An Assessment of Construction Labour Markets from 2019–2028

Construction Outlook

Emerging trends, slower near term growth

2019 Best Practices Conference
May 8, 2019
BuildForce Canada Construction Outlook

- **Macroeconomic and construction:**
  - economic conditions; global markets, commodity prices, interest rates, exchange rates, etc.
  - changes investment; **key major projects expected to drive labour demands.**
  - demographics; aging workforce, expected retirements, slower population growth and less youth entering the labour force.
  - Assess labour market conditions; balance between long term sustainable skilled workforce against changing demands.

- **Annual Labour Market Outlook:**
  - 2019 – 2028 outlook scenario (**January 2019**)
  - provincial summary highlights reports
  - PowerPoints (residential and non-residential summaries)
  - forecast website (data)

www.constructionforecasts.ca
Non-residential construction employment
Near-term % change, 2019-2021

*Growth slows compared to the last two decades; number of major projects decline; changing pattern of mobility*

Projects stacking up; 2019 to 2021

- Slower growth; petrochemical, infrastructure, sustaining capital / maint.
- Receding from high levels of activity
- Strong levels of activity, tight markets prevail over the next few years
- Number of major projects decline

NL recedes from very strong levels of activity

NL -22%

Number of major projects decline
<table>
<thead>
<tr>
<th>Select Major Projects</th>
<th>Schedule</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC Hydro's Site C Dam</td>
<td>2015:2-2025:2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LNG Canada Facility</td>
<td>2018:1-2023:4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Gaslink Pipeline</td>
<td>2019:1-2022:1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Murray River Coal Project (underground mine)</td>
<td>2019-2021</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AltaGas Prince Rupert Gas Plant</td>
<td>2017:1-2019:1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AltaGas: Ridley Island Propane Export Terminal</td>
<td>2017:4-2019:1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodfibre LNG</td>
<td>2017:1-2021:4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eagle Mountain Woodfibre Gas Pipeline</td>
<td>2019:2-2021:4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vancouver Airport Expansion</td>
<td>2019-2029</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3 Expansion Project - Grain Terminal</td>
<td>2017:2-2020:4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port of Vancouver Centerm Expansion</td>
<td>2018:3-2021:2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trans Mountain Express (TMX) Pipeline</td>
<td>2020-2022</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roberts Bank Container Expansion</td>
<td>2020-2026</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC MTI / TransLink : Millennium (Broadway) Line</td>
<td>2019:4-2024:4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC MTI / TransLink : Surrey LRT</td>
<td>2019:3-2022:3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kicking Horse Canyon Highway Improvements</td>
<td>2018:3-2023:3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patullo Bridge Replacement</td>
<td>2019:2-2022:2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Paul's Hospital</td>
<td>2019-2022</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tracking ~ $50 billion in major projects
Non-residential construction investment, British Columbia
$2007 millions (adjusted for inflation)

Rapid rise, projects stacking up:
- BC Hydro, Site C
- LNGSs (Woodfibre, LNG Canada)
- Pipelines (Coastal Gaslink, TransMountain)
- Patullo Bridge Replacement
- Transit systems and other infrastructure

Forecast
- An estimated 13,000 new jobs (+18%) to peak in 2021
- markets tighten across long list of trades and occupations

Source: Statistics Canada, BuildForce Canada (2019-2028)
<table>
<thead>
<tr>
<th>Rank</th>
<th>Labour Market Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>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.</td>
</tr>
<tr>
<td>2</td>
<td>Workers meeting employer qualifications are available in local markets to meet an increase in demand at the current offered rate of compensation and other working conditions.</td>
</tr>
<tr>
<td>3</td>
<td>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. Employers may need to compete to attract needed workers. Established patterns of recruiting and mobility are sufficient to meet job requirements.</td>
</tr>
<tr>
<td>4</td>
<td>Workers meeting employer qualifications are generally not available in local markets to meet any increase. Employers will need to compete to attract additional workers. Recruiting and mobility may extend beyond traditional sources and practices.</td>
</tr>
<tr>
<td>5</td>
<td>Needed workers meeting employer qualifications are not available in local 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.</td>
</tr>
<tr>
<td>N/A</td>
<td>The labour market assessment for some trades is limited by the small size of the workforce (&lt;100 employed). In consultation with the provincial LMI committee, the rank is suppressed because of limited statistical reliability.</td>
</tr>
</tbody>
</table>
Non-residential construction investment, Alberta
$2007 millions (adjusted for inflation)

- Petrochemical investment, planned infrastructure (transportation), roads/highways and pipeline (TMX) sustain stable employment requirements over the near term.
- Oil sands sustaining capital and maintenance work partially offset ‘new’ declines.

Source: Statistics Canada, BuildForce Canada (2019-2028)
Alberta Oil sands investment – new, sustaining and maintenance
$2007 millions (adjusted for inflation)

Source: Statistics Canada, BuildForce Canada (2019-2028)
Note: investment displayed in this chart includes the value of machinery and equipment.

- ‘New’ capital declined and mostly unchanged over the near term.
- Sustaining capital and maintenance work account for a higher share of oil sands investment and jobs.
Market Challenges – industrial maintenance work

- **Rapid rise / decline** around ‘planned’ shutdown / turnaround work.

- **Worker availability**; unemployed or coming off another job.

- Have the needed **skills and industrial experience**. (e.g., alloy welders, all terrain crane operators, scaffolders, etc.)

- **Willingness to travel** for short periods of work; intra (within province) / inter (across provinces) mobility.

- **Competing demands** by other maintenance, sustaining capital and construction projects (Alberta and rest of Canada).
Demographic Trends
Population age distribution, Alberta

2008:
- 15 to 24: 10%
- 25 to 54: 46%
- 55 to 64: 15%
- 65+: 10%

2018:
- 15 to 24: 13%
- 25 to 54: 44%
- 55 to 64: 12%
- 65+: 13%

2028:
- 15 to 24: 11%
- 25 to 54: 42%
- 55 to 64: 11%
- 65+: 17%
Demographic Trends
Replacing an aging labour force - construction

- Residential and non-residential Alberta, 20% of the current construction workforce is expected to retire over the next decade, or an estimated 40,800 workers.

- Significant loss of skilled workers and will require the transfer of knowledge to less experienced workers entering the labour force.

- Competing against other industries facing similar age demographics.
**NON-RESIDENTIAL**: change in labour force
Direct trades and occupations

<table>
<thead>
<tr>
<th>Year</th>
<th>Labour Force</th>
<th>New Entrants</th>
<th>Net In-Mobility</th>
<th>Out of Labour Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>122,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2028</td>
<td>134,900</td>
<td>+24,800</td>
<td>+13,000</td>
<td>+12,900 (11%)</td>
</tr>
</tbody>
</table>

*Net in-mobility* refers to the number of workers needed to be brought into the industry from other industries or other provinces in order to meet demand pressures from retiring workers and changes in employment.
Risks as growth slows....

- Risk of workers dropping out of labour force or move outside Alberta or construction.

- Aging workforce:
  - Some may accelerate retirement decision
  - Some may be more selective, less willing to travel across regions
  - Loss of knowledge and experience due to retirements
  - Increased competition from other industries facing similar demographic challenges

- Industry priority....recruiting and career promotion
  - Sustaining commitment to recruiting, training and retention... even under a slower growth scenario.
  - Potential recruitment of underrepresented groups – women, Indigenous peoples, and new Canadians.
Registrations in construction trades peaked in 2014, but have fallen 50% since. Down to 2004 levels!
Apprentice New Registrations, Alberta
16 construction trades

Percent Change (%) in New Registrations, Canada 2017 compared to 2012 to 2014 average

Steamfitter/Pipefitter: -62%
Mobile Crane Operator: -62%
Welder: -60%
Ironworker (all): -56%
Heavy Duty Equipment Technician: -53%
Total: -48%
Construction Electrician: -48%
Industrial Mechanic (Millwright): -43%
Plumber/Gasfitter: -40%
Boilermaker: -38%
Carpenter: -28%
Sprinkler System Installer: -20%
Refrigeration and Air Conditioning Mechanic: -18%
Bricklayer: -16%
Gasfitter: -6%
Sheet Metal Worker: -5%
Insulator (Heat and Frost): 1%

Source: Statistics Canada, RAIS,
Apprentice New Registrations and Completions, Alberta
19 largest Red Seal construction trades

Long duration of apprenticeship training period results in a lag in completions, and contributes to cyclical mismatches in skills availability.

New Construction Program Apprenticeship Registrations and Completions 2004 to 2017

Source: Statistics Canada, RAIS,
The decline in new registrations is expected to result in a drop in the number of new journeypersons.

Expected Rise in Demand

Completions (number of new journeypersons) likely to fall 38% from 2016

New Construction Program Apprenticeship Registrations and Completions 2004 to 2023

Source: Statistics Canada, RAIS, CANTRAQ
Trends in Construction Employment, Alberta

Source: Statistics Canada LFS

Young workers are last in, first out!

Construction Employment, by Age, Alberta

Source: Statistics Canada LFS
Components of population growth, Alberta
Percent (%)

Source: Statistics Canada, BuildForce Canada (2018-2028)
Immigrant Industrial Profile
Canada

Construction has among the lowest representation of immigrants

<table>
<thead>
<tr>
<th>Industry</th>
<th>Immigrant Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation and food services</td>
<td>35%</td>
</tr>
<tr>
<td>Finance, insurance, real estate and leasing</td>
<td>34%</td>
</tr>
<tr>
<td>Transportation and warehousing</td>
<td>33%</td>
</tr>
<tr>
<td>Professional, scientific and technical services</td>
<td>32%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>32%</td>
</tr>
<tr>
<td>Business and other support services</td>
<td>30%</td>
</tr>
<tr>
<td>Other services</td>
<td>26%</td>
</tr>
<tr>
<td>All industries</td>
<td>26%</td>
</tr>
<tr>
<td>Health care and social assistance</td>
<td>26%</td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td>25%</td>
</tr>
<tr>
<td>Construction</td>
<td>19%</td>
</tr>
<tr>
<td>Educational services</td>
<td>17%</td>
</tr>
<tr>
<td>Public administration</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, Labour Force Survey
More than 50 per cent of recent immigrants to Canada have a bachelor’s degree or higher. Immigrants are also more than two-times as likely to hold a master’s degree or PhD than the Canadian-born population.

Source: Statistics Canada, 2016 Census
Planning Ahead... Apprentice Targets, Alberta
19 construction trades

Construction Program Apprenticeship Targets, 2014 to 2028

Apprenticeship Registrations Need to rise 40% by 2021 to meet future requirements

Source: Statistics Canada, RAIS, CANTRAQ
THANK YOU

For More Information Contact:
info@buildforce.ca