to leave British Columbia, at least until markets loosen further.

By 2013, employment in the trades in British Columbia has been weak or declining for several years, excess supply is rising and recruiting conditions approach normal. Risks of out-migration and workers returning to their province of residence may rise. Certainly the Alberta scenario anticipates a revival in projects at that time and British Columbia would be a logical focus for recruiting.

A more detailed description of the potential for regional mobility among the provinces will be provided in the national summary.

<sup>8</sup> There are many circumstances when potential mobility will not lead to actual market changes. For example, the numbers of available workers may be small, thus reducing the likelihood that anyone will move. In other cases, workers may lack needed skills or experience.

<sup>9</sup> Research funded by the CSC shows that the strongest motivator for mobility is a weak market in the region of origin. This suggests that mobility in the CSC LMI system is more likely to occur when the market rankings are 1 or 2 in the source regions for workers. This finding implies lower levels of regional mobility in the current national labour markets as most of the “weaker” conditions occur in markets that have reached a balance. Few construction labour markets in Canada have excess supply conditions.

## APPENDIX A – DETAILED TABLES

### LABOUR FORCE, EMPLOYMENT AND EXCESS SUPPLY RATES FOR CONSTRUCTION TRADES, BRITISH COLUMBIA

Trades	2007e	2008f	2009f	2010f	2011f	2012f	2013f	2014f	2015f	2016f
<b>Total CSC Trades</b>										
Labour Force	149,014	158,757	170,163	170,323	168,403	166,793	165,807	166,037	166,732	167,740
Change	12,851	9,743	11,406	160	-1,920	-1,610	-986	229	696	1,007
% Change	9.4	6.5	7.2	0.1	-1.1	-1.0	-0.6	0.1	0.4	0.6
Employment	139,213	147,860	160,537	154,195	150,819	150,040	149,622	150,741	151,881	153,571
Change	12,293	8,647	12,677	-6,342	-3,376	-779	-418	1,120	1,140	1,690
% Change	9.7	6.2	8.6	-4.0	-2.2	-0.5	-0.3	0.7	0.8	1.1
Construction	115,320	123,358	135,610	128,390	123,964	122,256	120,960	121,189	121,475	122,345
Maintenance	23,893	24,501	24,927	25,805	26,855	27,783	28,661	29,553	30,406	31,227
Excess Supply Rate %	6.6	6.9	5.7	9.5	10.4	10.0	9.8	9.2	8.9	8.4
<b>Boilermakers</b>										
Labour Force	1,199	1,307	1,423	1,390	1,354	1,328	1,325	1,342	1,360	1,376
Change	129	108	116	-33	-36	-26	-3	17	18	16
% Change	12.0	9.0	8.9	-2.3	-2.6	-1.9	-0.2	1.3	1.4	1.2
Employment	1,082	1,159	1,333	1,235	1,198	1,184	1,196	1,225	1,244	1,262
Change	89	76	175	-98	-38	-14	12	29	19	18
% Change	9.0	7.1	15.1	-7.4	-3.0	-1.2	1.0	2.4	1.6	1.5
Construction	664	731	899	788	717	688	687	698	703	708
Maintenance	418	427	434	447	480	496	509	527	541	555
Excess Supply Rate %	9.7	11.3	6.3	11.2	11.6	10.9	9.8	8.7	8.5	8.3
<b>Bricklayers</b>										
Labour Force	1,922	1,961	2,025	2,055	2,079	2,094	2,098	2,103	2,115	2,132
Change	113	40	64	29	25	15	4	5	11	17
% Change	6.2	2.1	3.3	1.5	1.2	0.7	0.2	0.3	0.5	0.8
Employment	1,787	1,777	1,862	1,872	1,886	1,900	1,899	1,907	1,924	1,950
Change	133	-10	85	10	14	14	-1	8	17	27
% Change	8.0	-0.6	4.8	0.5	0.8	0.7	-0.1	0.4	0.9	1.4
Construction	1,383	1,361	1,438	1,432	1,430	1,427	1,411	1,404	1,406	1,418
Maintenance	405	416	425	440	456	472	488	503	518	532
Excess Supply Rate %	7.0	9.4	8.0	8.9	9.3	9.3	9.5	9.4	9.0	8.5
<b>Carpenters</b>										
Labour Force	26,998	27,715	28,684	29,078	29,399	29,583	29,618	29,681	29,831	30,067
Change	1,597	717	969	394	321	183	35	64	150	236
% Change	6.3	2.7	3.5	1.4	1.1	0.6	0.1	0.2	0.5	0.8
Employment	25,117	25,209	26,418	26,478	26,648	26,823	26,788	26,899	27,129	27,502
Change	1,882	92	1,208	61	170	174	-35	111	230	373
% Change	8.1	0.4	4.8	0.2	0.6	0.7	-0.1	0.4	0.9	1.4
Construction	19,593	19,524	20,613	20,462	20,395	20,348	20,102	20,003	20,032	20,210
Maintenance	5,525	5,685	5,804	6,016	6,253	6,475	6,685	6,895	7,097	7,292
Excess Supply Rate %	7.0	9.0	7.9	8.9	9.4	9.3	9.6	9.4	9.1	8.5

Trades	2007e	2008f	2009f	2010f	2011f	2012f	2013f	2014f	2015f	2016f
<b>Concrete Finishers</b>										
Labour Force	1,765	1,919	2,071	2,077	2,052	2,033	2,024	2,031	2,043	2,056
Change	153	154	152	6	-25	-19	-9	7	12	14
% Change	9.5	8.7	7.9	0.3	-1.2	-0.9	-0.5	0.3	0.6	0.7
Employment	1,660	1,798	1,944	1,861	1,816	1,809	1,808	1,826	1,842	1,863
Change	150	138	146	-83	-45	-7	-1	18	16	21
% Change	9.9	8.3	8.1	-4.3	-2.4	-0.4	-0.1	1.0	0.9	1.1
Construction	1,280	1,410	1,552	1,455	1,396	1,375	1,360	1,365	1,368	1,376
Maintenance	380	388	392	406	420	434	447	461	474	487
Excess Supply Rate %	5.9	6.3	6.1	10.4	11.5	11.0	10.7	10.1	9.8	9.4
<b>Construction Managers</b>										
Labour Force	14,421	15,659	17,199	17,115	16,657	16,269	16,013	15,938	15,919	15,938
Change	1,774	1,238	1,540	-84	-458	-388	-256	-75	-19	18
% Change	14.0	8.6	9.8	-0.5	-2.7	-2.3	-1.6	-0.5	-0.1	0.1
Employment	13,973	15,188	16,929	15,813	15,123	14,858	14,713	14,775	14,816	14,915
Change	1,433	1,215	1,741	-1,115	-691	-265	-145	61	41	99
% Change	11	9	12	-7	-4	-2	-1	0	0	1
Excess Supply Rate %	3.1	3.0	1.6	7.6	9.2	8.7	8.1	7.3	6.9	6.4
<b>Construction Millwrights and Industrial Mechanics (except textile)</b>										
Labour Force	795	873	981	959	921	893	883	889	897	904
Change	84	78	109	-22	-38	-29	-10	6	8	7
% Change	11.8	9.8	12.4	-2.3	-3.9	-3.1	-1.1	0.7	0.9	0.8
Employment	722	797	931	845	800	782	785	801	811	820
Change	69	75	135	-87	-45	-18	3	16	9	9
% Change	10.5	10.4	16.9	-9.3	-5.3	-2.2	0.4	2.0	1.2	1.1
Construction	555	627	759	667	609	585	583	592	595	599
Maintenance	166	170	172	178	191	197	203	209	215	220
Excess Supply Rate %	9.2	8.7	5.1	11.9	13.2	12.4	11.1	9.9	9.6	9.3
<b>Contractors and Supervisors</b>										
Labour Force	11,712	12,768	14,082	14,022	13,654	13,360	13,204	13,207	13,253	13,322
Change	1,063	1,055	1,314	-61	-367	-295	-156	3	46	68
% Change	10.0	9.0	10.3	-0.4	-2.6	-2.2	-1.2	0.0	0.3	0.5
Employment	11,330	12,484	13,968	13,016	12,447	12,253	12,196	12,306	12,388	12,508
Change	1,084	1,154	1,484	-952	-569	-194	-57	110	82	120
% Change	10.6	10.2	11.9	-6.8	-4.4	-1.6	-0.5	0.9	0.7	1.0
Construction	10,030	11,149	12,607	11,606	10,984	10,739	10,633	10,695	10,730	10,804
Maintenance	1,300	1,335	1,361	1,410	1,462	1,514	1,563	1,611	1,658	1,704
Excess Supply Rate %	3.3	2.2	0.8	7.2	8.8	8.3	7.6	6.8	6.5	6.1
<b>Crane Operators</b>										
Labour Force	895	983	1,097	1,081	1,043	1,016	1,001	1,000	1,002	1,005
Change	111	87	114	-16	-37	-27	-15	-1	2	2
% Change	14.1	9.8	11.6	-1.5	-3.5	-2.6	-1.4	-0.1	0.2	0.2
Employment	824	926	1,036	957	909	893	888	897	901	907
Change	90	103	109	-79	-48	-16	-5	9	4	6
% Change	12.2	12.4	11.8	-7.6	-5.0	-1.7	-0.6	1.0	0.5	0.7
Construction	760	861	970	889	838	820	813	819	822	826
Maintenance	64	65	66	68	71	73	75	77	80	82
Excess Supply Rate %	8.0	5.7	5.6	11.4	12.9	12.1	11.3	10.4	10.1	9.7
<b>Drillers and Blasters</b>										
Labour Force	607	764	882	860	806	766	744	740	740	740
Change	69	157	118	-22	-54	-40	-22	-4	-1	0
% Change	12.8	25.8	15.5	-2.5	-6.3	-4.9	-2.9	-0.5	-0.1	0.1
Employment	573	751	867	756	688	663	654	662	664	668
Change	67	178	116	-110	-68	-25	-9	8	2	4
% Change	13.3	31.0	15.4	-12.7	-9.0	-3.7	-1.4	1.2	0.4	0.5
Construction	566	744	859	749	680	655	646	653	656	659
Maintenance	7	7	7	7	8	8	8	8	9	9
Excess Supply Rate %	5.6	1.7	1.8	12.1	14.6	13.5	12.1	10.6	10.2	9.8

Trades	2007e	2008f	2009f	2010f	2011f	2012f	2013f	2014f	2015f	2016f
<b>Electricians</b>										
Labour Force	10,442	10,807	11,521	11,487	11,378	11,296	11,266	11,307	11,373	11,452
Change	909	364	714	-34	-109	-81	-30	41	66	79
% Change	9.5	3.5	6.6	-0.3	-0.9	-0.7	-0.3	0.4	0.6	0.7
Employment	9,664	9,909	10,776	10,440	10,267	10,244	10,255	10,350	10,441	10,563
Change	854	246	867	-336	-173	-23	12	95	91	121
% Change	9.7	2.5	8.7	-3.1	-1.7	-0.2	0.1	0.9	0.9	1.2
Construction	7,676	7,877	8,714	8,307	8,052	7,954	7,894	7,916	7,938	7,992
Maintenance	1,988	2,033	2,062	2,133	2,215	2,290	2,362	2,434	2,504	2,571
Excess Supply Rate %	7.5	8.3	6.5	9.1	9.8	9.3	9.0	8.5	8.2	7.8
<b>Elevator Constructors and Mechanics</b>										
Labour Force	645	653	661	671	684	697	707	717	728	737
Change	49	8	8	10	13	12	10	10	10	10
% Change	8.3	1.2	1.3	1.5	1.9	1.8	1.5	1.5	1.4	1.3
Employment	604	604	617	629	641	654	663	674	684	696
Change	44	1	12	12	12	13	9	11	11	11
% Change	7.9	0.1	2.0	2.0	1.9	2.1	1.4	1.6	1.6	1.7
Construction	287	282	291	293	293	295	293	293	293	294
Maintenance	317	323	325	336	347	359	370	381	391	402
Excess Supply Rate %	6.4	7.4	6.8	6.4	6.4	6.1	6.2	6.1	6.0	5.7
<b>Floor Covering Installers</b>										
Labour Force	3,180	3,223	3,286	3,345	3,408	3,451	3,466	3,478	3,499	3,530
Change	173	42	64	59	63	42	16	12	21	31
% Change	5.7	1.3	2.0	1.8	1.9	1.2	0.5	0.3	0.6	0.9
Employment	2,975	2,932	3,024	3,082	3,133	3,170	3,170	3,183	3,213	3,260
Change	212	-43	92	58	52	36	1	12	30	47
% Change	7.7	-1.4	3.1	1.9	1.7	1.2	0.0	0.4	0.9	1.5
Construction	2,208	2,144	2,221	2,250	2,271	2,277	2,249	2,233	2,235	2,255
Maintenance	767	788	803	832	862	892	921	950	978	1,004
Excess Supply Rate %	6.5	9.0	8.0	7.9	8.1	8.1	8.5	8.5	8.2	7.6
<b>Gasfitters</b>										
Labour Force	792	855	982	959	907	868	852	853	856	859
Change	98	63	127	-23	-52	-40	-16	1	3	3
% Change	14.1	7.9	14.9	-2.4	-5.4	-4.4	-1.8	0.1	0.4	0.4
Employment	729	784	946	844	780	754	754	765	771	777
Change	79	55	161	-101	-64	-26	0	12	6	6
% Change	12.2	7.5	20.6	-10.7	-7.6	-3.4	0.0	1.6	0.7	0.8
Construction	701	756	917	814	749	722	721	731	736	741
Maintenance	28	29	29	30	31	32	33	34	35	36
Excess Supply Rate %	7.9	8.3	3.7	12.0	14.0	13.1	11.5	10.2	9.9	9.6
<b>Glaziers</b>										
Labour Force	1,250	1,273	1,301	1,321	1,342	1,356	1,360	1,364	1,369	1,377
Change	85	23	28	21	21	14	4	3	6	8
% Change	7.3	1.8	2.2	1.6	1.6	1.1	0.3	0.2	0.4	0.6
Employment	1,180	1,162	1,198	1,216	1,231	1,244	1,243	1,247	1,255	1,270
Change	102	-19	36	18	15	13	-1	4	8	14
% Change	9.4	-1.6	3.1	1.5	1.3	1.1	-0.1	0.3	0.7	1.1
Construction	958	933	966	975	982	986	977	973	973	979
Maintenance	223	228	232	241	249	258	266	274	282	290
Excess Supply Rate %	5.6	8.7	7.9	8.0	8.3	8.3	8.6	8.5	8.3	7.8
<b>Heavy Equipment Operators (except crane)</b>										
Labour Force	9,603	11,372	12,975	12,719	12,044	11,546	11,265	11,219	11,219	11,236
Change	1,334	1,769	1,603	-256	-675	-499	-281	-46	0	17
% Change	16.1	18.4	14.1	-2.0	-5.3	-4.1	-2.4	-0.4	0.0	0.1
Employment	8,800	11,092	12,641	11,226	10,359	10,046	9,926	10,036	10,079	10,143
Change	985	2,292	1,549	-1,416	-867	-313	-120	109	43	64
% Change	12.6	26.0	14.0	-11.2	-7.7	-3.0	-1.2	1.1	0.4	0.6
Construction	8,442	10,724	12,267	10,838	9,955	9,628	9,495	9,591	9,621	9,673
Maintenance	359	368	374	388	404	418	431	445	457	470
Excess Supply Rate %	8.4	2.5	2.6	11.7	14.0	13.0	11.9	10.5	10.2	9.7

Trades	2007e	2008f	2009f	2010f	2011f	2012f	2013f	2014f	2015f	2016f
<b>Heavy-Duty Equipment Mechanics</b>										
Labour Force	1,090	1,289	1,479	1,420	1,330	1,267	1,233	1,227	1,226	1,227
Change	157	199	189	-59	-90	-63	-34	-6	-1	1
% Change	16.8	18.3	14.7	-4.0	-6.3	-4.7	-2.7	-0.5	-0.1	0.1
Employment	989	1,238	1,424	1,258	1,156	1,118	1,104	1,117	1,121	1,127
Change	114	249	186	-165	-102	-38	-13	12	4	6
% Change	13.0	25.2	15.0	-11.6	-8.1	-3.3	-1.2	1.1	0.4	0.6
Construction	980	1,229	1,414	1,248	1,146	1,107	1,093	1,105	1,109	1,115
Maintenance	9	9	9	10	10	10	11	11	12	12
Excess Supply Rate %	9.3	4.0	3.7	11.4	13.1	11.8	10.4	9.0	8.6	8.1
<b>Insulators</b>										
Labour Force	973	1,005	1,053	1,062	1,071	1,079	1,090	1,106	1,122	1,137
Change	67	31	49	9	9	8	11	16	16	15
% Change	7.4	3.2	4.8	0.8	0.9	0.7	1.0	1.5	1.5	1.3
Employment	913	934	996	981	987	997	1,009	1,029	1,046	1,062
Change	70	20	62	-15	6	10	12	20	16	17
% Change	8.2	2.2	6.7	-1.5	0.7	1.0	1.2	2.0	1.6	1.6
Construction	472	484	541	512	493	486	484	487	489	491
Maintenance	441	449	455	469	494	511	525	542	557	571
Excess Supply Rate %	6.2	7.1	5.4	7.6	7.8	7.6	7.4	7.0	6.8	6.5
<b>Ironworkers and Structural Metal Fabricators and Fitters</b>										
Labour Force	1,358	1,464	1,604	1,581	1,540	1,511	1,499	1,505	1,514	1,524
Change	147	107	140	-23	-41	-29	-12	6	9	9
% Change	12.2	7.8	9.5	-1.4	-2.6	-1.9	-0.8	0.4	0.6	0.6
Employment	1,257	1,366	1,523	1,426	1,374	1,359	1,360	1,378	1,391	1,405
Change	123	108	157	-96	-52	-15	1	18	12	14
% Change	10.8	8.6	11.5	-6.3	-3.6	-1.1	0.1	1.4	0.9	1.0
Construction	1,006	1,109	1,263	1,158	1,093	1,068	1,061	1,070	1,073	1,079
Maintenance	251	256	259	268	282	291	299	309	317	326
Excess Supply Rate %	7.4	6.7	5.1	9.8	10.8	10.1	9.3	8.4	8.2	7.8
<b>Painters and Decorators</b>										
Labour Force	9,176	9,331	9,563	9,723	9,880	9,982	10,015	10,043	10,097	10,181
Change	542	154	233	159	158	101	33	28	55	83
% Change	6.3	1.7	2.5	1.7	1.6	1.0	0.3	0.3	0.5	0.8
Employment	8,537	8,433	8,751	8,870	8,986	9,074	9,071	9,105	9,185	9,314
Change	629	-104	318	120	116	88	-3	34	80	129
% Change	7.9	-1.2	3.8	1.4	1.3	1.0	0.0	0.4	0.9	1.4
Construction	6,530	6,370	6,647	6,690	6,726	6,734	6,655	6,614	6,621	6,680
Maintenance	2,007	2,063	2,103	2,180	2,260	2,340	2,416	2,491	2,564	2,635
Excess Supply Rate %	7.0	9.6	8.5	8.8	9.0	9.1	9.4	9.3	9.0	8.5
<b>Plasterers, Drywall Installers and Finishers, and Lathers</b>										
Labour Force	6,315	6,436	6,591	6,699	6,809	6,885	6,920	6,953	7,003	7,070
Change	329	121	156	107	110	77	35	33	50	67
% Change	5.5	1.9	2.4	1.6	1.6	1.1	0.5	0.5	0.7	1.0
Employment	5,846	5,826	6,028	6,110	6,194	6,264	6,275	6,312	6,377	6,474
Change	414	-21	203	82	84	70	11	37	66	96
% Change	7.6	-0.4	3.5	1.4	1.4	1.1	0.2	0.6	1.0	1.5
Construction	4,127	4,064	4,237	4,255	4,272	4,276	4,223	4,197	4,202	4,239
Maintenance	1,719	1,762	1,791	1,855	1,921	1,988	2,052	2,114	2,176	2,235
Excess Supply Rate %	7.4	9.5	8.5	8.8	9.0	9.0	9.3	9.2	8.9	8.4
<b>Plumbers</b>										
Labour Force	6,207	6,378	6,700	6,748	6,745	6,736	6,734	6,759	6,801	6,853
Change	442	171	322	47	-3	-9	-2	26	41	52
% Change	7.7	2.8	5.0	0.7	0.0	-0.1	0.0	0.4	0.6	0.8
Employment	5,780	5,857	6,288	6,172	6,122	6,131	6,139	6,188	6,245	6,324
Change	479	77	431	-116	-50	9	8	49	57	79
% Change	9.0	1.3	7.4	-1.8	-0.8	0.2	0.1	0.8	0.9	1.3
Construction	4,468	4,514	4,924	4,760	4,659	4,618	4,578	4,580	4,591	4,625
Maintenance	1,312	1,343	1,364	1,412	1,462	1,512	1,561	1,608	1,654	1,699
Excess Supply Rate %	6.9	8.2	6.2	8.5	9.2	9.0	8.8	8.5	8.2	7.7

Trades	2007e	2008f	2009f	2010f	2011f	2012f	2013f	2014f	2015f	2016f
<b>Refrigeration and Air Conditioning Mechanics</b>										
Labour Force	1,170	1,220	1,278	1,278	1,268	1,262	1,259	1,263	1,269	1,275
Change	105	51	58	0	-10	-7	-3	4	6	6
% Change	9.9	4.3	4.8	0.0	-0.8	-0.5	-0.2	0.4	0.5	0.5
Employment	1,096	1,123	1,208	1,174	1,156	1,156	1,156	1,167	1,175	1,186
Change	109	28	85	-34	-19	0	1	10	8	11
% Change	11.1	2.5	7.6	-2.8	-1.6	0.0	0.1	0.9	0.7	0.9
Construction	902	927	1,010	970	944	937	931	935	936	941
Maintenance	193	197	198	205	212	219	225	232	239	245
Excess Supply Rate %	6.3	7.9	5.5	8.1	8.9	8.4	8.1	7.6	7.4	7.0
<b>Residential and Commercial Installers and Servicers</b>										
Labour Force	3,311	3,426	3,595	3,630	3,640	3,639	3,633	3,637	3,652	3,675
Change	229	115	168	36	9	0	-6	5	15	23
% Change	7.4	3.5	4.9	1.0	0.3	0.0	-0.2	0.1	0.4	0.6
Employment	3,102	3,133	3,341	3,297	3,281	3,286	3,279	3,294	3,319	3,358
Change	258	31	208	-44	-17	5	-7	15	24	40
% Change	9.1	1.0	6.6	-1.3	-0.5	0.2	-0.2	0.5	0.7	1.2
Construction	2,575	2,591	2,787	2,723	2,685	2,669	2,642	2,637	2,642	2,663
Maintenance	527	543	554	575	596	617	637	657	676	695
Excess Supply Rate %	6.3	8.6	7.1	9.2	9.9	9.7	9.7	9.4	9.1	8.6
<b>Roofers and Shinglers</b>										
Labour Force	3,777	3,870	3,994	4,056	4,111	4,148	4,166	4,187	4,218	4,258
Change	251	93	124	62	55	37	19	21	31	40
% Change	7.1	2.5	3.2	1.5	1.4	0.9	0.5	0.5	0.7	0.9
Employment	3,564	3,546	3,705	3,731	3,765	3,801	3,811	3,837	3,877	3,934
Change	260	-17	158	26	35	36	9	26	40	57
% Change	7.9	-0.5	4.5	0.7	0.9	0.9	0.2	0.7	1.0	1.5
Construction	2,535	2,493	2,635	2,623	2,618	2,614	2,586	2,574	2,578	2,600
Maintenance	1,028	1,053	1,070	1,108	1,147	1,187	1,225	1,262	1,299	1,334
Excess Supply Rate %	5.7	8.4	7.2	8.0	8.4	8.4	8.5	8.4	8.1	7.6
<b>Sheet Metal Workers</b>										
Labour Force	3,816	3,933	4,123	4,147	4,137	4,124	4,108	4,109	4,115	4,127
Change	418	117	190	24	-10	-13	-16	0	7	12
% Change	12.3	3.1	4.8	0.6	-0.2	-0.3	-0.4	0.0	0.2	0.3
Employment	3,564	3,587	3,830	3,757	3,717	3,717	3,703	3,718	3,734	3,762
Change	362	23	243	-73	-40	0	-13	15	16	28
% Change	11.3	0.7	6.8	-1.9	-1.1	0.0	-0.4	0.4	0.4	0.8
Construction	3,255	3,272	3,511	3,427	3,374	3,362	3,338	3,342	3,347	3,365
Maintenance	309	315	319	330	343	354	365	376	387	397
Excess Supply Rate %	6.6	8.8	7.1	9.4	10.2	9.9	9.9	9.5	9.3	8.8
<b>Steamfitters, Pipefitters and Sprinkler System Installers</b>										
Labour Force	1,696	1,749	1,816	1,836	1,874	1,902	1,927	1,960	1,992	2,020
Change	62	53	68	20	38	28	25	33	32	28
% Change	3.8	3.1	3.9	1.1	2.1	1.5	1.3	1.7	1.6	1.4
Employment	1,567	1,609	1,692	1,684	1,725	1,751	1,773	1,810	1,841	1,872
Change	109	42	83	-8	41	26	22	37	31	31
% Change	7.5	2.7	5.1	-0.5	2.4	1.5	1.3	2.1	1.7	1.7
Construction	710	734	803	768	746	739	734	737	738	742
Maintenance	857	875	888	916	978	1,011	1,039	1,073	1,103	1,130
Excess Supply Rate %	7.6	8.0	6.9	8.3	8.0	8.0	8.0	7.7	7.6	7.3
<b>Tilesetters</b>										
Labour Force	1,630	1,651	1,689	1,718	1,748	1,767	1,774	1,779	1,789	1,805
Change	88	21	38	29	30	19	7	5	10	16
% Change	5.7	1.3	2.3	1.7	1.7	1.1	0.4	0.3	0.6	0.9
Employment	1,524	1,501	1,557	1,582	1,605	1,622	1,622	1,628	1,643	1,667
Change	106	-23	56	25	23	16	0	6	15	25
% Change	7.5	-1.5	3.8	1.6	1.5	1.0	0.0	0.4	0.9	1.5
Construction	1,146	1,112	1,160	1,170	1,178	1,180	1,165	1,157	1,158	1,169
Maintenance	379	389	397	412	427	442	457	471	485	498
Excess Supply Rate %	6.5	9.1	7.8	7.9	8.2	8.2	8.6	8.5	8.2	7.6

Trades	2007e	2008f	2009f	2010f	2011f	2012f	2013f	2014f	2015f	2016f
<b>Trades Helpers and Labourers</b>										
Labour Force	16,278	17,955	19,628	19,624	19,272	18,991	18,833	18,865	18,949	19,061
Change	1,432	1,677	1,673	-4	-353	-281	-158	32	85	112
% Change	9.6	10.3	9.3	0.0	-1.8	-1.5	-0.8	0.2	0.4	0.6
Employment	15,064	16,692	18,265	17,247	16,688	16,539	16,485	16,644	16,775	16,955
Change	1,384	1,627	1,573	-1,018	-559	-149	-54	159	131	180
% Change	10.1	10.8	9.4	-5.6	-3.2	-0.9	-0.3	1.0	0.8	1.1
Construction	12,270	13,832	15,360	14,243	13,556	13,300	13,146	13,201	13,234	13,319
Maintenance	2,794	2,860	2,904	3,004	3,132	3,239	3,339	3,443	3,542	3,636
Excess Supply Rate %	7.5	7.0	6.9	12.1	13.4	12.9	12.5	11.8	11.5	11.1
<b>Truck Drivers</b>										
Labour Force	3,301	3,942	4,463	4,334	4,100	3,935	3,844	3,830	3,833	3,842
Change	489	641	521	-130	-233	-165	-92	-13	3	9
% Change	17.4	19.4	13.2	-2.9	-5.4	-4.0	-2.3	-0.3	0.1	0.2
Employment	2,956	3,685	4,184	3,733	3,458	3,358	3,317	3,350	3,363	3,384
Change	332	729	499	-451	-275	-100	-41	33	13	20
% Change	12.6	24.7	13.5	-10.8	-7.4	-2.9	-1.2	1.0	0.4	0.6
Construction	2,872	3,598	4,095	3,641	3,360	3,257	3,213	3,243	3,252	3,270
Maintenance	84	87	89	92	97	101	104	108	111	114
Excess Supply Rate %	10.5	6.5	6.3	13.9	15.7	14.7	13.7	12.5	12.3	11.9
<b>Welders and Related Machine Operators</b>										
Labour Force	2,592	2,875	3,299	3,214	3,035	2,901	2,838	2,834	2,839	2,845
Change	341	283	424	-85	-179	-134	-63	-5	5	6
% Change	15.1	10.9	14.7	-2.6	-5.6	-4.4	-2.2	-0.2	0.2	0.2
Employment	2,342	2,662	3,146	2,800	2,583	2,497	2,484	2,517	2,530	2,546
Change	264	320	484	-346	-217	-86	-13	33	14	16
% Change	12.7	13.7	18.2	-11.0	-7.8	-3.3	-0.5	1.3	0.5	0.6
Construction	2,312	2,631	3,115	2,769	2,550	2,463	2,449	2,481	2,493	2,508
Maintenance	30	30	31	32	33	34	35	36	37	38
Excess Supply Rate %	9.7	7.4	4.6	12.9	14.9	13.9	12.5	11.2	10.9	10.5

e = estimation

f = forecast

Note: Excess Supply = (Labour Force – Employment)/Labour Force

Source: Construction Sector Council.

## APPENDIX B - TRADES DEFINITIONS

*Definitions are based on Human Resources and Skills Development Canada, National Occupational Classification 2001 (NOC 2001). Developed in co-operation with Statistics Canada, NOC-S 2001 provides a standard framework for collecting and analyzing labour market information.*

### Boilermakers

Boilermakers fabricate, assemble, erect, test, maintain and repair boilers, vessels, tanks, towers, heat exchangers and other heavy-metal structures.

**Example titles:** boilermaker, boilermaker apprentice, boiler fitter, boiler installer, construction boilermaker, industrial boilermaker, marine boilermaker, pressure vessel fabricator

### Bricklayers

Bricklayers lay bricks, concrete blocks, stone and other similar materials to construct or repair walls, arches, chimneys, fireplaces and other structures in accordance with blueprints and specifications.

**Example titles:** apprentice bricklayer, bricklayer, brickmason, refractory bricklayer, stonecutter, stonemason

### Carpenters

Carpenters construct, erect, install, maintain and repair structures and components of structures made of wood, wood substitutes and other materials.

**Example titles:** apprentice carpenter, carpenter, finish carpenter, journeyman/woman carpenter, maintenance carpenter, renovation carpenter, rough carpenter

### Concrete Finishers

Concrete finishers smooth and finish freshly poured concrete, apply curing or surface treatments and install, maintain and restore various masonry structures such as floors, ceilings, sidewalks, roads and patios.

**Example titles:** cement finisher apprentice, cement mason, concrete finisher, concrete mason, precast concrete finisher

### Construction Managers

Managers plan, organize, direct, control and evaluate the activities of a construction company or a construction department within a company, under the direction of a general manager or other senior manager. They are employed by residential, commercial and industrial construction companies and by construction departments of companies outside the construction industry.

**Example titles:** commercial construction manager, construction manager, construction superintendent, general contractor, housing construction manager, industrial construction manager, pipeline construction manager, project manager – construction, residential construction manager

### Construction Millwrights and Industrial Mechanics (except textile)

Construction millwrights and industrial mechanics install, maintain, troubleshoot and repair stationary industrial machinery and mechanical equipment.

**Example titles:** construction millwright, industrial mechanic, industrial mechanic apprentice, maintenance millwright, millwright, millwright apprentice, plant equipment mechanic, treatment plant mechanic

### Contractors and Supervisors

This unit group includes trade contractors who own and operate their own businesses and supervisors who supervise and co-ordinate the activities of workers. They are employed by construction companies and maintenance departments of industrial, commercial and manufacturing establishments.

**Example titles:** contractor, foremen, supervisor

### Crane Operators

Crane operators operate cranes or draglines to lift, move, position or place machinery, equipment and other large objects at construction or industrial sites, ports, railway yards, surface mines and other similar locations.

**Example titles:** boom truck crane operator, bridge crane operator, climbing crane operator, construction crane operator, crane operator, dragline crane operator, gantry crane operator, hoist operator (except underground mining), mobile crane operator, tower crane operator, tractor crane operator

### Drillers and Blasters – Surface Mining, Quarrying and Construction

Drillers in this unit group operate mobile drilling machines to bore blast holes in open-pit mines and quarries and to bore holes for blasting and for building foundations at construction sites. Blasters in this unit group fill blast holes with explosives and detonate explosives to dislodge coal, ore and rock or to demolish structures.

**Example titles:** blaster – construction, blaster – surface mining, driller, construction foundation drill operator, open-pit blaster, open-pit driller, rotary drilling machine operator

### Electricians, including industrial and power system

(trades combined and reported under an aggregate trade/occupation)

#### ELECTRICIANS (EXCEPT INDUSTRIAL AND POWER SYSTEM)

Electricians in this unit group lay out, assemble, install, test, troubleshoot and repair electrical wiring, fixtures, control devices and related equipment in buildings and other structures.

**Example titles:** apprentice electrician, construction electrician, construction electrician apprentice, domestic and rural electrician, electrician

#### INDUSTRIAL ELECTRICIANS

Industrial electricians install, maintain, test, troubleshoot and repair industrial electrical equipment and associated electrical and electronic controls.

**Example titles:** shipyard electrician, industrial electrician, industrial electrician apprentice, marine electrician, mill electrician, mine electrician, plant electrician, plant maintenance electrician

## POWER SYSTEM ELECTRICIANS

Power system electricians install, maintain, test and repair electrical power generation, transmission and distribution system equipment and apparatus.

**Example titles:** apprentice power system electrician, power electrician, power station electrician, power system electrician

## Elevator Constructors and Mechanics

Elevator constructors and mechanics assemble, install, maintain and repair freight and passenger elevators, escalators, moving walkways and other related equipment.

**Example titles:** elevator constructor, elevator mechanic, elevator mechanic apprentice, escalator repairer

## Floor Covering Installers

Floor covering installers install carpet, wood, linoleum, vinyl and other resilient floor coverings in residential, commercial, industrial and institutional buildings.

**Example titles:** carpet installer, carpet layer, floor covering installer, floor covering installer apprentice, floor covering mechanic, resilient floor installer, rug installer, vinyl floor installer

## Gasfitters

Gasfitters install, inspect, repair and maintain gas lines and gas equipment such as meters, regulators, heating units and appliances in residential, commercial and industrial establishments.

**Example titles:** gas customer servicer, gasfitter, gasfitter apprentice, gas servicer, gas technician

## Glaziers

Glaziers cut, fit, install and replace glass in residential, commercial and industrial buildings, on exterior walls of buildings and other structures, and in furniture and other products.

**Example titles:** glazier, glazier and metal mechanic, glazier apprentice, plate glass installer, stained glass glazier, structural glass glazier

## Heavy-Duty Equipment Mechanics

Heavy-duty equipment mechanics repair, troubleshoot, adjust, overhaul and maintain mobile heavy-duty equipment used in construction, transportation, forestry, mining, oil and gas, material handling, landscaping, land clearing, farming and similar activities.

**Example titles:** construction equipment mechanic, diesel mechanic – heavy equipment, farm equipment mechanic, heavy-duty equipment mechanic apprentice, heavy-duty equipment technician, heavy equipment mechanic, heavy mobile logging equipment mechanic, heavy mobile mining equipment mechanic, locomotive mechanic, tractor mechanic

## Heavy Equipment Operators (except crane)

Heavy equipment operators operate heavy equipment used in the construction and maintenance of roads, bridges, airports, gas and oil pipelines, tunnels, buildings and other structures, in surface mining and quarrying activities and in material handling work.

**Example titles:** backhoe operator, bulldozer operator, excavator operator, gradall operator, grader operator, heavy equipment operator, heavy equipment operator apprentice, loader operator – construction, side boom tractor operator, surface mining equipment operator

## Industrial Instrument Technicians and Mechanics

Industrial instrument technicians and mechanics repair, maintain, calibrate, adjust and install industrial measuring and controlling instrumentation.

**Example titles:** apprentice industrial instrument mechanic, industrial instrument mechanic, instrument technician, industrial instrumentation technician, industrial process control equipment mechanic

## Insulators

Insulators apply insulation materials to plumbing, air-handling, heating, cooling and refrigeration systems, piping equipment and pressure vessels, and walls, floors and ceilings of buildings and other structures to prevent or reduce the passage of heat, cold, sound or fire.

**Example titles:** boiler and pipe insulator, building insulator, firestopping insulator, heat and frost insulator, insulation applicator, insulation mechanic, insulator, insulator apprentice, sound insulator

## Ironworkers and Structural Metal Fabricators and Fitters

(trades combined and reported under an aggregate trade/occupation)

### IRONWORKERS

Ironworkers fabricate, erect, hoist, install, repair and service structural ironwork, precast concrete, concrete reinforcing materials, curtain walls, ornamental iron and other metals used in the construction of buildings, bridges, highways, dams and other structures and equipment.

**Example titles:** ironworker, ironworker apprentice, ironworker – metal building systems erector, ornamental ironworker, reinforcing ironworker, structural steel erector

## STRUCTURAL METAL AND PLATEWORK FABRICATORS AND FITTERS

Structural metal and platework fabricators and fitters fabricate, assemble, fit and install steel or other metal components for buildings, bridges, tanks, towers, boilers, pressure vessels and other similar structures and products.

**Example titles:** metal fabricator, plater, platework fitter, shipfitter, shipfitter apprentice, steel fabricator, structural steel fitter

## Painters and Decorators

Painters and decorators apply paint, wallpaper and other finishes to interior and exterior surfaces of buildings and other structures.

**Example titles:** construction painter, maintenance painter, painter, painter and decorator, painter and decorator apprentice, paperhanger

## Plasterers, Drywall Installers and Finishers, and Lathers

Plasterers apply finish and maintain and restore plaster or similar materials on interior and exterior walls, ceilings and building partitions to produce plain or decorative surfaces. Drywall installers and finishers install and finish drywall sheets and various types of ceiling systems. Lathers install support framework for ceiling systems, interior and exterior walls and building partitions.

**Example titles:** acoustical ceiling installer, ceiling installer, drywall applicator, drywall finisher, drywall installer and finisher apprentice, drywall taper, interior systems mechanic, lather, lather apprentice, plasterer, plasterer apprentice, sheetrock applicator, wood lather

## Plumbers

Plumbers install, repair and maintain pipes, fixtures and other plumbing equipment used for water distribution and waste water disposal in residential, commercial and industrial buildings.

**Example titles:** maintenance plumber, plumber, plumber apprentice, plumbing mechanic

## Refrigeration and Air Conditioning Mechanics

Refrigeration and air conditioning mechanics install, maintain, repair and overhaul residential central air conditioning systems, commercial and industrial refrigeration and air conditioning systems and combined heating, ventilation and cooling systems. Transport refrigeration mechanics are included in this unit group.

**Example titles:** central air conditioning mechanic; commercial air conditioning mechanic; heating and cooling mechanic; heating, ventilation and air conditioning (HVAC) mechanic; refrigeration and air conditioning mechanic apprentice; refrigeration mechanic; transport refrigeration mechanic

## Residential and Commercial Installers and Servicers

Workers in this unit group install and service a wide variety of interior and exterior prefabricated products such as windows, doors, electrical appliances, water heaters, fences, play structures and septic systems at residential or commercial properties.

**Example titles:** aluminum window installer, eavestrough installer, electric appliance installer, exterior cladder, fence erector, hot tub installer, kitchen cupboard and vanity installer, recreation structure erector, siding installer, sign installer, swimming pool installer, water conditioner servicer, water heater servicer, window installer

## Roofers and Shinglers

Roofers install, repair or replace flat roofs and shingles, shakes or other roofing tiles on sloped roofs. Shinglers install and replace shingles, tiles and similar coverings on sloped roofs.

**Example titles:** apprentice roofer, asphalt roofer, built-up roofer, flat roofer, residential steep roofer, roofer, shingler, single-ply roofer

## Sheet Metal Workers

Sheet metal workers fabricate, assemble, install and repair sheet metal products.

**Example titles:** apprentice sheet metal worker, sheet metal fabricator, sheet metal mechanic, sheet metal worker, tinsmith

## Steamfitters, Pipefitters and Sprinkler System Installers

Steamfitters and pipefitters lay out, assemble, fabricate, maintain, troubleshoot and repair piping systems carrying water, steam, chemicals and fuel in heating, cooling, lubricating and other process piping systems. Sprinkler system installers fabricate, install, test, maintain and repair water, foam, carbon dioxide and dry chemical sprinkler systems in buildings for fire protection purposes.

**Example titles:** apprentice pipefitter-steamfitter, fire sprinkler fitter, marine pipefitter, sprinkler system fitter, sprinkler system installer, sprinkler system installer apprentice, steamfitter

## Tilesetters

Tilesetters cover interior and exterior walls, floors and ceilings with ceramic, marble and quarry tile, mosaics or terrazzo.

**Example titles:** apprentice tilesetter, ceramic tile installer, marble setter, terrazzo polisher, terrazzo worker, tile installer, tilesetter

## Trades Helpers and Labourers and Other Trades Helpers/Labourers

(trades combined and reported under an aggregate trade/occupation)

### TRADES HELPERS AND LABOURERS

Construction trades helpers and labourers assist skilled tradespersons and perform labouring activities at construction sites.

**Example titles:** asphalt spreader, bricklayer helper, carpenter helper, concrete mixer helper, construction helper, construction labourer, demolition worker, drywall sander, flagman/woman, glazier helper, labourer – concrete paving, labourer – excavation, pipeline mandrel operator, plumber helper, roofer helper, stabber – pipeline construction

### OTHER TRADES HELPERS AND LABOURERS

This unit group includes trades helpers and labourers not elsewhere classified who assist skilled tradespersons and perform labouring activities in the installation, maintenance and repair of industrial machinery, refrigeration and heating and air conditioning equipment, in the maintenance and repair of transportation and heavy equipment, in the installation and repair of telecommunication and power cables and in other repair and service work settings.

**Example titles:** aerial spraying assistant, aircraft mechanic helper, cable installer helper, diesel mechanic helper, ground worker – telecommunications, mechanic's helper – automotive, millwright helper, refrigeration mechanic helper, splicer helper – telecommunications, surveyor helper

## Truck Drivers

Truck drivers operate heavy trucks to transport goods and materials over urban, interurban, provincial and international routes.

**Example titles:** bulk goods truck driver, dump truck driver, flatbed truck driver, logging truck driver, long-haul truck driver, moving van driver, tow truck driver, truck driver, truck driver – heavy truck, truck driver – tractor-trailer

## Welders and Related Machine Operators

Welders operate welding equipment to weld ferrous and non-ferrous metals. This unit group also includes machine operators who operate previously set up production welding, brazing and soldering equipment.

**Example titles:** aviation welding technician, brazing machine operator, brazing machine setter, electric arc welder, journeyman/woman welder, laser welding operator, pressure vessel welder, production welder, soldering machine operator, spot welder, welder, welder apprentice, welder-fitter

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## ABOUT CSC

The Construction Sector Council is a national organization committed to the development of a highly skilled workforce – one that will support the future needs of the construction industry in Canada. Created in April 2001, and financed by both government and industry, the CSC is a partnership between labour and business.

Like many industries, the construction industry faces a number of human resource challenges. These include the need to accurately forecast labour demand and supply, to increase the mobility of workers, to make the most of new technologies and to cope with an aging workforce.

This report is part of the CSC's Labour Market Information Program. It is available electronically at [www.csc-ca.org](http://www.csc-ca.org).



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