CONSTRUCTION LABOUR MARKET OUTLOOK FOR NORTHWESTERN ONTARIO

North Superior
Workforce Planning Board

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North Superior Workforce Planning Board

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The views expressed in this document do not necessarily reflect those of Employment Ontario.

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INTRODUCTION

Employment of construction trades and occupations in Ontario will continue to grow across the next five years, with investments in resources and infrastructure leading this growth. Across the province major projects are planned for mining, utilities, transportation and transit. Employment gains, however, will be unevenly distributed across regions, with Northern Ontario posed to be one of the key growth centres over the medium term.

BuildForce Canada's 2014 *Construction and Maintenance Looking Forward* report highlights Northern Ontario as one of the province's strongest labour markets for construction. Since 2006, construction employment in Northern Ontario has increased from 17,000 to more than 23,000 workers in 2013, a 35% increase. It is projected that construction activity and employment growth will continue to remain strong over the medium term, with many of the major mine developments and utilities projects under construction, with their proposed locations being within the Northwest region.

Further, the age profile of the current construction workforce is older than the rest of the province and replacement demand related to retirements in the region will be significant. According to the BuildForce report, an estimated 27% of Northern Ontario's current construction workforce is expected to retire over the next decade. This represents a potential loss of up to 8,000 skilled workers. Given these expansion (increased construction activity) and replacement (retirements) demands, the construction workforce in Northern Ontario will be significant and meeting requirements will be a challenge.

Mining and infrastructure projects are bringing in a wave of new, often non-resident workers to the region to meet the growing labour demands, and a lot of this work is projected to take place in the Northwest region. To assist in assessing the potential labour market impacts, the North Superior Workforce Planning Board (NSWPB) engaged BuildForce Canada to provide an analysis of the demand and supply requirements for construction trades and occupations required to enable the development of the natural resources in the Northwest region.

Originally created in 2001 as the Construction Sector Council, BuildForce is Canada's leading authority on labour market assessments for construction. BuildForce is a national industry-led organization committed to working

with the construction industry to provide information and resources to assist with its management of workforce requirements. It consults with industry, including owners, contractors and labour groups, to validate outlook assumptions and identify major projects expected to drive regional construction activity. It produces an annual labour market outlook for 33 trades and occupations by province and for five regions in Ontario (Greater Toronto Area, Eastern, Central, Southwest and the North).[1]

For this analysis, BuildForce's labour market information system was modified to focus specifically on the Northwest region. The purpose of the analysis was to measure current and emerging labour market challenges and opportunities for the period 2014 to 2018. Understanding the magnitude of the projected demands for construction trades and occupations sets the foundation for NSWPB to engage local partners to establish plans and leadership that maximize local labour market benefits to ensure a long-term skilled, sustainable construction workforce.

Increased demand requirements will be met through a combination of recruiting and training from the local workforce, recruiting new permanent workers to the region and recruiting temporary non-resident workers to come to the region to meet peak demand requirements. The analysis explores different supply scenarios measuring the impacts of expanding the local labour force, recruiting temporary workers from outside the region and a combination of both. The scenario takes into account the requirements to meet peak demands for major construction projects and the replacement of the aging workforce. The replacement of retiring workers increases the focus to draw new workers from the local community, but recruiting strategies must also include the need to get workers to move to the Northwest. The Northwest will be competing with other parts of Ontario and other provinces for the needed workers to meet peak demands and to build a long-term sustainable workforce.

NORTHWESTERN ONTARIO

Led by mine developments in the Northwest, non-residential construction investment was estimated at $1.25 billion ($2007[2]) in 2013, up from $0.6 billion in 2007. Investment growth has been significant over the last few years and is projected to continue to grow over the next five years. Non-residential investment is projected to peak at $2.15 billion in 2017 and then decline to $1.6 billion by 2018 as many of the known major projects wind down. Investment levels

[1] *More information on BuildForce Canada is available at www.buildforce.ca.*

[2] *$2007 indicates that the investment values are in year 2007 dollars (base year), that is, adjusted for inflation. This is used to calculate the real physical year-to-year change of the value of construction, factoring out growth (increase value) due to increases in prices.*

in 2018 are expected to remain well above historical levels of activity for the region. With continued resource development proposed for the region, new projects are likely to come on later in the scenario period, but are not included in this analysis, as the timing and extent of the work is not well known.

This increased investment in the Northwest region will translate into significant employment opportunities. The construction, development and operation of these major projects will require many construction trades over the next five years. This level of growth, combined with the need to replace an aging workforce, increases the need to establish both short- and long-term strategies to meet demand requirements in the Northwest.

Community consultations over the last five years have consistently indicated an increased focus and concern for appropriately meeting the apprenticeship and qualified trades shortage throughout the region. Additionally, the lack of a concerted and coordinated effort to provide and promote experiential learning opportunities for youth and young adults continues to be an ongoing concern within the region. Indeed, the demand for qualified tradesmen and women in the Thunder Bay District is at an all-time high. The construction sector has consistently shown prominence in the Thunder Bay District year over year, ranking in the top 5 in employment in both small-to-medium businesses, as well as number of employers in the District for at least the last 10 years. Between 2011 and 2012, employers in Specialty Trade Contracting grew by 3%, while Heavy and Civil Engineering Construction increased by 6.3%. Even more significant, the value of industrial permits issued jumped 74% in 2012 across Northwestern Ontario, climbing to its highest level since data collection began.

At present, the region does not possess a sufficient number of construction trades to fill the projected jobs required to build and operate the proposed projects. As a result, the Northwest will likely face a dramatic change to its local workforce over the next decade. The proposed mining and infrastructure projects will potentially bring a wave of new, often non-resident workers to the region. Further, the age profile of the local workforce is older than the rest of the province. While there can be significant volatility in the timing of expansion demand driven by proposed major projects, the loss of skilled workers expected to retire over the next decade is a reality. Retirement patterns are becoming more crucial as growing numbers of the baby boomer generation move into their 60s and consider retirement.

Planning to meet industry's needs will require a combination of sound information to support planning for the development of a regional skilled labour recruitment strategy that addresses the appropriate mix of recruitment, training and education of the local labour force, as well as the use of non-resident workers.

The objective of this analysis is to provide measures of the demands over the next five years (2014–2018) by trade and assess various supply scenarios that can be used by local industry, employment service providers and training providers/educators to ensure the Northwest region of Ontario has the required skilled labour force to meet its short- and long-term growth requirements.

These changes could focus the attention of the local construction industry on those in the youth population and the Aboriginal community that might be expected to join the industry. Employing many of this group in current jobs will help to replace the looming retirements – many of which will come after the current project activity is over. The new workforce that will replace the retirements must be permanent residents and will need to draw from the local community, as well as bring new workers to the region. Managing this set of circumstances is not unique to Northwestern Ontario, but the magnitude of the change is very large.

GEOGRAPHIC REGION

For this analysis, the Northwest region is defined by Statistics Canada's Economic Region 595, including three Census Divisions (58, 59 and 60) and the Census Sub-Divisions as listed below:

- **58 Thunder Bay District**
  - 1 Neebing
  - 4 Thunder Bay
  - 11 Oliver Paipoonge
  - 16 O'Connor
  - 19 Conmee
  - 90 Thunder Bay, unorganized
- **59 Rainy River District**
  - 11 Alberton
  - 16 La Vallee
  - 19 Emo
  - 24 Chapple
  - 31 Morley
  - 40 Dawson
  - 47 Lake of the Woods
  - 90 Rainy River, unorganized
- **60 Kenora District**
  - 90 Kenora, unorganized

The definition of the geographic region included in this analysis was determined by the availability and reliability of data.

APPROACH, SCENARIOS AND ASSUMPTIONS

Approach

The approach adopted to create the scenarios for this outlook for construction trades uses both economic and occupation models of the Northwest region based on BuildForce Canada's labour market information (LMI) forecast system for construction trades and occupations. BuildForce develops annual labour market outlooks by province for 33 construction trades and occupations. The LMI system for this analysis was modified to reflect the Northwest region as described previously. The LMI system unique to the Northwest allowed for the testing of various supply scenarios to measure the potential labour market implications. The models used for the analysis are as follows:

- The **economic model** for the region produces information that is used to determine the labour market performance of the trades. This information includes the outlook for employment by industry that drives the demand for the trades and demographic information such as population, age distribution and labour force participation rates[3] that determine the supply of the trades.
- The **occupation model** produces information on the demand for the trades such as employment and retirements, and the supply of trades such as labour force[4], new entrants[5] and net in-migration[6].

These models are used to assess the future balance between demand and supply for selected trades and occupations in terms of:

- What are the sources of demand (major projects, retirements, etc.)?
- What are the potential sources of supply?
- Will there be sufficient supply to meet demand?

While the construction industry plays a key role in developing the major projects and the need for the construction trades, it is also important to look at the trades that work in other industries. A considerable number of tradespeople work outside the construction industry. For example, an estimated 35% of electricians work for non-construction establishments such as manufacturing facilities and utility companies. The share is much higher for welders, where almost 90% are employed outside construction. While trades in other industries represent

[3] *The participation rate refers to the number of people who are either employed or are actively looking for work.*

[4] *Labour force is the number of people working (employment) plus the number of people actively looking for work in a given year.*

[5] *New entrants is the number of residents aged 30 and younger estimated to enter the labour force for the first time. People in this age group are typically in a transition from school to permanent positions in the labour force.*

[6] *Net in-migration is the number of new workers into a region less the numbers moving out.*

a potential source of supply to the construction industry, these other industries are also competitors for their services. As a result, the focus for both the demand and supply of trades will include the construction trades and occupations in all industries.

Scenarios

This analysis incorporates the assessments of three scenarios that examine different labour supply options ranging from recruiting workers from the local population to importing non-resident workers from outside the Northwest region. The analysis includes 2013 as the base year and measures the demand and supply requirements for the period 2014 to 2018. The three scenarios use identical economic performance and proposed major projects assumptions. The only change across the scenarios is the share of workers that will be sourced as temporary workers from outside the region, who come to work on major projects and then leave once the projects wind down and end.

Each of the three scenarios assesses the region's ability to supply construction trades and occupations needed to undertake the proposed major projects scheduled for development in the region. At present, the region does not possess a sufficient number of construction trades to fill the jobs required to build and operate the proposed projects, as well as the related spin-off effects throughout the region's economy. The additional trades required will need to be sourced from outside the region. These trades will either move to the region as a place of work and residence, or will be temporary workers housed in work camps or other facilities who maintain their place of residence outside the region.

These assumptions are important, as they have differing impacts on the region's overall economy and, in turn, the need for construction trades. For example, permanent residents increase the population in the region, which requires additional public infrastructure, increased housing investment and more consumer expenditures. This increased economic activity will lead to increased sales and investment by firms in the region's economy, leading to additional employment in the region and additional positive impacts on the economy.

The three scenarios for the economy regarding the ability to supply construction trades are:

- **Proactive Scenario** – 100% of the needed workers for construction and operations activities are sourced locally and supplemented by non-resident workers permanently moving to the region. This reflects the maximum benefits to the region, as all needed workers

are local or move to the region, increasing population and the associated increased demands on residential, commercial and institutional construction and other services.

- **Strategic Scenario** – 60% of the required construction trades will move to the region and take up residence to supplement the local trades for construction. The remainder of industry's needs will be met by non-resident temporary workers. This scenario attempts to establish the balance between the increased expansion demand needed to meet peak requirements for the major projects and replacing retiring workers to ensure a long-term sustainable skilled workforce and maximizing the benefits to the Northwest region.
- **Status Quo Scenario** – 20% of the required construction trades will move to the region and take up residence to supplement the local trades for construction. The remainder of the industry's needs will be met by non-resident temporary workers. This reflects the more traditional approach for meeting the demands driven by major resource development projects. Unless there are significant levels of unemployed skilled workers available in the local community, industry must recruit from outside the region. With current unemployment rates below traditional levels, recruiting from the unemployed is not a viable option over the near term. A majority of needed workers would likely work on a fly-in, fly-out basis, but not take permanent residency. The increased activity, even on a temporary basis, would still increase some residential, commercial and institutional services, but well below the impact under the Proactive Scenario.

It should be noted that the workers who live outside the region and work in the region are not included in the employment and labour force numbers reported below. The employment numbers published by Statistics Canada in its Labour Force Survey and the National Household Survey, which are used in this report, refer to place of residence employment. For example, if a person from the Greater Toronto Area (GTA) works in the Northwest region, that person is included in the employment numbers for the GTA and not the Northwest. If a person living in the Northwest region works in the GTA, then the employment is registered in the Northwest region.

Assumptions

The common assumptions across these three scenarios refer to the outlook for the region's external trading partners, including the rest of Canada and the United States, commodity prices and government policy for Ontario and Canada as a whole. Please refer to Appendix A for a detailed description of the assumptions.

Added to the analysis are key major projects planned for the region that are expected to drive the demand for construction trades and occupations. The major projects planned for the region over the next five years are considered key drivers of the scenarios from the point of the construction trades. These projects, which are shown in Table 1, include largely mining, utilities and manufacturing projects. The analysis does not attempt to capture all projects in the region, but focuses on selected major projects that are underway or proposed that either individually or as a group are expected to have a significant impact on the local labour market. The macroeconomic model estimates other types of residential and non-residential investment based on overall economic performance and population growth. The purpose of "tuning" the forecast model for selected projects is to adjust the system to better capture the magnitude and timing of major investment and the associated labour market impacts. It should be noted that some of the project expenditures fall beyond the 2014 to 2018 period, so the full project values will not be considered in this analysis.

There are a large number of mining projects in the Northwest region. The total value of the projects in Table 1 is about $7 billion. The Cliffs Natural Resources Black Thor mining project is not included in the analysis in line with its recent announcements. The total value of the manufacturing projects, which are all associated with forest products, is $360 million. The utility projects total more than $1 billion. The Energy East pipeline project (transportation) is also included in the projects, along with the Nipigon River bridge project (government services). These projects span across the region and across industries (mining, utilities, manufacturing, pipelines and roads, highways and bridges). Figure 1 illustrates the distribution of mining development projects across the region.

Table 1: Select Major Projects

	Construction Period
Mining	
Bending Lake Josephine Cone Magnetite Iron Ore Mine Complex – Bending Lake Iron Group Ltd.	2015–2017
Rainy River Gold/Silver Mine – New Gold Inc.	2014–2016
Marathon PGM-Copper Mine and Mill – Stillwater Mining Company	2015–2017
Atikokan Hammond Reef Gold Mine & Mill – Osisko Mining Corporation	2015–2018
Eagle's Nest Webequie McFaulds Lake Polymetallic Mine and Mill – Noront Resources	2015–2017
Webequie Blackbird Chormite Mine and Mill – Noront Resources	2017–2019
Red Lake Phoenix Gold Mine and Mill – Rubicon Minerals Corp.	2012–2015
Pickle Lake-Lake Saint Joseph Iron Ore Mine and Mill – Rockex Limited	2015–2018
Lac des Iles (LDI) Palladium New Mine Expansion Phase II – North American Palladium Limited	2011–2014
Panoramic-Magma Thunder Bay North PGM-Copper Mine – Magna Metals Limited	2015–2017
Red Lake Springpole Gold Mine – Gold Canyon Resources Incorporated	2016–2017
Wabigoon Goliath Gold Mine and Mill Phase I – Treasury Metals	2014-2015
Wabigoon Goliath Gold Mine and Paste Backfill Plant Addition Phase II – Treasury Metals	2016-2017
Cochenour Bruce Channel Red Lake Gold Mine – Goldcorp Inc.	2012–2015
Madsen Gold Mine and Mill restart and expansion	2017–2018
Beardmore Mill Trans-Canada Brookbank Gold Mine	2015–2016
Hard Rock Project Trans-Canada Geraldton Gold Mine	2015–2016

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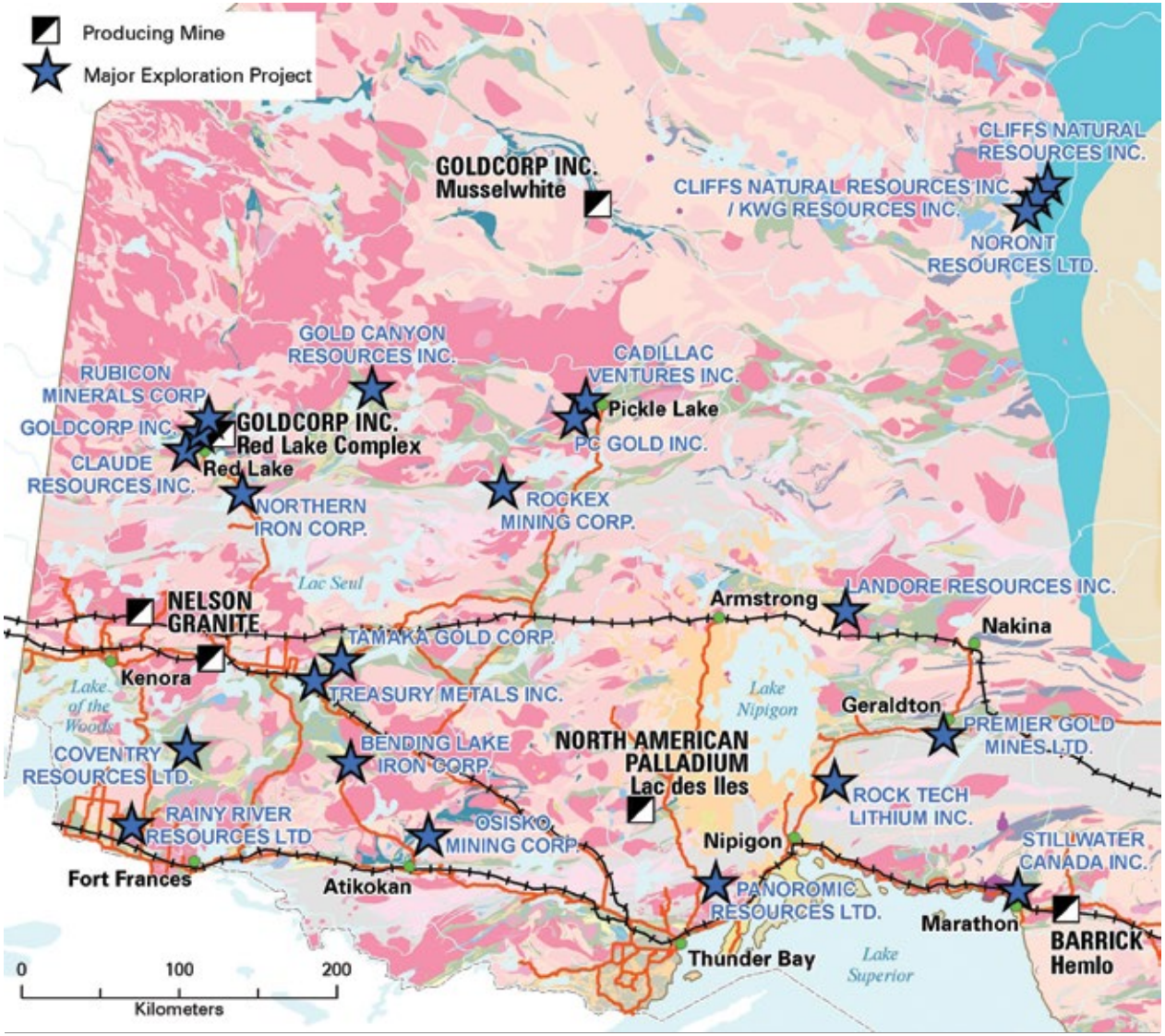
	Construction Period
Manufacturing	
Terrace Bay Pulp Mill Conversion	2014–2016
Atikokan Sawmill	2013–2014
Thunder Bay Sawmill – Complete	2013–2013
Terrace Bay Steam Turbine Generator Addition	2014–2016
Atikokan Particle Board Mill Conversion to a Pellet Mill	2013–2014
Thunder Bay Fuel Pellet Mill	2013–2014
Utilities	
Little Jackfish (north of Thunder Bay)	2012–2019
Atikokan Biomass Plant Conversion	2012–2014
Various Solar and Wind Projects	2013–2018
Namewaminikan Hydro Incorporated: Beardmore 5.6mw Long Rapids Hydro Power Station	2013–2015
Axor Groupe Incorporated: Thunder Bay 4.4mw Twin Falls Hydro Project	2014–2015
Horizon Legacy Energy Corporation: Ear Falls 3.5mw Trout Lake Hydro Project	2013–2015
Thunder Bay 5mw Kam Hydroelectric Station	2014–2015
Other	
Energy East Pipeline – Ontario – NW	2013–2018
Nipigon River Bridge	2013–2017
Northern Highways Program	2013–2017

Sources: Thunder Bay Community Economic Development Commission, BuildForce Canada and industry consultations

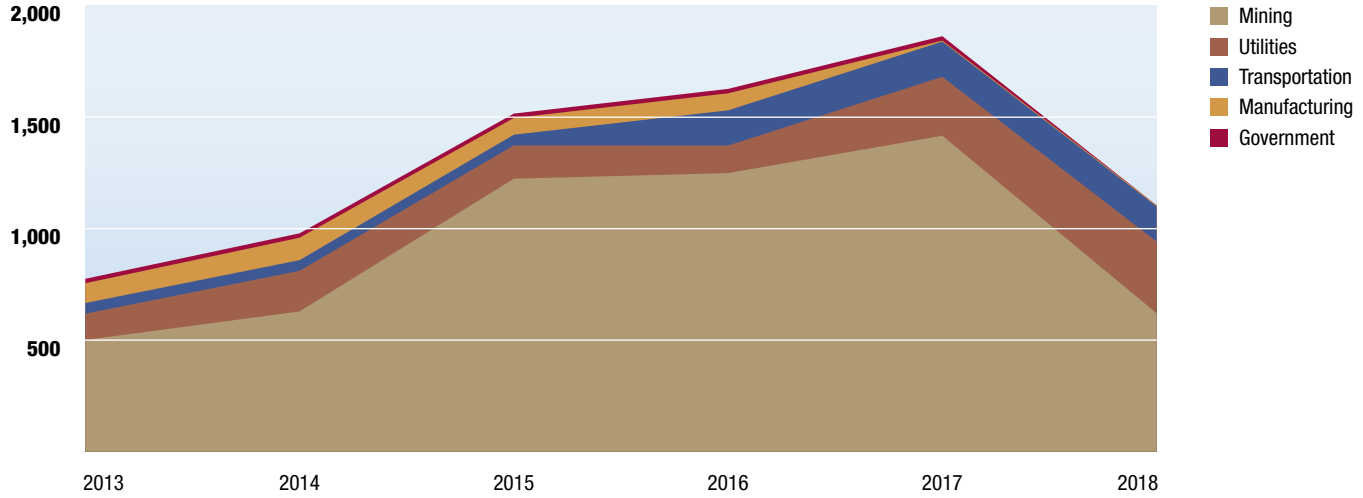
Figure 1: Mining Development Projects



Sources: Ontario Ministry of Northern Development and Mines and Thunder Bay Community Economic Development

Figure 2 shows a stacked graph of the investment by these projects, separated into key industry categories. It should be noted that the values in the graph have been converted to millions of 2007 constant dollars (adjusted for inflation) to match the data used in the analysis.[7] The total values for the projects have been allocated to the years in which the construction takes place. As can be seen from the graph, investment expenditures peak in 2017 before falling as most known projects wind down.

Figure 2: Major Project Values by Industry ($2007 Millions*)



* Due to inflation, the purchasing power of the dollar changes over time, so in order to compare dollar values from one year to another, they need to be converted from current dollar values to constant dollar values; in this case, $2007.

Source: BuildForce Canada

[7] *Due to inflation, the purchasing power of the dollar changes over time, so in order to compare dollar values from one year to another, they need to be converted from current dollar values to constant dollar values; in this case, $2007.*

ECONOMIC PERFORMANCE

The performance of the region's economy for key economic indicators is shown in Table 2. The indicators such as GDP[8] (gross domestic product) and its components such as consumer expenditures are measured in millions of 2007 dollars, which is how Statistics Canada measures them to adjust for inflation. The table shows the 2007 and 2012 values in the first two columns. The change in the variables from 2007 to 2013 and 2014 to 2018 are shown in the last two columns, respectively.

BuildForce Canada uses a scenario-based forecasting system to assess future economic conditions. The economic assumptions are described in Appendix A.

Table 2: Key Economic Indicators

	2007	2012	2013	2014	2015	2016	2017	2018	Change 2007–2013	Change 2014–2018
GDP ($2007 Millions*)										
Proactive	10,010	9,777	9,863	10,161	10,630	10,940	11,012	11,397	-147	1,534
Strategic	10,010	9,777	9,861	10,156	10,616	10,911	10,970	11,340	-149	1,479
Status Quo	10,010	9,777	9,859	10,148	10,601	10,887	10,940	11,310	-151	1,451
Consumer Expenditures ($2007 Millions*)										
Proactive	5,477	5,479	5,619	5,734	5,938	6,143	6,284	6,373	142	754
Strategic	5,477	5,479	5,613	5,715	5,895	6,062	6,170	6,227	136	614
Status Quo	5,477	5,479	5,607	5,697	5,860	6,006	6,100	6,156	130	549
Residential Investment ($2007 Millions*)										
Proactive	218	325	377	466	526	556	520	479	159	102
Strategic	218	325	373	455	502	514	467	423	155	50
Status Quo	218	325	370	444	482	486	438	404	152	34

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[8] *GDP is the defined value of all the finished goods and services produced within a region during a specific time period. It includes all of private and public consumption, government outlays, investments and exports less imports that occur within a defined region. It is one of the most common economic indicators that measure a region's total output.*

	2007	2012	2013	2014	2015	2016	2017	2018	Change 2007–2013	Change 2014–2018
Non-Residential Investment ($2007 Millions*)										
Proactive	1,211	2,184	2,268	2,500	3,077	3,182	3,432	2,698	1,057	430
Strategic	1,211	2,184	2,267	2,497	3,070	3,169	3,416	2,681	1,056	414
Status Quo	1,211	2,184	2,266	2,494	3,064	3,161	3,407	2,675	1,055	409
Government Expenditures ($2007 Millions*)										
Proactive	2,635	2,907	2,625	2,643	2,667	2,695	2,718	2,737	-10	112
Strategic	2,635	2,907	2,624	2,641	2,661	2,685	2,703	2,717	-11	93
Status Quo	2,635	2,907	2,624	2,639	2,657	2,677	2,693	2,705	-11	81
Population (000s)										
Proactive	243	241	244	246	250	253	256	259	1.1	15.1
Strategic	243	241	244	246	249	252	255	256	1.0	12.9
Status Quo	243	241	243	246	249	251	254	255	0.9	11.7
Employment (000s)										
Proactive	106	101	102	104	106	107	107	107	-4.1	5.1
Strategic	106	101	101	104	106	106	106	105	-4.4	3.9
Status Quo	106	101	101	103	105	105	105	105	-4.6	3.8
Labour Force (000s)										
Proactive	114	109	109	111	113	114	115	116	-5.3	6.5
Strategic	114	109	109	111	112	114	114	115	-5.4	5.7
Status Quo	114	109	109	111	112	113	114	114	-5.5	5.5

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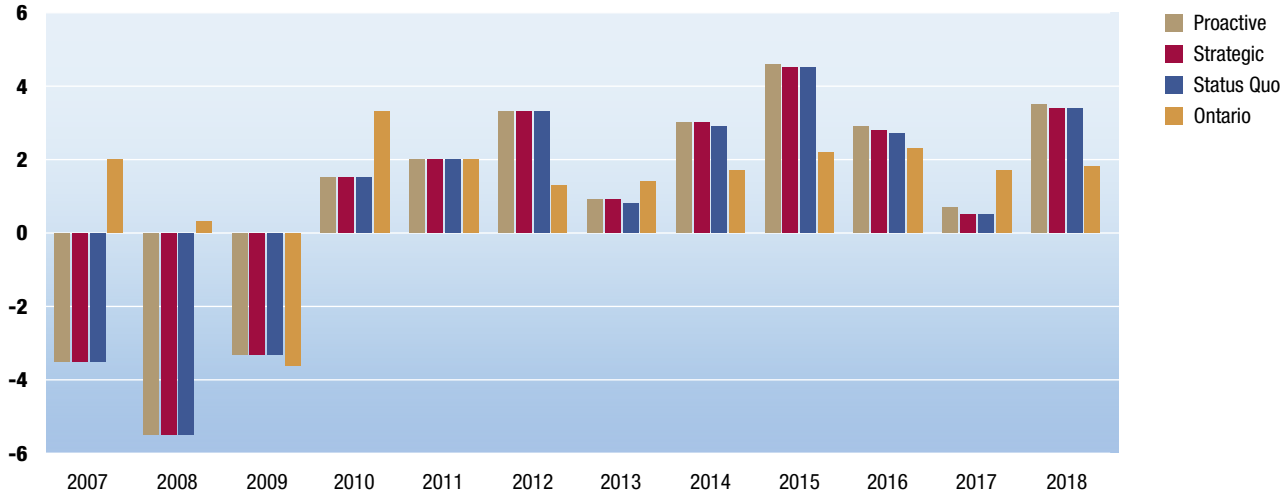
	2007	2012	2013	2014	2015	2016	2017	2018	Change 2007–2013	Change 2014–2018
Unemployment Rate (%)										
Proactive	7.5	6.7	6.8	6.1	5.6	5.9	7.0	7.6	-0.7	0.8
Strategic	7.5	6.7	6.9	6.3	6.1	6.6	7.6	8.2	-0.6	1.3
Status Quo	7.5	6.7	7.1	6.6	6.5	6.9	7.8	8.2	-0.4	1.1
Households (000s)										
Proactive	96	98	99	101	103	104	106	107	3.2	8.0
Strategic	96	98	99	101	102	104	105	106	3.2	7.2
Status Quo	96	98	99	101	102	104	105	106	3.2	6.8
Housing Starts										
Proactive	371	517	708	1,057	1,279	1,382	1,233	1,073	337	365
Strategic	371	517	695	1,013	1,187	1,221	1,034	864	324	169
Status Quo	371	517	682	971	1,111	1,116	926	792	311	110
Disposable Income ($Millions)										
Proactive	5,773	6,334	6,546	6,895	7,298	7,654	7,895	8,111	773	1,565
Strategic	5,773	6,334	6,529	6,861	7,209	7,500	7,694	7,844	756	1,315
Status Quo	5,773	6,334	6,512	6,827	7,139	7,402	7,574	7,736	739	1,224

* Due to inflation, the purchasing power of the dollar changes over time, so in order to compare dollar values from one year to another, they need to be converted from current dollar values to constant dollar values; in this case, $2007.

Sources: Statistics Canada and BuildForce Canada

Figure 3: GDP Growth (%)



Sources: Statistics Canada and BuildForce Canada

GDP

After declining from 2007 to 2013, GDP increases from 2013 to 2018 – about $1.5 billion or 15% for the period as a whole. There is little variation across the three scenarios, with a slightly larger increase in growth under the Proactive Scenario and lower in the Status Quo Scenario.

GDP growth for the next few years exceeds provincial growth (see Figure 3). The Northwest region is expected to grow by 3.0% and 4.5% respectively in 2014 and 2015 compared to average growth around 2% for the province across the scenario period. Growth slows in 2016 to 2.8% as major projects' investment peaks, but increases to 3.5% as construction winds down and operations and production commence for the mining projects.

Consumer Expenditures

Consumer expenditures (the value of all goods and services purchased by households) register the largest increase followed by non-residential investment expenditures. The higher consumer expenditures reflect increased personal disposable (after-tax) income.

Government Expenditures

Government expenditures (the value of goods and services purchased by governments, all levels) fall over the scenario period in line with reductions in spending imposed by both the federal and provincial governments. The reduction, nevertheless, occurred in 2013, after which expenditures increase in line with stronger population growth and economic activity.

Population

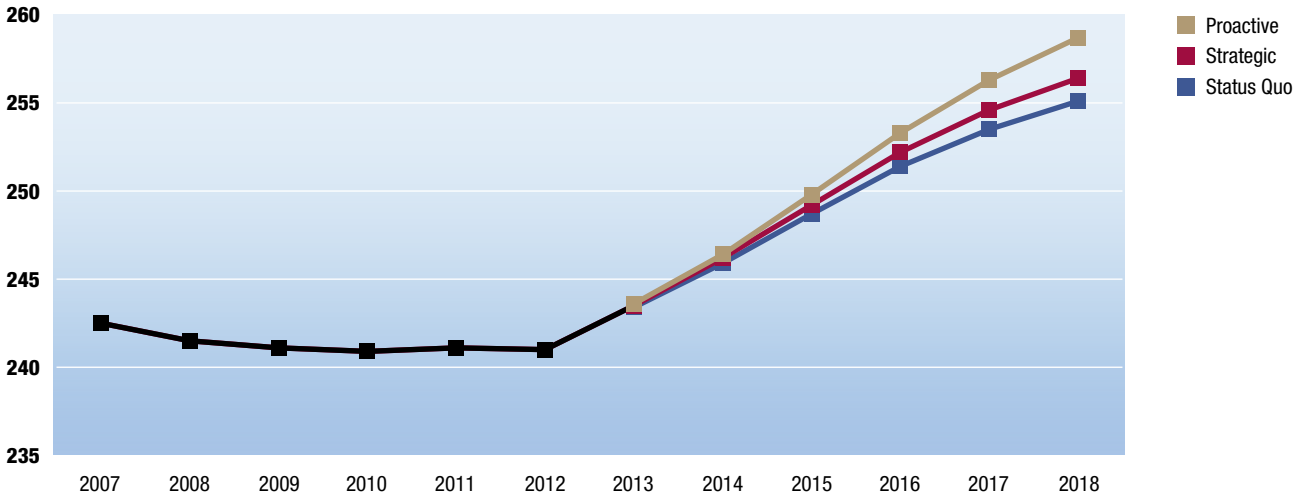
The population between 2013 and 2018 increases across all scenarios: 15,100 under the Proactive Scenario, where all needed workers move permanently to the region; 12,900 under the Strategic Scenario, where 60% move to the region; and 11,700 under the Status Quo Scenario, where 20% of the needed workers move to the region. All scenarios reflect significant population growth following several years of decline (see Figure 4).

The increase in population leads to increases in household formations[9] of 8,000, 7,200 and 6,008, respectively, across the three scenarios. It should also be noted that the population in the region continues to age over the next few years in all three scenarios. The increased household formation leads to increases in housing starts over the period, driving increased residential investment.

Employment by Industry

As shown in Figure 5, there is increased activity in the labour market with employment, all industries, rising by 5,100, 3,900 and 3,800 workers over the 2014 to 2018 period for the Proactive, Strategic and Status Quo scenarios, respectively. The renewed growth brings total employment back to levels reported in 2007. Between 2007 and 2013, weakened economic growth and declining population translated into job losses for some industries

Figure 4: Population (000s)



Sources: Statistics Canada and BuildForce Canada

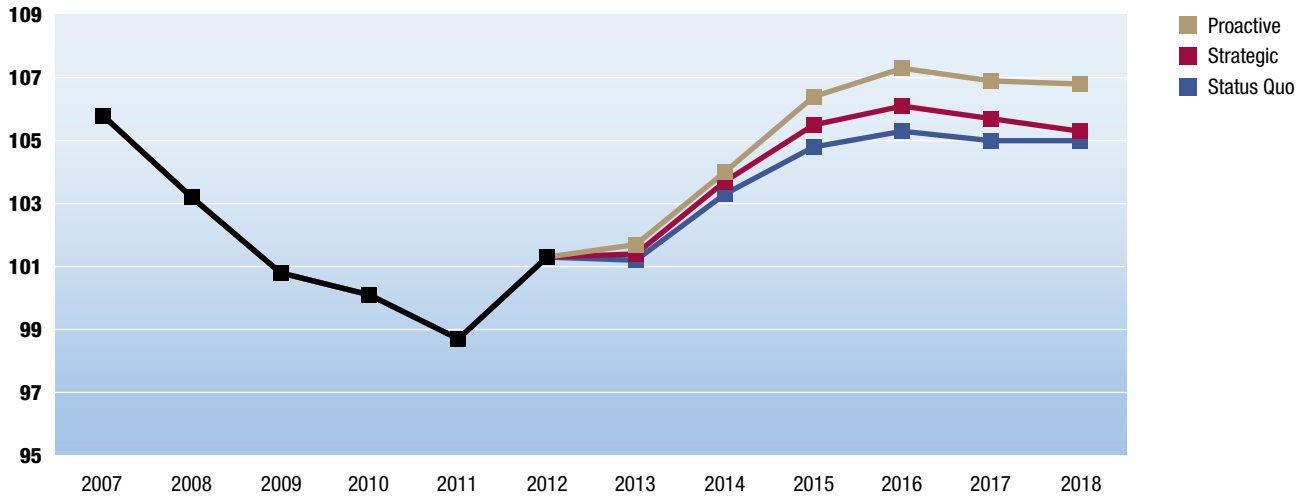
[9] *Household formation refers to the change in the number of households (persons living under one roof or occupying a separate housing unit) from one year to the next. It is the means by which population growth is transformed into demand for new housing.*

compared to employment growth for the other primary (mining) and construction industries, driven by major mine development projects. Health and social services reported employment growth driven by an aging population. Between 2007 and 2013, job losses were reported for the following industries (see Table 3, next page):

- accommodation and food
- finance, insurance and real estate
- manufacturing
- retail and wholesale trade
- transportation and warehousing
- government services

Similar to the 2007 to 2013 period, projected employment gains over the near term (2014 to 2018) are concentrated in construction, other primary (mining) and health and social services. The largest increases in employment are observed in the other primary and construction industries. The other primary industry includes fishing, forestry and mining. The increase in this category largely reflects the increase in employment in the mining industry associated with the start of operations of the major mining projects mentioned earlier in this report. The Proactive Scenario has the largest increase in employment, as it assumes that the workers will move to the region. It should be noted that some of the changes in this category may reflect the impact of the projects on the other industries in this category.

Figure 5: Total Employment, All Industries (000s)



Sources: Statistics Canada and BuildForce Canada

Table 3: Employment by Industry (000s)

	2007	2012	2013	2014	2015	2016	2017	2018	Change 2007–2013	Change 2014–2018
Agriculture										
Proactive	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	0.0	0.0
Strategic	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	0.0	0.1
Status Quo	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	0.0	0.1
Other Primary										
Proactive	3.1	4.2	4.5	4.7	5.3	5.7	5.5	6.6	1.4	2.1
Strategic	3.1	4.2	4.4	4.7	5.0	5.1	5.0	5.3	1.3	1.0
Status Quo	3.1	4.2	4.4	4.7	5.0	5.2	5.0	5.4	1.3	1.0
Construction										
Proactive	5.5	6.5	6.8	7.6	8.8	9.2	9.1	8.2	1.3	1.4
Strategic	5.5	6.5	6.7	7.3	8.2	8.4	8.2	7.5	1.2	0.8
Status Quo	5.5	6.5	6.4	6.9	7.4	7.5	7.2	6.8	0.9	0.4
Utilities										
Proactive	2.5	2.8	2.9	2.9	2.9	2.9	2.8	2.7	0.4	-0.2
Strategic	2.5	2.8	2.9	2.9	2.9	2.9	2.8	2.8	0.4	-0.1
Status Quo	2.5	2.8	2.9	2.9	2.9	2.9	2.8	2.8	0.4	-0.1
Manufacturing										
Proactive	10.4	6.9	7.0	7.3	7.5	7.4	7.3	7.2	-3.4	0.2
Strategic	10.4	6.9	7.0	7.3	7.5	7.5	7.4	7.4	-3.4	0.4
Status Quo	10.4	6.9	7.0	7.3	7.5	7.5	7.5	7.4	-3.4	0.4

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	2007	2012	2013	2014	2015	2016	2017	2018	Change 2007–2013	Change 2014–2018
Transportion & Warehousing										
Proactive	7.2	4.6	5.1	5.4	5.5	5.5	5.5	5.5	-2.1	0.4
Strategic	7.2	4.6	5.1	5.4	5.5	5.5	5.5	5.5	-2.1	0.4
Status Quo	7.2	4.6	5.1	5.4	5.5	5.5	5.6	5.6	-2.1	0.5
Retail & Wholesale Trade										
Proactive	7.2	4.6	5.1	5.4	5.5	5.5	5.5	5.5	-2.1	0.4
Strategic	7.2	4.6	5.1	5.4	5.5	5.5	5.5	5.5	-2.1	0.4
Status Quo	7.2	4.6	5.1	5.4	5.5	5.5	5.6	5.6	-2.1	0.5
Finance, Insurance & Real Estate										
Proactive	7.2	4.6	5.1	5.4	5.5	5.5	5.5	5.5	-2.1	0.4
Strategic	7.2	4.6	5.1	5.4	5.5	5.5	5.5	5.5	-2.1	0.4
Status Quo	7.2	4.6	5.1	5.4	5.5	5.5	5.6	5.6	-2.1	0.5
Business Services										
Proactive	6.5	7.2	7.0	6.9	6.8	6.8	6.7	6.6	0.5	-0.4
Strategic	6.5	7.2	7.0	6.9	6.8	6.8	6.7	6.7	0.5	-0.3
Status Quo	6.5	7.2	7.0	6.9	6.9	6.8	6.8	6.7	0.5	-0.3
Accomodation & Food										
Proactive	7.3	7.0	7.0	7.0	7.0	7.1	7.0	7.0	-0.3	0.0
Strategic	7.3	7.0	7.0	7.0	7.1	7.1	7.1	7.1	-0.3	0.1
Status Quo	7.3	7.0	7.0	7.0	7.1	7.1	7.1	7.1	-0.3	0.1

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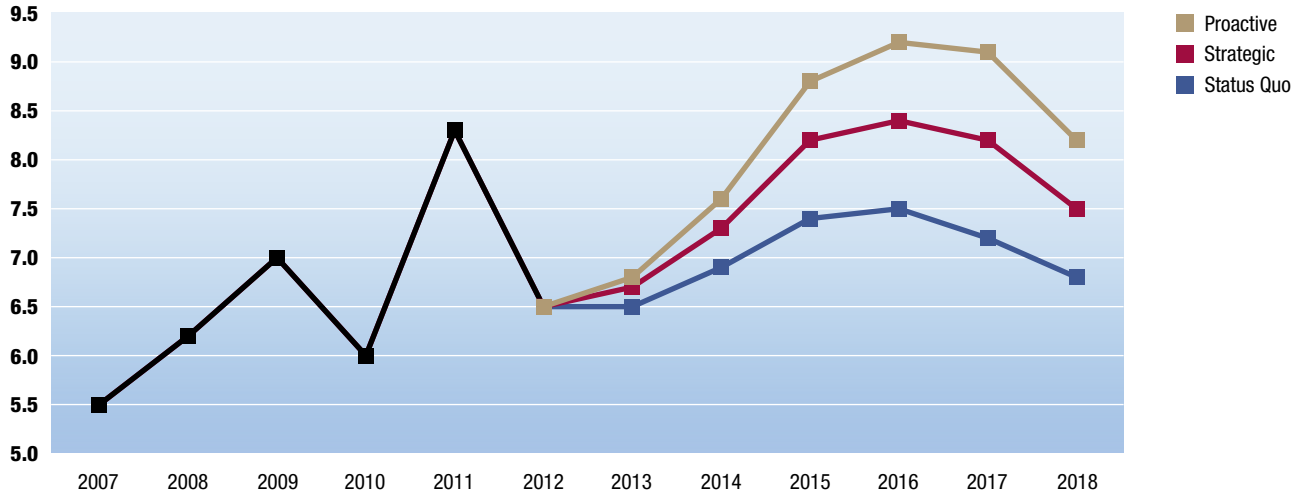
	2007	2012	2013	2014	2015	2016	2017	2018	Change 2007–2013	Change 2014–2018
Other Private Services										
Proactive	9.4	8.1	8.1	8.1	8.2	8.2	8.2	8.2	-1.3	0.1
Strategic	9.4	8.1	8.1	8.1	8.2	8.2	8.2	8.3	-1.3	0.2
Status Quo	9.4	8.1	8.1	8.1	8.2	8.2	8.3	8.3	-1.3	0.2
Education Services										
Proactive	9.5	10.0	9.4	9.3	9.2	9.2	9.2	9.1	-0.1	-0.3
Strategic	9.5	10.0	9.4	9.3	9.2	9.2	9.1	9.0	-0.1	-0.4
Status Quo	9.5	10.0	9.4	9.3	9.2	9.2	9.1	9.0	-0.1	-0.4
Health & Social Services										
Proactive	16.7	18.3	17.9	18.1	18.4	18.6	18.8	19.0	1.2	1.1
Strategic	16.7	18.3	17.9	18.1	18.3	18.5	18.8	18.9	1.2	1.0
Status Quo	16.7	18.3	17.9	18.1	18.3	18.5	18.7	18.9	1.2	1.0
Government Services										
Proactive	8.2	9.1	7.9	8.0	8.0	8.1	8.2	8.3	-0.3	0.4
Strategic	8.2	9.1	7.9	7.9	8.0	8.1	8.2	8.2	-0.3	0.3
Status Quo	8.2	9.1	7.9	7.9	80	8.1	8.1	8.1	-0.3	0.2

Sources: Statistics Canada and BuildForce Canada

Figure 6: Construction Industry Employment (000s)

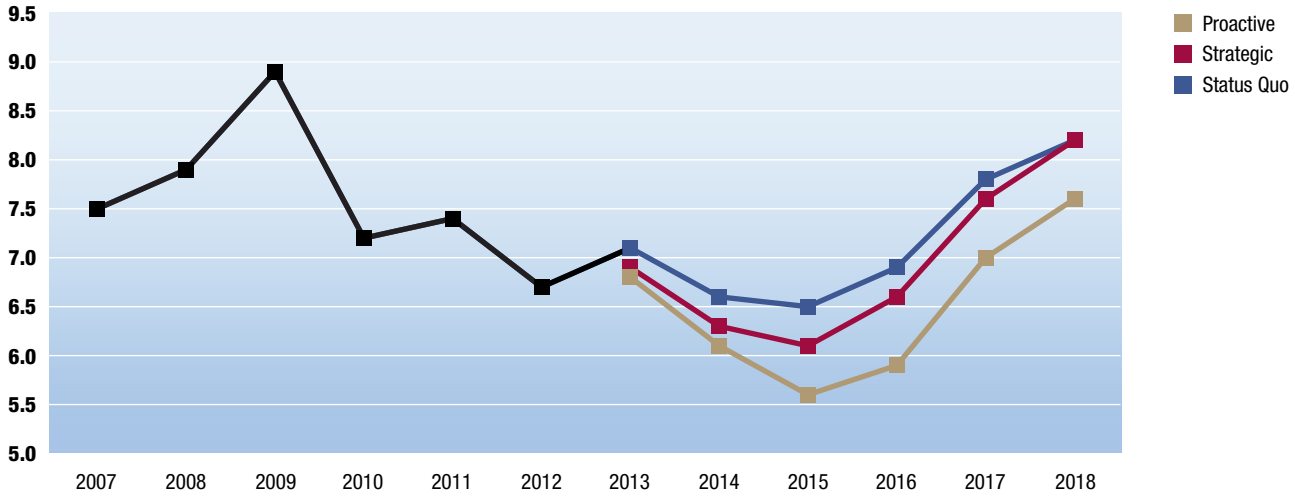


Sources: Statistics Canada and BuildForce Canada

For construction, employment has been trending up over the last few years with renewed growth in resources development and infrastructure spending. Investment and employment were strong in 2011, driven partially by the government stimulus spending, but then declined in 2012 as the stimulus program ended. Increased resource development, utilities and industrial spending renew growth between 2014 and 2018, with employment peaking in 2016 as major project activity approaches its peak, and then declining as major projects wind down. Employment declines back to 2013 levels under the Status Quo Scenario, back to just less than the 2011 peak under the Strategic Scenario, and to around the 2011 peak under the Proactive Scenario.

Figure 6 shows employment in the construction industry, with the peak at 9,400 under the Proactive Scenario, 8,200 for the Strategic Scenario and 7,500 under the Status Quo Scenario, compared to an average of 6,500 workers over the last few years between 2007 and 2013.

Figure 7: Unemployment Rates, All Industries (%)



Sources: Statistics Canada and BuildForce Canada

Unemployment Rate

Figure 7 shows unemployment rates across the three scenarios. The strong increase in construction activity and its spin-off impacts causes a significant drop in the unemployment rate, with low levels not seen in many years for the Strategic and Proactive scenarios. These drops suggest a significant tightening of the region's labour market over the next two or three years. As investment expenditures peak (both residential and non-residential) and then begin to decline, unemployment rates rise as total employment falls as projects wind down. It should be noted that these rates will cycle back down once the operations phase of the major projects begin, but unemployment rates over the next few years are well below traditional levels, averaging 7.5% for the region, compared to between 5.5% and 6.0% for 2014 to 2016.

INVESTMENT EXPENDITURES

The investment expenditures associated with the three scenarios are shown in Table 4. These expenditures are measured in millions of 2007 dollars (adjusted for inflation). The format of the table is similar to that for Table 2. The residential construction expenditures differ from those shown in Table 2, as they do not include real estate transactions. The non-residential construction expenditures differ, as they do not include machinery and equipment investment expenditures.

Table 4: Construction Investment Expenditures ($2007 Millions*)

	2007	2012	2013	2014	2015	2016	2017	2018	Change 2007–2013	Change 2014–2018
Residential Construction										
Proactive	199	290	341	430	489	518	482	442	142	101
Strategic	199	290	338	419	464	477	431	388	139	50
Status Quo	199	290	334	408	445	449	402	368	135	34
New Housing										
Proactive	*97*	*126*	*173*	*258*	*312*	*337*	*301*	*262*	*76*	*89*
Strategic	*97*	*126*	*170*	*247*	*289*	*298*	*253*	*212*	*73*	*42*
Status Quo	*97*	*126*	*166*	*237*	*271*	*272*	*226*	*194*	*69*	*28*
Renovations										
Proactive	*102*	*164*	*168*	*172*	*177*	*181*	*181*	*180*	*66*	*12*
Strategic	*102*	*164*	*168*	*172*	*175*	*179*	*178*	*176*	*66*	*8*
Status Quo	*102*	*164*	*168*	*171*	*174*	*177*	*176*	*174*	*66*	*6*
Non-Residential Construction										
Proactive	579	1,259	1,249	1,410	1,856	1,945	2,155	1,570	670	320
Strategic	579	1,259	1,249	1,410	1,853	1,939	2,149	1,562	670	313
Status Quo	579	1,259	1,249	1,408	1,851	1,937	2,144	1,560	670	311

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	2007	2012	2013	2014	2015	2016	2017	2018	Change 2007–2013	Change 2014–2018
Engineering Construction										
Proactive	*363*	*959*	*935*	*1,068*	*1,450*	*1,526*	*1,724*	*1,221*	*572*	*286*
Strategic	*363*	*959*	*935*	*1,068*	*1,448*	*1,522*	*1,720*	*1,216*	*572*	*281*
Status Quo	*363*	*959*	*935*	*1,067*	*1,447*	*1,520*	*1,717*	*1,214*	*572*	*279*
Building Construction**										
Proactive	*216*	*300*	*314*	*342*	*406*	*419*	*431*	*349*	*98*	*35*
Strategic	*216*	*300*	*314*	*342*	*405*	*417*	*429*	*346*	*98*	*32*
Status Quo	*216*	*300*	*314*	*341*	*404*	*417*	*427*	*346*	*98*	*32*
Commercial										
Proactive	*64*	*63*	*71*	*77*	*81*	*84*	*82*	*81*	*7*	*10*
Strategic	*64*	*63*	*71*	*77*	*80*	*83*	*81*	*80*	*7*	*9*
Status Quo	*64*	*63*	*71*	*76*	*80*	*83*	*80*	*80*	*7*	*9*
Industrial										
Proactive	*48*	*110*	*117*	*139*	*197*	*204*	*216*	*137*	*69*	*20*
Strategic	*48*	*110*	*117*	*139*	*197*	*204*	*216*	*136*	*69*	*19*
Status Quo	*48*	*110*	*117*	*139*	*196*	*204*	*215*	*136*	*69*	*19*
Institutional & Government										
Proactive	*104*	*127*	*126*	*126*	*128*	*131*	*133*	*131*	*22*	*5*
Strategic	*104*	*127*	*126*	*126*	*128*	*130*	*132*	*130*	*22*	*4*
Status Quo	*104*	*127*	*126*	*126*	*128*	*130*	*132*	*130*	*22*	*4*

* Due to inflation, the purchasing power of the dollar changes over time, so in order to compare dollar values from one year to another, they need to be converted from current dollar values to constant dollar values; in this case, $2007.

** Sum of commercial, industrial and institutional & government construction

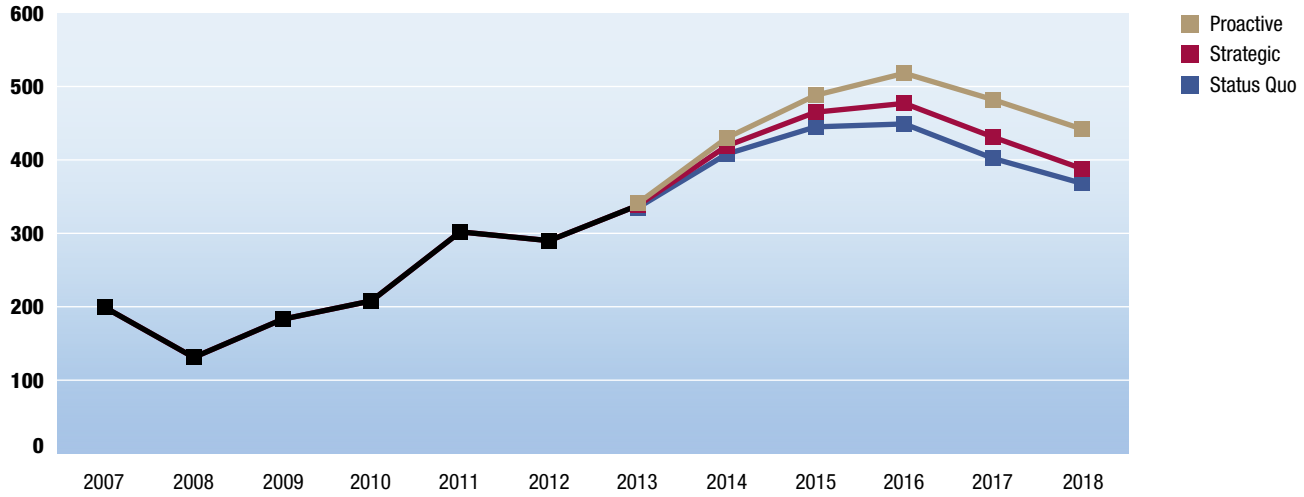
Sources: Statistics Canada and BuildForce Canada

Residential Construction

Residential construction expenditures increase in all three scenarios (see Figure 8) in response to the increase in household formation, additional households leading to new housing expenditures, and higher renovation expenditures associated with higher personal disposable income and increases in the stock of housing. Expenditures rise to 2016 in line with increased household growth and then decline as household growth slows, but levels of investment stay well above historical levels across all three scenarios. The 2016 peaks are well above 2013 levels of investment:

- 50% increase under the Proactive Scenario, from $518 million in 2016 compared to $341 million in 2013
- 40% increase under the Strategic Scenario
- 34% increase under the Status Quo Scenario, with the lowest population growth

Figure 8: Residential Construction Expenditures ($2007 Millions*)



* Due to inflation, the purchasing power of the dollar changes over time, so in order to compare dollar values from one year to another, they need to be converted from current dollar values to constant dollar values; in this case, $2007.

Sources: Statistics Canada and BuildForce Canada

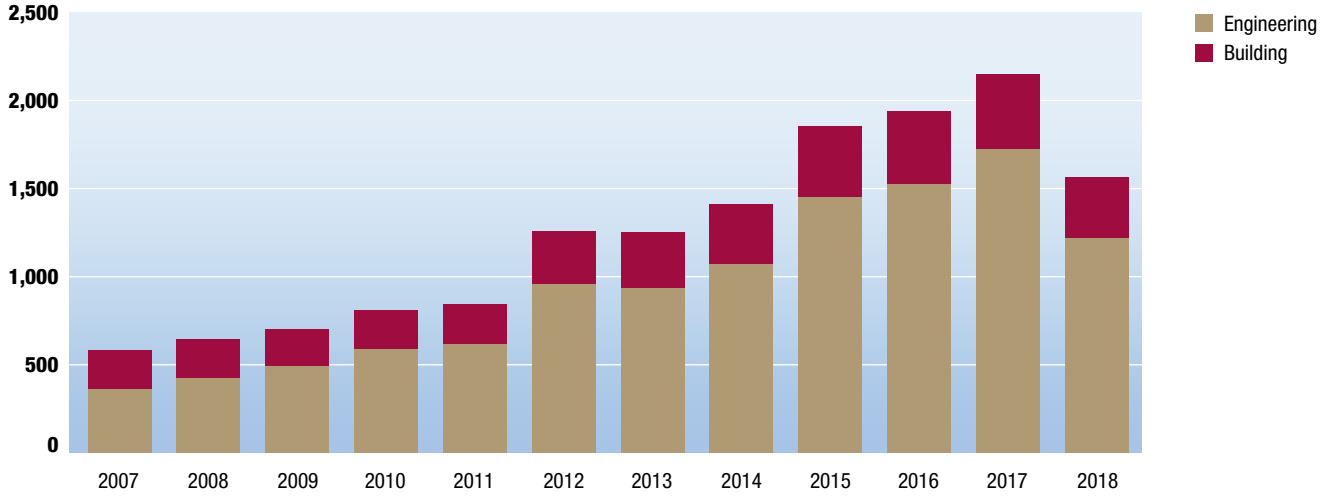
Non-Residential Construction

Non-residential construction expenditures show the largest increase over the scenario period in line with the significant amount of major project investment (see Figure 9). Engineering construction (civil and heavy industrial construction) represents the largest amount of investment, as it is the type of investment associated with most of the major projects. The level of non-residential investment in 2017 is almost three times greater than that observed in the 2007 to 2011 period. The subsequent decline in investment is consistent with the completion of a number of major projects described above. It leads to a reduction in construction employment under all three scenarios.

Among the building construction categories (industrial, commercial, institutional and government) it is industrial building construction that shows the largest increase, which is associated largely with the major projects. Institutional and government investment rises in line with increased expenditures on public infrastructure associated with a growing population.

Investment expenditures are **only reported for the Strategic Scenario**. There are only minor variations across the scenarios, as the major project investments are the same under each one. There are only minor differences in indirect non-residential construction activity, driven by changes to population growth and the associated impacts on consumer and business services. Changes to the population are driven primarily by the assumed share of new workers permanently moving to the region under each scenario.

Figure 9: Non-Residential Construction Expenditures, Strategic Scenario ($2007 Millions*)



* Due to inflation, the purchasing power of the dollar changes over time, so in order to compare dollar values from one year to another, they need to be converted from current dollar values to constant dollar values; in this case, $2007.

Sources: Statistics Canada and BuildForce Canada

TRADES WORKFORCE OUTLOOK

The outlook for the construction trades workforce is separated into demand, supply and the balance between demand and supply (market tightness as measured by unemployment rates). The latter discussion focuses on the expected difficulty of finding the workforce supply needed to meet skilled labour demands.

Demand

Non-residential construction dominates the job creation landscape across the 2014 to 2018 period, driven by the current and proposed major resource development, utilities and industrial projects. Increased residential, commercial and institution activity also adds to the employment demands across the period. Demographics offer a second challenge, as the rising age profile of the workforce adds to retirements and the need to replace retiring workers. As older workers exit, they take valuable skills and experience and leave behind a need for critical recruiting and training investments.

The change in future workforce demand requirements (employment opportunities) is derived from the requirements associated with rising (or falling) employment, including the number of people normally unemployed (expansion demand) and those needed to replace the number of workers leaving the labour force due to retirement (replacement demand).

The outlook for employment and population described previously suggests rapidly rising workforce demand, as well as increasing retirements, both of which imply new job openings over the next few years.

The outlook for employment opportunities for construction trades for the period 2014 to 2018 under the three scenarios is shown in tables 6 to 8 (seealong with their two components – expansion demand and replacement demand. The employment opportunities vary significantly by scenario, with the largest gains expected in the Proactive Scenario, with the demand for new workers estimated at 4,047. Demand requirements drop to 2,921 under the Status Quo Scenario, as only 20% of the labour demand will be sourced locally or through workers moving to the region. The remaining workers needed to build the projects would be non-resident workers working in the region, but maintaining residency outside the region. The Strategic Scenario labour requirement is in-between the Proactive and Status Quo scenarios, estimated at 3,308, with an estimated 60% of the labour demand sourced locally and/or through workers moving to the region. As can be seen in tables 6 to 8, replacement demand is an important component, exceeding expansion demand under requirements for all three scenarios. This reflects the aging local population and the need to replace expected retiring tradespeople.

Across each scenario the demand pressure increases sharply to 2015, in line with construction expenditures, and then eases as expenditure growth slows. The strongest years are 2014 and 2015 (see Table 5). For illustrative purposes, the trades with the highest demand pressures across the period as a whole under the Strategic Scenario are:

- carpenters
- concrete finishers
- construction millwrights
- drillers and blasters – surface mining, quarrying and construction
- electricians
- heavy-duty equipment mechanics
- heavy equipment operators (except crane)
- plumbers
- refrigeration and air conditioning mechanics
- steamfitters and pipefitters
- truck drivers
- construction managers
- contractors and supervisors

Annual total levels of employment by trade and occupation for the Proactive and Status Quo scenarios are reported in Appendix B.

Table 5: Strategic Scenario – Trades Employment, 2013 to 2018

Trades	2013	2014	2015	2016	2017	2018
Total Trades	**11,985**	**12,720**	**13,646**	**13,853**	**13,641**	**13,084**
Boilermakers	132	135	136	135	134	133
Bricklayers	108	117	132	135	133	121
Carpenters and cabinetmakers	1,503	1,622	1,807	1,846	1,813	1,672
Concrete finishers	48	53	60	61	60	54
Construction estimators	54	59	66	68	66	60
Construction managers	199	217	245	251	246	224
Construction millwrights and industrial mechanics	830	863	887	889	876	877
Contractors and supervisors, industrial, electrical and construction trades and related workers	415	441	477	484	477	450
Contractors and supervisors, maintenance trades and heavy equipment and transport operators	516	544	564	571	569	559
Crane operators	32	35	40	41	40	36

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Trades	2013	2014	2015	2016	2017	2018
Drillers and blasters – surface mining, quarrying and construction	75	81	89	91	89	87
Electrical power line and cable worker	302	310	317	316	309	299
Electricians	983	1,046	1,133	1,151	1,131	1,076
Elevator constructors and mechanics	37	38	39	39	39	38
Floor covering installers	59	64	73	75	73	67
Gasfitters	96	99	103	103	101	98
Glaziers	32	35	40	41	40	36
Heavy-duty equipment mechanics	687	719	753	766	752	764
Heavy equipment operators (except crane)	955	1,010	1,080	1,099	1,080	1,054
Home building and renovation managers	147	159	179	183	180	164
Insulators	81	88	99	102	100	91
Ironworkers and structural metal and platework fabricators and fitters	71	76	83	84	83	78
Painters and decorators (except interior decorators)	140	152	172	176	173	157
Plasterers, drywall installers and finishers and lathers	48	53	60	61	60	54
Plumbers	167	182	205	210	206	188
Refrigeration and air conditioning mechanics	162	176	198	203	199	181
Residential and commercial installers and servicers	159	171	188	192	188	175
Roofers and shinglers	86	94	106	108	106	97
Sheet metal workers	206	217	231	233	231	221
Steamfitters, pipefitters and sprinkler system installers	211	224	240	242	239	228
Trades helpers and labourers	1,186	1,267	1,387	1,413	1,389	1,300
Truck drivers	1,758	1,852	1,921	1,942	1,926	1,909
Welders and related machine operators	499	520	538	541	537	533

Source: BuildForce Canada

Supply

The changes in the supply of skilled trades for the 2014 to 2018 period are shown for the key components: new entrants and net in-mobility[10]. New entrants represent the entry of the younger population, aged 30 and younger, into the workforce for the first time on a permanent basis after receiving their education – it does not include apprentices, as the latter are already in the workforce. It should be noted that trades/occupations that require experience, such as construction managers, supervisors and contractors, do not generally have new entrants as a source of supply. The source of supply for such trades/occupations is found mainly through net in-mobility.

In-mobility acts as the residual source of labour, meeting demand requirements after accounting for new entrants. This means that when construction activity increases and the available new entrants are not sufficient to meet demand, in-mobility will measure recruiting from outside the industry or region. Alternatively, when markets weaken, out-mobility will track the potential movement of the workforce out to other industries or other provinces. In periods of rising construction, when local new entrants fall below requirements, in-mobility is the only supply-side option.

The supply change for the trades generally moves in line with demand over the period. For the Proactive, Strategic and Status Quo scenarios, respectively, the supply change for total trades is 4,301, 3,632 and 3,143. The largest source of supply is net in-mobility, of which net in-migration plays a major role. New entrants account for 35%, 41% and 44% of supply change for the Proactive, Strategic and Status Quo scenarios, respectively. New entrants from the local population are clearly not sufficient to facilitate the required supply requirements for the region. Migration is needed to meet demand requirements across all scenarios as reflected in the net in-mobility numbers. It is important to note that under each scenario, supply slightly overshoots demand requirements. The labour force typically continues to grow in response to the strong demand, with unemployment rising back to more normal levels as demand slows. Over the longer term labour markets balance.

The following sections summarize the demand and supply requirements by trade for each scenario.

Proactive Scenario

The Proactive Scenario assumes that 100% of the workers needed for the construction and operation of the projects are sourced locally through increased recruiting and supplemented by non-resident workers moving to the region as permanent residents. The increased population growth by workers moving to the region translates into additional construction activity and employment beyond the major projects, including increased housing, commercial and institutional services required to support the economic and population growth. By definition, the Proactive Scenario reflects the largest impact on the region.

Under this scenario, across the 2014 to 2018 period, expansion demand is estimated at 1,869 workers (see Table 6). Over the same period, replacement demand due to retirements, estimated at 2,178, adds to requirements, for an estimated total demand of 4,047 new workers to the region. The demand requirements will be partially offset by an estimated 1,522 new entrants from the younger local population. The remaining demand requirements estimated at 2,779 are met by net in-mobility.

[10] *In-mobility refers to the arrival of workers from outside the local construction industry.*

Table 6: Proactive Scenario – Trades Demand and Supply, 2014 to 2018

	Demand			Supply		
Trades	**Total Demand**	**Expansion**	**Replacement**	**Supply Change**	**New Entrants**	**Net in-Mobility**
Total Trades	**4,047**	**1,869**	**2,178**	**4,301**	**1,522**	**2,779**
Boilermakers	**14**	-2	16	**15**	15	0
Bricklayers	**32**	24	8	**35**	17	18
Carpenters and cabinetmakers	**484**	297	187	**530**	228	302
Concrete finishers	**22**	11	11	**23**	8	15
Construction estimators	**25**	11	14	**28**	9	19
Construction managers	**97**	41	56	**103**	0	103
Construction millwrights and industrial mechanics	**270**	75	195	**282**	109	173
Contractors and supervisors, industrial, electrical and construction trades and related workers	**159**	53	106	**168**	0	168
Contractors and supervisors, maintenance trades and heavy equipment and transport operators	**155**	50	105	**165**	0	165
Crane operators	**10**	8	2	**10**	5	5

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	Demand			Supply		
Trades	**Total Demand**	**Expansion**	**Replacement**	**Supply Change**	**New Entrants**	**Net in-Mobility**
Drillers and blasters – surface mining, quarrying and construction	**36**	25	11	**37**	10	27
Electrical power line and cable workers	**28**	-3	31	**35**	39	-4
Electricians	**448**	168	280	**471**	141	330
Elevator constructors and mechanics	**8**	3	5	**8**	5	3
Floor covering installers	**24**	13	11	**27**	10	17
Gasfitters	**24**	4	20	**27**	13	14
Glaziers	**15**	8	7	**15**	5	10
Heavy-duty equipment mechanics	**299**	164	135	**300**	95	205
Heavy equipment operators (except crane)	**383**	191	192	**393**	136	257
Home building and renovation managers	**61**	30	31	**65**	0	65
Insulators	**35**	18	17	**37**	13	24
Ironworkers and structural metal and platework fabricators and fitters	**23**	10	13	**24**	10	14

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	Demand			Supply		
Trades	**Total Demand**	**Expansion**	**Replacement**	**Supply Change**	**New Entrants**	**Net in-Mobility**
Painters and decorators (except interior decorators)	**50**	30	20	**55**	22	33
Plasterers, drywall installers and finishers and lathers	**14**	11	3	**17**	8	9
Plumbers	**80**	38	42	**87**	27	60
Refrigeration and air conditioning mechanics	**69**	34	35	**73**	24	49
Residential and commercial installers and servicers	**42**	26	16	**48**	24	24
Roofers and shinglers	**26**	19	7	**27**	14	13
Sheet metal workers	**50**	22	28	**54**	29	25
Steamfitters, pipefitters and sprinkler system installers	**77**	23	54	**81**	30	51
Trades helpers and labourers	**337**	213	124	**371**	174	197
Truck drivers	**516**	211	305	**549**	237	312
Welders and related machine operators	**134**	43	91	**141**	65	76

Source: BuildForce Canada

Status Quo Scenario

The Status Quo scenario assumes that only 20% of the workers needed for the construction and operation of the projects are sourced locally through increased recruiting and supplemented by non-resident workers moving to the region as permanent residents. The smaller share of non-resident workers moving to the region lowers the impact on regional population growth. The Status Quo Scenario reflects the least impact on employment opportunities for the region.

Under this scenario, across the 2014 to 2018 period, expansion demand is estimated at 889 workers (see Table 7). Over the same period, replacement demand due to retirements, estimated at 2,032, adds to requirements. The total estimated demand requirement is 2,921 new workers to the region; 1,126 fewer workers compared to the Proactive Scenario. The demand requirements will be partially offset by an estimated 1,399 new entrants from the younger local population. The remaining demand requirements estimated at 1,744 are met by net in-mobility.

Table 7: Status Quo Scenario – Trades Demand and Supply, 2014 to 2018

	Demand			Supply		
Trades	**Total Demand**	**Expansion**	**Replacement**	**Supply Change**	**New Entrants**	**Net in-Mobility**
Total Trades	**2,921**	**889**	**2,032**	**3,143**	**1,399**	**1,744**
Boilermakers	**18**	2	16	**22**	15	7
Bricklayers	**12**	6	6	**14**	15	-1
Carpenters and cabinetmakers	**257**	100	157	**281**	198	83
Concrete finishers	**12**	5	7	**13**	5	8
Construction estimators	**16**	5	11	**18**	5	13
Construction managers	**64**	13	51	**66**	0	66
Construction millwrights and industrial mechanics	**254**	59	195	**270**	109	161
Contractors and supervisors, industrial, electrical and construction trades and related workers	**120**	**22**	98	**125**	0	125

Continued on next page

	Demand			Supply		
Trades	**Total Demand**	**Expansion**	**Replacement**	**Supply Change**	**New Entrants**	**Net in-Mobility**
Contractors and supervisors, maintenance trades and heavy equipment and transport operators	**144**	**41**	103	**154**	0	154
Crane operators	**4**	2	2	**5**	5	0
Drillers and blasters – surface mining, quarrying and construction	**20**	10	10	**22**	10	12
Electrical power line and cable workers	**26**	-4	30	**32**	39	-7
Electricians	**339**	73	266	**355**	129	226
Elevator constructors and mechanics	**8**	3	5	**8**	5	3
Floor covering installers	**14**	5	9	**16**	9	7
Gasfitters	**22**	2	20	**24**	10	14
Glaziers	**9**	2	7	**9**	5	4
Heavy-duty equipment mechanics	**216**	84	132	**226**	91	135
Heavy equipment operators (except crane)	**272**	92	180	**287**	126	161
Home building and renovation managers	**36**	9	27	**39**	0	39
Insulators	**20**	5	15	**21**	10	11

Continued on next page

	Demand			Supply		
Trades	**Total Demand**	**Expansion**	**Replacement**	**Supply Change**	**New Entrants**	**Net in-Mobility**
Ironworkers and structural metal and platework fabricators and fitters	**16**	4	12	**18**	10	8
Painters and decorators (except interior decorators)	**24**	10	14	**27**	20	7
Plasterers, drywall installers and finishers and lathers	**5**	5	0	**7**	5	2
Plumbers	**51**	11	40	**54**	22	32
Refrigeration and air conditioning mechanics	**40**	11	29	**44**	20	24
Residential and commercial installers and servicers	**24**	11	13	**28**	20	8
Roofers and shinglers	**10**	6	4	**11**	10	1
Sheet metal workers	**39**	13	26	**44**	26	18
Steamfitters, pipefitters and sprinkler system installers	**65**	15	50	**70**	28	42
Trades helpers and labourers	**179**	74	105	**201**	154	47
Truck drivers	**457**	156	301	**496**	233	263
Welders and related machine operators	**128**	37	91	**136**	65	71

Source: BuildForce Canada

Strategic Scenario

The Strategic Scenario reflects a middle reference point between the Proactive Scenario, where it is assumed all needed workers move to the region to meet demand requirements, and the Status Quo Scenario, where an estimated 20% move to the region. Under the Strategic Scenario, 60% of the workers needed for the construction and operation of the projects are sourced locally through increased recruiting and supplemented by non-resident workers moving to the region as permanent residents. The employment impacts fall between the Proactive and Status Quo estimates.

Under this scenario, across the 2014 to 2018 period, expansion demand is estimated at 1,193 workers (see Table 8). Over the same period, replacement demand due to retirements, estimated at 1,490, adds to requirements. Total demand is estimated at 3,308 new workers. The demand requirements will be partially offset by an estimated 1,490 new entrants from the younger local population. The remaining demand requirements estimated at 2,142 are met by net in-mobility.

Table 8: Strategic Scenario – Trades Demand and Supply, 2014 to 2018

	Demand			Supply		
Trades	**Total Demand**	**Expansion**	**Replacement**	**Supply Change**	**New Entrants**	**Net in-Mobility**
Total Trades	**3,308**	**1,193**	**2,115**	**3,632**	**1,490**	**2,142**
Boilermakers	16	0	16	18	15	3
Bricklayers	20	15	5	24	15	9
Carpenters and cabinetmakers	361	188	173	404	215	189
Concrete finishers	18	8	10	18	5	13
Construction estimators	21	8	13	22	9	13
Construction managers	78	25	53	85	0	85
Construction millwrights and industrial mechanics	244	49	195	262	108	154

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	Demand			Supply		
Trades	Total Demand	Expansion	Replacement	Supply Change	New Entrants	Net in-Mobility
Contractors and supervisors, industrial, electrical and construction trades and related workers	138	36	102	147	0	147
Contractors and supervisors, maintenance trades and heavy equipment and transport operators	148	45	103	163	0	163
Crane operators	7	4	3	9	5	4
Drillers and blasters – surface mining, quarrying and construction	24	13	11	25	10	15
Electrical power line and cable workers	26	-4	30	36	39	-3
Electricians	379	103	276	404	136	268
Elevator constructors and mechanics	8	3	5	8	5	3
Floor covering installers	19	8	11	20	10	10
Gasfitters	22	2	20	26	12	14
Glaziers	13	4	9	12	5	7
Heavy-duty equipment mechanics	215	81	134	226	91	135
Heavy equipment operators (except crane)	294	107	187	314	131	183
Home building and renovation managers	47	18	29	50	0	50

Continued on next page

	Demand			Supply		
Trades	Total Demand	Expansion	Replacement	Supply Change	New Entrants	Net in-Mobility
Insulators	27	12	15	29	10	19
Ironworkers and structural metal and platework fabricators and fitters	20	7	13	21	10	11
Painters and decorators (except interior decorators)	36	19	17	40	20	20
Plasterers, drywall installers and finishers and lathers	9	8	1	10	5	5
Plumbers	65	24	41	70	24	46
Refrigeration and air conditioning mechanics	53	22	31	58	24	34
Residential and commercial installers and servicers	34	17	17	38	22	16
Roofers and shinglers	16	12	4	20	12	8
Sheet metal workers	44	17	27	49	29	20
Steamfitters, pipefitters and sprinkler system installers	70	18	52	76	30	46
Trades helpers and labourers	246	129	117	304	194	110
Truck drivers	463	160	303	507	234	273
Welders and related machine operators	127	35	92	137	65	72

Source: BuildForce Canada

Looking across all three scenarios, increased demand requirements are not met by local new entrants, which account for only 35% to 45% of the needed supply. Net in-mobility, therefore, plays a critical role in meeting demand requirements and accounts for the largest share of labour supply across all scenarios. Even during periods of limited employment growth, as major projects wind down, long-term demographic pressures enforce the need to attract new workers to the region.

Industry will need to increase recruiting efforts targeting local youth, women, Aboriginal people, other industries and new Canadians to meet the estimated net in-mobility requirements. In-mobility requirements range from a low of 1,700 workers under the Status Quo Scenario up to almost 2,800 workers under the Proactive Scenario, where 100% of the workforce is resident workers (see Table 9). Under the Strategic Scenario, in-mobility is estimated at 2,100 new workers.

Table 9: Demand and Supply Requirements Summary

	Proactive	Status Quo	Strategic
Percent of non-resident workers moving to region to meet demand requirements (%)	100	20	60
Total Demand	**4,047**	**2,921**	**3,308**
Expansion Demand	1,869	889	1,193
Replacement Demand (Deaths & Retirements)	2,178	2,032	2,115
Supply Change	**4,301**	**3,143**	**3,632**
New Entrants	1,522	1,399	1,490
Net In-Mobilty (Migration & Other)	2,779	1,744	2,142

Source: BuildForce Canada

Even after accounting for new entrants and in-mobility (including workers moving to the region) the industry will still need to recruit temporary workers to build the proposed major projects. Between 890 (Strategic) to 1,780 (Status Quo) temporary workers would be needed on a fly-in, fly-out or temporary basis to meet peak demand requirements (see Table 10). These workers are in addition to the number of expansion demand workers reported in Table 9. No temporary workers are needed under the Proactive Scenario, as all labour requirements are assumed to be resident workers, recruited locally or moved permanently to the region.

Table 10: Temporary Non-resident Workers

	Proactive	Status Quo	Strategic
Additional temporary non-resident workers needed to meet major projects demand	0	890	1,780

Source: BuildForce Canada

Workforce Market Balance

The demand and supply outlooks for the construction trades suggest a tighter labour market over the next couple of years before an easing in tightness as investment expenditures weaken near the end of the 2014 to 2018 period. The information shown in tables 6 to 8 (pages 33 to 39) indicates strong demand for construction trades and occupations. An examination of the unemployment rates for the trades reinforces this picture for increased market tightness. Unemployment rates for all trades are low relative to the more normal rates in 2013 and get farther below the normal rates to 2015. They then move back to normal rates in 2018 as demand weakens.

Table 11 (next page) shows the annual average unemployment rates for the trades and occupations under the Strategic Scenario. In some cases rates may seem high; however, trades that work largely in the construction industry tend to include a seasonal factor where average annual unemployment tends to be higher to meet seasonal or peak levels of demand. This is especially true in northern locations where the construction season may be shorter. For such trades, the unemployment rate is typically 3 to 4 percentage points lower during peak periods of construction activity. Subtracting 3 or 4 percentage points from these rates would indicate difficulties in meeting peak trade requirements.

Trades with relatively low unemployment rates – less than 5% – particularly in 2014 and 2015, include:

- construction millwrights
- crane operators
- drillers and blasters – surface mining, quarrying and construction
- heavy-duty equipment mechanics
- ironworkers
- refrigeration and air conditioning mechanics
- residential and commercial installers and servicers
- sheet metal workers
- welders and related machine operators
- construction estimators
- construction managers
- contractors and supervisors
- home building and renovation managers

Table 11: Strategic Scenario – Annual Average Unemployment Rates (%), 2013 to 2018

Trades	2013	2014	2015	2016	2017	2018
Boilermakers	5.6	5.3	5.2	5.8	6.7	7.3
Bricklayers	10.3	8.7	7.8	9.3	10.8	12.5
Carpenters and cabinetmakers	10.4	8.9	8.0	9.3	10.8	12.4
Concrete finishers	10.4	8.8	7.8	9.3	10.8	12.5
Construction estimators	3.5	1.6	1.6	2.4	4.0	5.8
Construction managers	1.9	1.1	1.6	1.1	2.5	4.4
Construction millwrights and industrial mechanics	5.5	5.0	4.9	5.6	6.7	7.2
Contractors and supervisors, industrial, electrical and construction trades and related workers	2.5	1.1	1.4	1.8	3.1	4.5
Contractors and supervisors, maintenance trades and heavy equipment and transport operators	5.5	4.9	4.8	5.4	6.6	7.5
Crane operators	6.2	4.5	3.5	5.1	6.7	8.5
Drillers and blasters – surface mining, quarrying and construction	5.7	4.6	3.9	5.1	6.8	7.6
Electrical power line and cable workers	9.8	9.5	9.2	9.9	11.0	11.8

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Trades	2013	2014	2015	2016	2017	2018
Electricians	10.1	9.0	8.4	9.5	10.8	12.0
Elevator constructors and mechanics	5.1	5.0	5.1	5.7	6.6	7.3
Floor covering installers	10.4	8.8	7.8	9.3	10.8	12.5
Gasfitters	9.7	9.3	9.0	9.8	10.9	11.8
Glaziers	10.4	8.8	7.8	9.3	10.8	12.5
Heavy-duty equipment mechanics	5.5	5.0	4.6	5.3	6.7	7.0
Heavy equipment operators (except crane)	6.4	5.4	4.9	5.8	7.3	8.1
Home building and renovation managers	2.0	1.1	1.7	1.1	2.5	4.3
Insulators	10.4	8.8	7.8	9.3	10.8	12.5
Ironworkers and structural metal and platework fabricators and fitters	6.0	4.7	4.0	5.3	6.7	8.1
Painters and decorators (except interior decorators)	10.4	8.8	7.8	9.3	10.8	12.5
Plasterers, drywall installers and finishers and lathers	10.4	8.8	7.8	9.3	10.8	12.5
Plumbers	10.4	8.8	7.8	9.3	10.8	12.5
Refrigeration and air conditioning mechanics	6.2	4.5	3.5	5.1	6.7	8.5
Residential and commercial installers and servicers	6.5	5.2	4.4	5.8	7.2	8.8
Roofers and shinglers	10.4	8.8	7.8	9.3	10.8	12.5
Sheet metal workers	5.8	4.9	4.4	5.4	6.7	7.8
Steamfitters, pipefitters and sprinkler system installers	10.0	9.0	8.6	9.6	10.8	11.9
Trades helpers and labourers	13.3	12.1	11.4	12.5	13.8	15.1
Truck drivers	5.8	5.4	5.3	6.0	7.1	7.9
Welders and related machine operators	5.6	5.0	4.8	5.5	6.6	7.3

Source: BuildForce Canada

The added challenge is that the Northwest region will be competing against other parts of Ontario and the rest of Canada for the needed workers. The 2014 *Construction and Maintenance Looking Forward* report assessing Canadian labour market conditions shows strong or steady investment growth in several provinces over the next five years, with increased demand for a similar group of trades that will be in high demand in the Northwest Region. Provincial highlights include:

- Infrastructure projects, including transit expansion and refurbishment of nuclear power facilities in Ontario, will drive job growth over the next decade.
- Resource projects in Newfoundland and Labrador are expected to keep labour demands strong in 2014 and 2015.
- Proposed mining and pipeline projects and a new marine terminal in New Brunswick translate into increased demand requirements starting in 2016.
- Major hydro development projects increase labour demands in Manitoba.
- Expansion slows in Saskatchewan, but labour demands remain well above historical levels.
- Oil sands developments and sustaining capital and maintenance work in Alberta rise to new peak demands by 2019.
- Major new resource and infrastructure projects in northern British Columbia drive construction employment to an all-time high in 2017.
- Slower growth over the near term is expected in Quebec, Nova Scotia and Prince Edward Island.
- Across all provinces, age demographics add to the need to replace an aging workforce.

For more information, BuildForce national highlights are presented in Appendix C.

CONCLUSION

If the proposed major projects proceed as scheduled, the Northwest will face significant labour market challenges. Over the next five years, expansion demand under the Strategic Scenario generates almost 1,200 new jobs for construction trades and occupations, driven by proposed resource developments and increased industrial and utilities work. In addition, age demographics translate into significant demand requirements, with an estimated 2,100 of the current workforce expected to retire over the same period.

The combined expansion and replacement demand under the Strategic Scenario requires an influx of around 3,300 new construction workers. Meeting trades requirement demand will take a combination of increased efforts to recruit local people, attract new permanent residents to the region, as well as using non-resident temporary workers to meet peak demand requirements to build the new proposed projects. Even for the Status Quo Scenario, where a low percentage of the needed workers are sourced locally, the demand requirements across the trades is significant.

Key construction trades and occupations in high demand across all three scenarios include:

- carpenters
- construction millwrights
- electricians
- heavy-duty equipment mechanics
- heavy equipment operators (except crane)
- plumbers
- refrigeration and air conditioning mechanics
- steamfitters and pipefitters
- trades helpers and labourers
- truck drivers
- welders
- construction managers
- contractors and supervisors

Industry will need to establish short- and long-term strategies that focus on supply solutions that maximize regional benefits and meet skilled labour demand requirements over the next five years. The construction industry and the Northwest region have launched recruiting drives that target youth, women, Aboriginal people and other new entrants. These types of programs must remain a priority if industry is to be competitive. Industry's ability to address market challenges will depend on the ability to track and adapt to changing demands in the face of a highly competitive marketplace, where many industries and provinces are facing similar age demographics.

Mapping the proposed schedules and measuring the demand requirements of the large resource development projects across the Northwest is only the first step in addressing industry needs. Strategies need to be established to address key challenges related to:

- the availability of local workers
- the portability of skills and willingness to work in remote locations
- getting workers to move and/or work in the Northwest region

The degree of the challenges will, in large part, be dependent on the timing of the numerous major resource projects, but the overarching message is that the construction industry will be challenged to meet skilled labour requirements over the next five years. Even if major project schedules change, factoring in the age demographics and the expected number of retirements over the next decade, the Northwest region will still need to replace a significant number of construction trades and occupations. The region's strong potential for resource development highlights the need for industry and training providers to be proactive to ensure the development of the local workforce to meet industry's needs now and for the foreseeable future.

APPENDIX A – DESCRIPTION OF THE ECONOMIC ASSUMPTIONS

The assumptions for commodity prices and trading partners are shown in Table A1. Assumptions for commodity prices and those for metals and minerals are based on the OECD (Organization for Economic Cooperation and Development), FAO (Food and Agricultural Organization of the United Nations) Agricultural Outlook, and the World Bank outlook for commodity prices. For the NSWPB analysis, commodity prices remain relatively high in historical terms. Nevertheless, they are assumed to weaken in the short term, consistent with the overall weak recovery of the world economy. Agricultural prices are assumed to weaken, particularly in the short term, but remain relatively stable in the long term. Prices for metals and minerals are expected to weaken in the short term as a result of weak global growth prospects. While prices are assumed to increase over the long term, the increases will be much smaller than those observed over the past few years.

The assumptions for oil and natural gas prices, which are derived from the 2013 Annual Energy Outlook of the U.S. Energy Information Administration, show both oil and gas prices increasing over the 2014 to 2018 period. Oil prices, as measured by the WTI (West Texas Intermediate) at Cushing, are assumed to exceed their previous peak of about US$100 per barrel in 2017, while those for natural gas, as measured at the Henry Hub, fail to return to their previous peak by 2018. The relatively weak performance of natural gas reflects the large increases in the amount of gas that is expected to be obtained from shale gas deposits across North America.

The assumption for general inflation, as measured by the GDP (gross domestic product) deflator, shows low inflation in the United States and Canada over the short term and an increase in Canada in the medium term. Economic growth strengthens in the United States over the 2014 to 2018 period, and Canada follows with stronger growth.

The U.S. interest rate, as measured by the 3-month treasury bill rate, is expected to remain below 1% until 2016 as the Federal Reserve Board attempts to boost the economy. The Federal Reserve has committed to keeping interest rates close to zero until the U.S. unemployment rate falls below 6.5%. As the recovery takes hold, the rate begins to rise and averages above 3.0% in the long term. The 10-year government bond rate averages 3.1% in the medium term and then rises to average 4.9% over the long term. The story is similar for the Canadian economy as it follows the U.S. rates upward.

In the medium term, the fiscal policies recently implemented by the federal and provincial governments in Canada are the assumptions adopted. Large deficits incurred as a result of the recession and the associated fiscal stimulus measures are assumed to require reductions in the rate of government expenditure growth. Such reductions started in 2012 after the economies recovered, at least somewhat, from the recession. These reductions result in slower economic growth after 2012.

Table A1: Commodity Prices and Trading Partner Performance

	2013	2014	2015	2016	2017	2018
Commodity Prices						
Agricultural $US 2007=1	1.31	1.35	1.31	1.25	1.21	1.20
% Change	*20.6*	*-0.6*	*-3.3*	*-4.6*	*-3.5*	*-0.4*
WTI Oil $US/BBL	91.03	92.82	94.15	98.95	105.59	110.18
% Change	*-3.4*	*2.0*	*1.4*	*5.1*	*6.7*	*4.3*
Henry Hub Natural Gas $US/MMBTU	3.51	3.42	3.47	4.02	4.23	4.60
% Change	*25.9*	*-2.6*	*1.4*	*15.9*	*5.2*	*8.7*
Metals & Minerals $US 2007=1	0.98	0.97	0.96	0.96	0.97	0.97
% Change	*0.7*	*-0.6*	*-1.5*	*0.6*	*0.5*	*0.6*
Trading Partner Performance						
United States						
Real GDP Growth %	1.9	2.8	3.0	3.1	3.1	2.7
GDP Deflator Inflation %	1.7	1.4	1.5	1.6	1.5	1.6
3-Month Treasury Bill Rate %	0.1	0.2	0.6	1.7	3.0	3.5
10-Year Government Bond Rate %	2.0	2.6	3.3	3.8	4.0	4.5
Canada						
Real GDP Growth %	1.8	2.0	2.2	2.6	2.6	2.2
GDP Deflator Inflation %	1.6	1.7	1.7	2.4	2.3	2.1
3-Month Treasury Bill Rate %	1.0	1.3	1.9	2.3	3.1	3.7
10-Year Government Bond Rate %	2.3	2.7	3.6	3.9	4.4	4.9

Source: BuildForce Canada

The reductions in government expenditures refer to goods and services expenditures, as well as transfers to persons and capital expenditures. Expenditures are reduced in real per capita terms, with larger reductions in government services expenditures relative to health and social service expenditures. In many cases these reductions lead to declines in real expenditures, with the largest reductions seen for capital investment. For goods and services expenditures, nominal expenditures do not decline, but grow at a slower rate. The federal government reduces growth in transfers to the provinces and other expenditures to achieve a balanced budget.

It is assumed that the primary target of monetary policy is to keep inflation low. Given low expected U.S. rates in the short to medium term, the Bank of Canada is expected to increase rates slowly in order to increase economic growth, while attempting to achieve its inflation targets. Its target CPI (consumer price index) inflation rate is set at 2.0% per year over the 2014 to 2018 period. Falling unemployment rates in the long term, caused by slow labour force growth, lead the Bank of Canada to raise interest rates to reduce the resulting inflationary pressures.

APPENDIX B – TOTAL EMPLOYMENT BY TRADE AND OCCUPATION, 2014 TO 2018

Table B1: Proactive Scenario – Trades Employment, 2013 to 2018

	2013	2014	2015	2016	2017	2018
Total	**12,148**	**12,998**	**14,262**	**14,638**	**14,494**	**13,852**
Boilermakers	132	135	136	135	132	131
Bricklayers	110	122	143	149	148	132
Carpenters and cabinetmakers	1,537	1,683	1,935	2,004	1,992	1,802
Concrete finishers	50	55	64	67	66	59
Construction estimators	55	61	71	74	74	66
Construction managers	204	226	264	275	273	244
Construction millwrights and industrial mechanics	833	866	897	905	889	903
Contractors and supervisors, industrial, electrical and construction trades and related workers	422	453	501	513	510	473
Contractors and supervisors, maintenance trades and heavy equipment and transport operators	519	548	574	582	580	566
Crane operators	33	37	43	45	44	40
Drillers and blasters – surface mining, quarrying and construction	77	83	95	101	99	100
Electrical power line and cable workers	304	313	323	324	316	301
Electricians	998	1,073	1,192	1,227	1,213	1,150
Elevator constructors and mechanics	37	38	39	39	38	38

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	2013	2014	2015	2016	2017	2018
Floor covering installers	61	67	79	82	81	73
Gasfitters	96	101	106	106	105	99
Glaziers	33	37	43	45	44	40
Heavy-duty equipment mechanics	695	727	780	810	795	846
Heavy equipment operators (except crane)	968	1,030	1,131	1,168	1,153	1,144
Home building and renovation managers	150	166	193	200	199	179
Insulators	83	92	107	111	111	99
Ironworkers and structural metal and platework fabricators and fitters	72	78	87	89	88	81
Painters and decorators (except interior decorators)	144	159	186	193	192	171
Plasterers, drywall installers and finishers, and lathers	50	55	64	67	66	59
Plumbers	171	190	222	230	229	204
Refrigeration and air conditioning mechanics	166	183	214	223	222	198
Residential and commercial installers and servicers	162	177	200	206	204	187
Roofers and shinglers	88	98	114	119	118	106
Sheet metal workers	208	221	239	242	241	228
Steamfitters, pipefitters and sprinkler system installers	213	228	248	251	249	235
Trades helpers and labourers	1,208	1,307	1,472	1,519	1,507	1,393
Truck drivers	1,768	1,866	1,956	1,988	1,972	1,964
Welders and related machine operators	501	523	544	549	544	541

Source: BuildForce Canada

Table B2: Status Quo Scenario – Trades Employment, 2013 to 2018

	2013	2014	2015	2016	2017	2018
Total	**11,765**	**12,388**	**13,020**	**13,129**	**12,862**	**12,592**
Boilermakers	132	135	136	136	135	134
Bricklayers	103	111	120	121	117	110
Carpenters and cabinetmakers	1,452	1,544	1,658	1,672	1,622	1,544
Concrete finishers	47	50	54	54	53	50
Construction estimators	52	55	60	60	58	55
Construction managers	191	205	222	224	216	204
Construction millwrights and industrial mechanics	829	862	886	891	880	884
Contractors and supervisors, industrial, electrical and construction trades and related workers	406	427	449	452	442	427
Contractors and supervisors, maintenance trades and heavy equipment and transport operators	513	538	553	559	556	551
Crane operators	31	33	36	36	35	33
Drillers and blasters – surface mining, quarrying and construction	73	78	84	86	83	83
Electrical power line and cable workers	300	307	311	310	303	297
Electricians	961	1,014	1,072	1,081	1,055	1,028
Elevator constructors and mechanics	37	38	39	39	39	39
Floor covering installers	57	61	66	67	64	61
Gasfitters	95	98	100	100	98	96
Glaziers	31	33	36	36	35	33
Heavy-duty equipment mechanics	685	715	746	759	746	764
Heavy equipment operators (except crane)	941	989	1,041	1,054	1,032	1,025

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	2013	2014	2015	2016	2017	2018
Home building and renovation managers	141	151	163	164	159	150
Insulators	78	83	90	91	88	83
Ironworkers and structural metal and platework fabricators and fitters	69	73	78	78	76	74
Painters and decorators (except interior decorators)	134	144	156	157	152	143
Plasterers, drywall installers and finishers, and lathers	47	50	54	54	53	50
Plumbers	160	172	186	187	181	171
Refrigeration and air conditioning mechanics	155	166	180	181	175	165
Residential and commercial installers and servicers	154	164	175	176	171	164
Roofers and shinglers	83	89	96	97	93	88
Sheet metal workers	202	212	222	223	220	215
Steamfitters, pipefitters and sprinkler system installers	208	219	230	231	227	221
Trades helpers and labourers	1,153	1,217	1,292	1,303	1,268	1,221
Truck drivers	1,748	1,837	1,895	1,913	1,897	1,896
Welders and related machine operators	497	518	534	537	533	533

Source: BuildForce Canada

APPENDIX C – NATIONAL HIGHLIGHTS FROM BUILDFORCE CANADA'S *CONSTRUCTION AND MAINTENANCE LOOKING FORWARD*, 2014–2023

BuildForce Canada's 2014 outlook scenario shows that construction continues to be one of the leading industries in Canada, but the intensity of activity will vary by province and sector. Across the country there are many major projects underway and proposed, with many of these projects located in remote locations. At various times across the 2014 to 2023 scenario period these projects translate into significant demand requirements.

In Atlantic Canada, Newfoundland and Labrador has several large industrial, utilities and resource projects that are ramping up, and these projects are generating significant employment now and are expected to continue over the near term. Activity is expected to peak in 2014, but this is likely to spill over into 2015. It then declines as several major projects begin to wind down. In New Brunswick, growth slows over the next few years, but then picks up in 2016 as work increases on the pipeline, new marine terminal and proposed mining projects. Construction investment and employment in Prince Edward Island and Nova Scotia are expected to rise modestly across the scenario period. In Nova Scotia, construction will face periods of direct competition with the shipbuilding industry, where several construction-related trades and occupations will be in high demand, and workers may be drawn from construction.

Centrally, investment slows in Quebec over the near term, but then rises as non-residential investment increases, driven by pipeline, industrial, utilities and mining projects, but overall growth will be moderate. Following a brief decline in 2013, growth in Ontario resumes over the medium term. Key markets include Northern Ontario, driven by new mining developments, and the Greater Toronto area, where major utilities, infrastructure and transportation projects are underway or planned.

In the Prairies, Saskatchewan has been one of the leading construction markets in Canada. Activity peaked in 2013 and then slows gradually, but overall investment and employment stays well above historical levels. In Manitoba, construction markets have been growing for more than a decade. Growth is expected to continue at a moderate pace over the medium term until 2018, when increased activity for a major hydroelectric development generates potential labour market challenges.

Alberta continues to lead Canada's construction industry through the next decade, with major new oil sands projects and residential work driving job growth in virtually every year between now and 2023. The start of new major oil sands projects this year and hiring related to flood damage repair boost hiring in 2014. As oil sands capacity grows, there is the related need for increased investment in

supporting infrastructure projects (utilities, transportation, etc.). In addition, increased sustaining capital projects later in the scenario period and ongoing shutdown/turnaround work add to labour demands, as existing and new facilities need to be maintained.

In British Columbia, industrial, LNG (liquefied natural gas) terminals, pipelines, utilities and mining projects are scheduled to ramp up over the medium term. Many of these projects are in Northern B.C. and will generate significant labour demands. By 2017, construction employment is projected to set a new record high, with market conditions tightening for many construction trades and occupations. A key driver over the medium term (2014 to 2020) is the scheduling of three LNG terminals and the associated pipelines, each averaging $15 billion in total investment, including the pipelines.

Mapping the proposed start-up of large projects in some regions and the winding down of projects in others will be critical for assessing the potential for interprovincial mobility to meet peak demand requirements. Key challenges include:

- determining the availability of workers across Canada
- assessing the portability of skills
- the willingness to work in remote areas

The increased activity across the 2014 to 2023 scenario period translates into market pressures for a selected group of trades and occupations:

- boilermakers
- carpenters (scaffolders)
- crane operators
- electricians
- heavy equipment operators and mechanics
- insulators
- ironworkers
- millwrights
- plumbers
- sheet metal workers
- steamfitters and pipefitters
- welders (specialized)
- truck drivers
- trades helpers and labourers
- construction managers
- supervisors

The degree of skilled labour challenges in construction trades will, in large part, be dependent on the timing of the numerous major resource projects across Canada. The overarching message is that the construction industry will be challenged to meet skilled labour requirements at points in time, in parts of the country, and for specific skilled trades. Factoring in replacement demand due to retirements, new entrants, mobility and immigration, the evidence shows that the construction industry will face challenges over the next decade.

Even as interprovincial mobility of workers attempts to fill demand requirements, it is projected that the industry will still need to draw in a steady flow of new workers to meet peak requirements, to meet continued industry expansion and to replace retiring workers. Industry will need to tap into all potential sources of supply, including youth, women, Aboriginal people, other industries and immigrants to ensure a sustainable skilled workforce now and in the future.

North Superior
Workforce Planning Board