

BRITISH COLUMBIA

Mobility is key to meeting British Columbia's near-term expansion requirements

HIGHLIGHTS 2020-2029

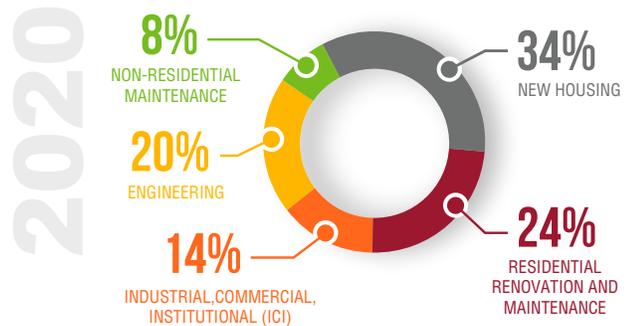
Record levels of housing starts and major project investment propelled construction activity in British Columbia to a new high in 2019, intensifying recruitment challenges for skilled trades.

Non-residential construction investment is set to expand by 25% between 2020 and 2021, driven by the timing of several major utility, gas, pipeline, and transportation infrastructure projects with a total value of more than \$60 billion. Major project requirements, alongside rising levels of residential renovation work, are expected to increase construction employment by an additional 11,700 skilled workers over the next two years.

As major projects are completed, combined with moderate growth in the residential sector, construction employment is expected to recede between 2022 and 2024, but total construction employment remains above 2019 levels.

While demand growth will be more tempered over the latter half of the 2020-2029 scenario period, the anticipated retirement of 44,200 workers will require the construction and maintenance industry to maintain a heightened focus on recruitment and training.

DISTRIBUTION OF CONSTRUCTION EMPLOYMENT IN 2020, BRITISH COLUMBIA



10-YEAR WORKFORCE OUTLOOK FOR BRITISH COLUMBIA



Short-term sector investment growth (2019-2021)			
Residential	0.9%	Non-residential	8.7%
New Housing	-2.9%	Building	4.9%
Renovation	6.9%	Engineering	11.3%
Maintenance	7.3%	Maintenance	3.4%

AVERAGE UNEMPLOYMENT RATE 5.2%

HIGHLIGHTS

- Total construction employment is set to rise and peak in 2021, adding 11,700 jobs from the 2019 starting point.
- Housing starts rebounded to a record high in 2019, contributing to related employment gains in 2020.
- Workers from outside B.C.'s construction industry will be needed to meet anticipated peak demands in 2020 and 2021.
- Construction employment is expected to rise and then recede but finish the decade higher by 14,900 workers than 2019 levels. Additionally, retirements during this period will increase the recruitment requirements by a further 44,200 workers.

BuildForce's LMI System

BuildForce Canada uses a scenario-based forecasting system to assess future construction labour requirements in the heavy industrial, residential, and non-residential construction markets. This labour market information (LMI) system tracks 34 trades and occupations. To further improve the robustness of the system, BuildForce consults with industry stakeholders, including owners, contractors, and labour groups, to validate the scenario assumptions and construction project lists, and seeks input from government on related analysis. The information is then distilled into labour market condition rankings to help industry employers with the management of their respective human resources.

BRITISH COLUMBIA CONSTRUCTION OUTLOOK

British Columbia will need to attract thousands of skilled workers to meet the expected rise in construction demands over the next two years. The rapid pace of growth since 2015 has outstripped the supply of skilled labour, resulting in record low levels of unemployment and the emergence of wide-spread recruitment challenges. The rapid rate of residential, infrastructure, and energy-sector expansion has driven a 23% increase in construction employment since 2015, adding more than 45,000 jobs over four years.

Meeting anticipated peak major project demands between 2020 and 2021, including the LNG Canada facility, Site C dam project, the Trans Mountain Pipeline Expansion, and numerous large public transportation projects, will require an additional 10,300 non-residential workers with specialized skills and experience. Given that unemployment in construction is already at historically low levels (below 4%), the majority of near-term labour force requirements will likely need to be drawn from outside the province or outside the industry.

Much of the anticipated growth in construction investment is concentrated in the Lower Mainland, driven by several planned transportation and other major public infrastructure projects. Recruiting challenges in the region have been heightened by the rising cost of living and affordability challenges in the Greater Vancouver Area, causing an increasing number of workers to commute daily to Vancouver from more affordable surrounding areas.

In addition to tracking scheduled major projects, the 2020–2029 *Construction and Maintenance Looking Forward* outlook scenario considers population growth and the expected economic expansion that will drive construction of industrial, commercial, and institutional (ICI) buildings. The pace of new-housing construction, which has been a dominant driver of growth over the past five years, is expected to moderate from the 44,700 housing starts reached in 2019 and is expected to fluctuate near 40,000 units across the coming decade.

Meeting the 2020–2021 ramp-up is made more difficult by the expected retirement of 44,200 workers over the scenario period. Combining retirement and expansion demands, the construction industry will need to recruit close to 59,100 workers over the coming decade. This demand may be partially met by up to 37,800 new entrants aged 30 and younger available locally, but a significant portion of the remainder will need to be drawn from other industries or other provinces in order to meet demand requirements.

SECTOR INSIGHTS

The following sections provide sector-specific insights into the provincial residential and non-residential labour markets.

The BuildForce LMI system tracks supply and accounts for the change in the available labour force, including retirements, new entrants¹ and net mobility².

BuildForce assesses market conditions for 34 construction trades and occupations using a ranking system that combines measures of the change in employment, unemployment, net mobility, and adjustments based on industry input. The rankings reflect residential and non-residential market conditions unique to the province based on current and proposed construction activity. In addition, assumptions on provincial economic and population growth, new entrants to the labour force, and migration patterns (interprovincial and international) are built into the forecast scenario and included in the ranking assessment.

The rankings for some trades are suppressed due to the small size of the workforce (<100 workers) and limited statistical reliability when assessing labour market conditions at the sector level. Some trades are also excluded because they typically do not work in the sector being assessed (e.g., boilermakers and millwrights in residential construction, and homebuilding and renovation managers in non-residential).

For British Columbia, rankings are reported for 29 residential and 32 non-residential trades and occupations. For the Lower Mainland, rankings are reported for 27 residential and 32 non-residential trades and occupations.

NON-RESIDENTIAL SECTOR

British Columbia is in the midst of the largest non-residential construction expansion in recent history, and major project requirements are set to intensify.

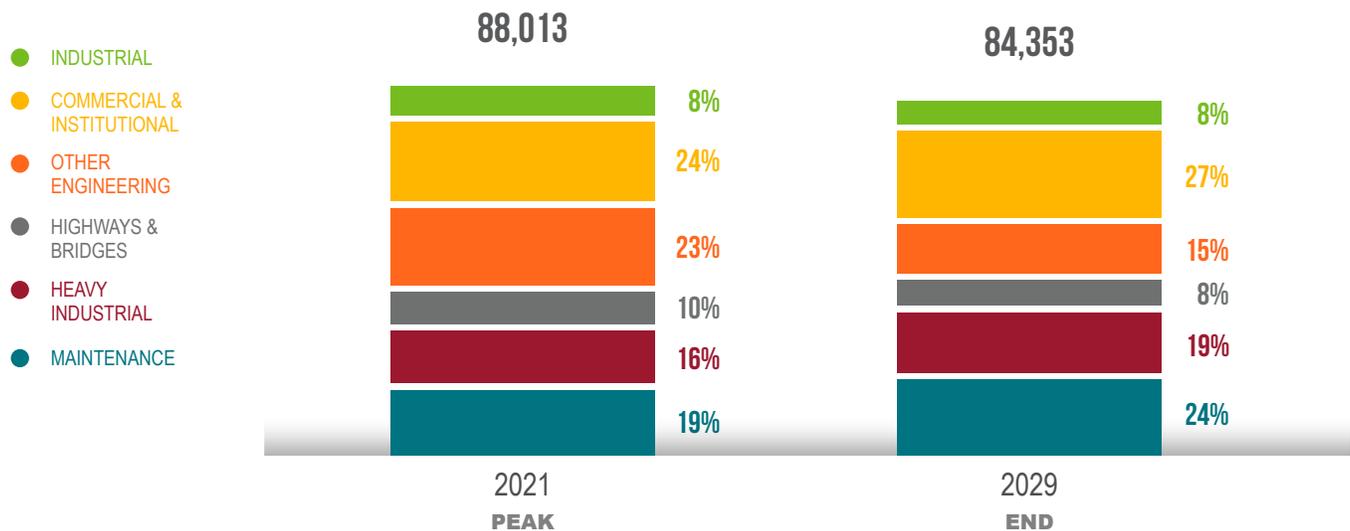
Expansion demands are driven by several major projects, including ongoing work at Site C, the LNG Canada export terminal and related TC Energy Coastal GasLink pipeline, the Trans Mountain Pipeline Expansion, various major public infrastructure projects, including the Pattullo Bridge Replacement and several transit projects, plus ongoing work for the Vancouver International Airport expansion.

In addition to major project demands, construction of ICI buildings is expected to rise steadily, offsetting future employment declines when current tracked major projects wind down.

Figure 1 tracks the change in non-residential employment by sector for key reference points across the scenario period, including the expected peak in 2021, and at the end of the scenario period in 2029.

¹ **New entrants** are measured by applying the traditional proportion of the provincial labour force that enters the construction industry. The projected estimate across the scenario period assumes that the construction industry can recruit this group in competition with other industries.

² **Net mobility** refers to the movement of labour in and out of the local construction industry labour force. In-mobility captures the movement into the labour force of out-of-province industry workers and/or workers from outside the industry. Many members of this group will move quickly out of the provincial labour force as work declines, referred to as out-mobility.

Figure 1: Non-residential employment distribution by sector, British Columbia, 2021 and 2029

Source: Statistics Canada, BuildForce Canada (2020-2029)

Table 1 summarizes the percent change in employment from 2019 levels by sector across two periods: the first captures the expected increase in near-term demand in 2020 and 2021, and the second shows the remaining years of the scenario period as markets decline from peak activity.

Table 1: Changes in non-residential employment by sector, British Columbia

SECTOR		% CHANGE 2020–2021	% CHANGE 2022–2029
Total non-residential employment		13%	-4%
ICI buildings	Industrial	26%	-10%
	Commercial, institutional, and government	6%	4%
Engineering	Highways and bridges	12%	-22%
	Heavy and other engineering	19%	-15%
Maintenance		8%	19%

Source: Statistics Canada, BuildForce Canada (2020-2029)

Figure 2 shows the employment trends by sector for non-residential construction.

THE AVAILABLE LABOUR FORCE

First-time new entrants to the construction workforce from the local population aged 30 and younger only partly offset retirements. Meeting rising near-term (2020-2021) employment demands of 10,300 non-residential workers while replacing 3,350 workers expected to retire is estimated to exceed local supply. Only 3,400 provincial new-entrant workers are expected to join the labour force during this period, leaving the industry a shortfall of 10,300 workers that must be recruited from outside the local non-residential labour force.

Figure 3 shows the estimated changes in the non-residential labour force across the full 2020–2029 scenario period.

Figure 2: Non-residential construction employment growth outlook, British Columbia

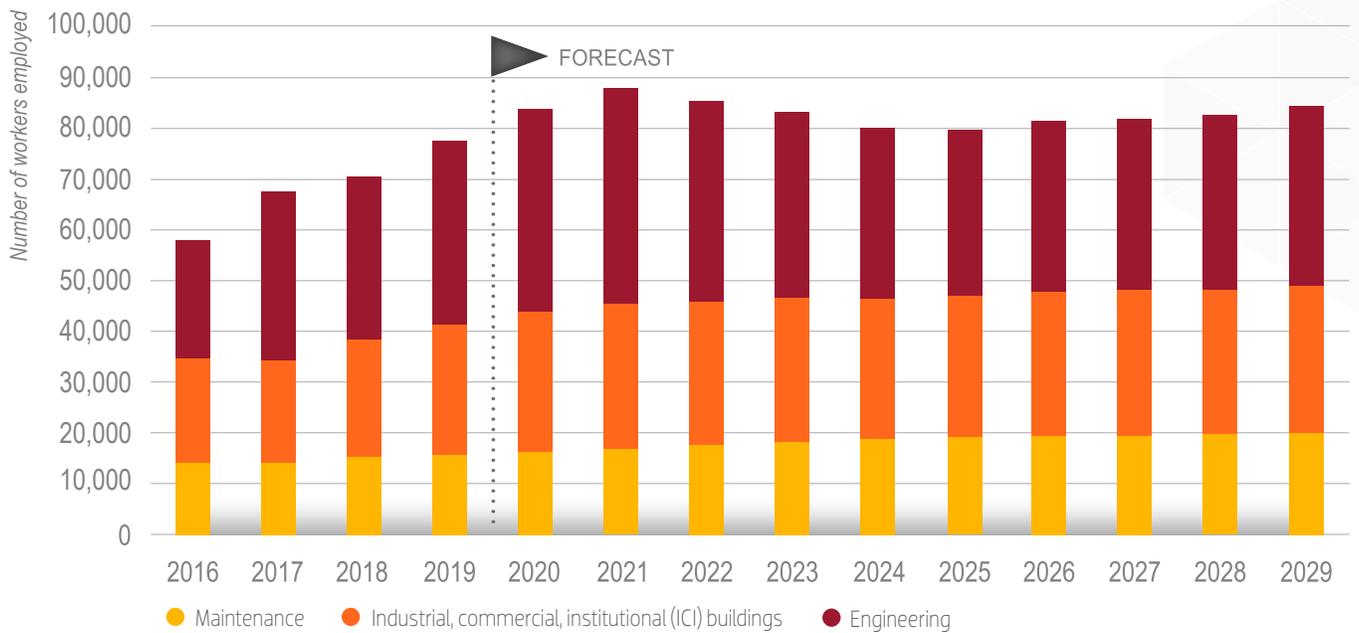


Figure 3: Changes in the non-residential labour force, British Columbia



* Net mobility refers to the number of workers needed to be brought into the industry from other industries or other provinces to meet rising demands or the number of workers that exit the industry in downturns. Positive net mobility means that industry must attract workers, while negative net mobility arises from an excess supply of workers in the local construction labour force.

Note: Due to rounding, numbers may not add up to the totals indicated.

Source: BuildForce Canada

NON-RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

For British Columbia, the rankings in Table 2 show non-residential labour markets were tight in 2019, with unemployment at historically low levels that required industry to pull workers in from other industries and from outside the province to keep pace with construction demands. Market conditions and recruitment challenges are expected to tighten further in 2020 and 2021 due to the rapid increase in employment requirements. As projects retreat from peak levels and start to wind down, conditions should ease in 2022 before returning to balance by 2025, as most tracked major projects come to an end and excess workers exit.

MARKET RANKINGS

1

Workers meeting employer qualifications are available in local markets to meet an increase in demand at the current offered rate of compensation and other current working conditions. Excess supply is apparent and there is a risk of losing workers to other markets.

2

Workers meeting employer qualifications are available in local markets to meet an increase in demand at the current offered rate of compensation and other working conditions.

3

The availability of workers meeting employer qualifications in the local market may be limited by large projects, plant shutdowns or other short-term increases in demand. Employers may need to compete to attract needed workers. Established patterns of recruiting and mobility are sufficient to meet job requirements.

4

Workers meeting employer qualifications are generally not available in local markets to meet any increase. Employers will need to compete to attract additional workers. Recruiting and mobility may extend beyond traditional sources and practices.

5

Needed workers meeting employer qualifications are not available in local markets to meet current demand so that projects or production may be delayed or deferred. There is excess demand, competition is intense, and recruiting reaches to remote markets.

Table 2: Non-residential market rankings, British Columbia

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Boilermakers	4	5	5	3	3	3	3	3	3	3	3
Bricklayers	4	4	4	3	3	3	3	3	3	3	3
Carpenters	5	4	3	3	3	3	3	3	3	3	3
Concrete finishers	5	5	4	3	3	3	3	3	3	3	3
Construction estimators	5	4	4	3	3	2	3	3	3	3	3
Construction managers	5	5	4	3	3	3	3	4	3	3	4
Construction millwrights and industrial mechanics	3	5	5	2	3	3	3	3	3	3	3
Contractors and supervisors	5	5	4	3	2	2	3	3	3	3	3
Crane operators	5	4	4	2	3	3	3	3	3	3	3
Drillers and blasters	4	4	4	3	3	2	3	3	3	3	3
Electrical power line and cable workers	3	4	5	4	3	3	3	3	3	4	4
Electricians	4	5	5	2	3	3	3	3	3	3	3
Elevator constructors and mechanics	4	4	4	3	3	3	3	3	3	3	3
Floor covering installers	5	4	4	3	3	3	3	3	3	3	3
Gasfitters	4	5	4	3	3	3	3	3	3	3	4
Glaziers	4	5	4	3	3	3	3	3	3	3	3
Heavy equipment operators (except crane)	4	4	4	2	3	2	3	3	3	3	3
Heavy-duty equipment mechanics	4	5	4	3	3	2	2	3	3	3	3
Insulators	4	4	4	4	2	2	3	3	3	3	3
Ironworkers and structural metal fabricators	5	4	4	2	2	2	3	3	3	3	3
Painters and decorators	4	4	4	3	3	3	3	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	4	4	4	3	3	3	3	3	3	3	3
Plumbers	4	4	4	3	3	3	3	3	3	3	3
Refrigeration and air conditioning mechanics	4	4	4	3	3	3	3	3	3	3	3
Residential and commercial installers and servicers	4	4	4	3	3	3	3	3	3	3	3
Roofers and shinglers	4	4	4	3	3	3	3	3	3	3	3
Sheet metal workers	4	5	4	3	3	3	3	3	3	3	3
Steamfitters, pipefitters, and sprinkler system installers	4	5	4	2	3	3	3	3	3	3	3
Tilesetters	5	4	4	3	3	3	3	3	3	3	3
Trades helpers and labourers	5	4	4	2	3	2	3	3	3	3	3
Truck drivers	5	4	4	2	2	2	3	3	3	3	3
Welders and related machine operators	5	5	4	2	2	2	3	3	3	3	3

Source: BuildForce Canada

RESIDENTIAL SECTOR

With strong levels of in-migration, housing starts surged in 2019 to 44,700 units, following a modest slowdown in 2018. Work on condominiums that started in 2018, however, carried over into 2019. The pace of new-housing construction is expected to slow over the short term, with starts down to 38,700 units by 2023 as in-migration and population growth slows.

Across the scenario period, employment related to new housing is expected to decline by 13,300 workers (-20%), offset by a growth of 21,600 workers moving into the renovation and maintenance segments. Residential employment should rise by 8,300 workers (+7%) over the decade, with the strongest gains concentrated between 2025 and 2027.

Figure 4 shows the employment trends by segment for residential construction.

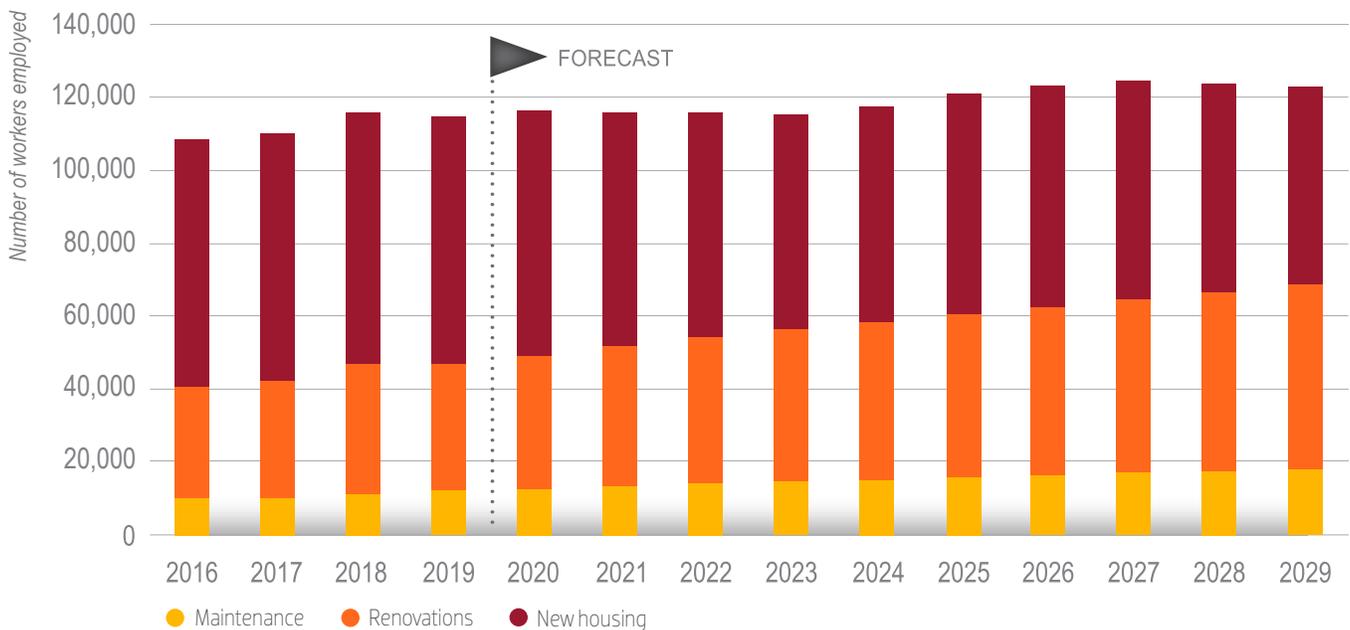
THE AVAILABLE LABOUR FORCE

Figure 5 provides a summary of the estimated changes in the residential labour force across the full 2020–2029 scenario period.

RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

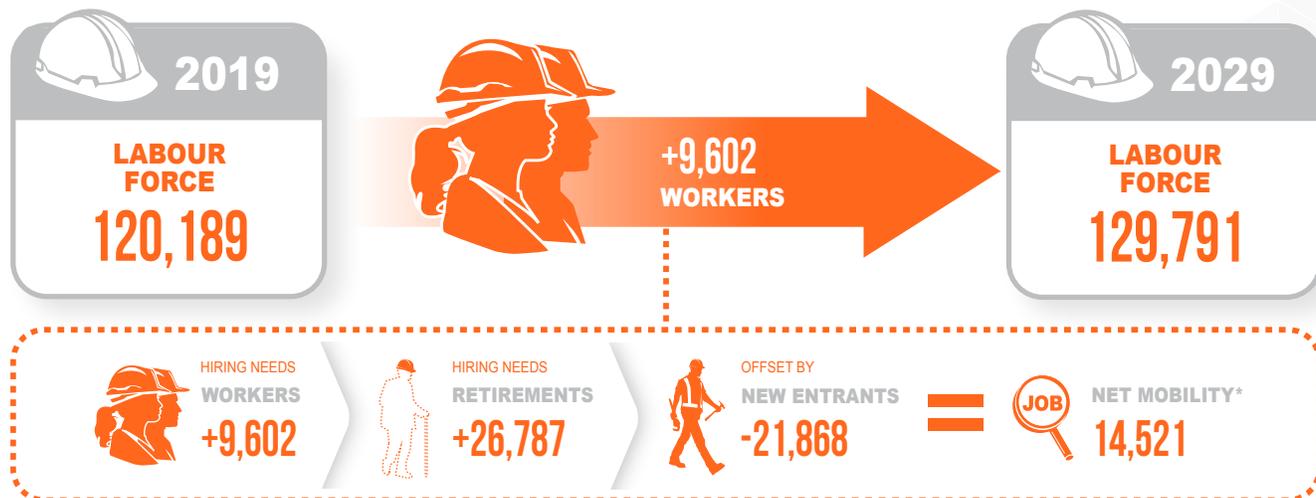
Table 3 shows tight markets in 2019 that reflect the prolonged buildup in residential employment requirements (predominantly high-rise) and falling levels of unemployment. Building off the record level of housing starts in 2019, a projected increase in demand in 2020 is expected to further tighten labour markets. Overall market conditions should return to balance for most trades and occupations by 2022, as signalled by a rank of 3. Market challenges are expected to re-emerge between 2024 and 2026 due to anticipated stronger starts driven by higher levels of in-migration, increased renovation investment, and higher rates of retirement.

Figure 4: Residential construction employment growth outlook, British Columbia



Source: Statistics Canada, BuildForce Canada (2020-2029)

Figure 5: Changes in the residential labour force, British Columbia



* Net mobility refers to the number of workers needed to be brought into the industry from other industries or other provinces to meet rising demands or the number of workers that exit the industry in downturns. Positive net mobility means that industry must attract workers, while negative net mobility arises from an excess supply of workers in the local construction labour force.

Note: Due to rounding, numbers may not add up to the totals indicated.

Source: BuildForce Canada

Table 3: Residential market rankings, British Columbia

TRADES AND OCCUPATIONS – RESIDENTIAL	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Bricklayers	3	4	3	3	3	3	3	3	3	3	3
Carpenters	3	3	3	3	3	3	3	3	3	3	3
Concrete finishers	3	4	3	3	3	3	3	3	3	3	3
Construction estimators	3	3	3	3	3	4	4	4	3	3	3
Construction managers	3	3	3	3	3	3	4	3	3	3	3
Contractors and supervisors	4	4	3	3	3	4	4	4	3	3	3
Crane operators	3	3	4	3	3	3	4	3	3	3	3
Electricians	4	4	3	3	3	3	4	3	3	3	3
Elevator constructors and mechanics	5	4	4	3	3	3	4	4	4	4	3
Floor covering installers	4	4	4	3	3	4	4	4	4	3	3
Gasfitters	3	3	3	3	3	4	4	4	3	3	3
Glaziers	5	4	3	3	3	3	3	3	3	3	3
Heavy equipment operators (except crane)	3	4	3	3	3	3	3	3	3	3	3
Heavy-duty equipment mechanics	5	4	3	3	3	3	3	3	3	3	3
Homebuilding and renovation managers	4	4	4	4	4	4	4	4	4	4	3
Insulators	3	3	3	3	3	3	3	3	3	3	3
Ironworkers and structural metal fabricators	5	4	3	2	2	3	3	3	3	3	3

continued on next page

Table 3: Residential market rankings, British Columbia (continued)

TRADES AND OCCUPATIONS – RESIDENTIAL	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Painters and decorators	4	4	4	4	3	3	3	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	4	4	3	3	3	3	3	4	3	3	3
Plumbers	4	4	3	3	3	3	4	3	3	3	3
Refrigeration and air conditioning mechanics	4	4	3	3	3	3	4	4	3	3	3
Residential and commercial installers and servicers	4	4	4	3	3	3	3	4	3	3	3
Roofers and shinglers	4	4	4	4	3	3	3	3	3	3	3
Sheet metal workers	4	4	3	3	3	3	4	3	3	3	3
Steamfitters, pipefitters, and sprinkler system installers	3	3	3	3	3	3	3	3	3	3	3
Tilesetters	4	4	3	3	3	3	4	4	3	3	3
Trades helpers and labourers	3	3	3	3	3	3	3	3	3	3	3
Truck drivers	3	4	3	3	3	3	3	3	3	3	3
Welders and related machine operators	4	4	3	3	3	3	3	3	3	3	3

Source: BuildForce Canada

LOWER MAINLAND CONSTRUCTION OUTLOOK

The Lower Mainland continues to experience recruiting challenges due to rising non-residential demand requirements and continued increases in housing starts. Attracting larger numbers of workers to the area remains impeded by commuting challenges and the high cost of living. Though the pace of new-housing construction has levelled off from peak levels reached in 2018, higher starts in 2019 suggest a re-acceleration of activity in 2020. Non-residential construction requirements rose again in 2019, driven by widespread growth across all non-residential construction segments, contributing to record low levels of unemployment and recruitment challenges for most trades.

In total, nearly 7,500 additional workers are likely to be required to meet local construction demands by 2021, with most of the increase concentrated in 2020. Factoring in retirements, hiring requirements are expected to rise to 12,300 workers over the next two years. This level of short-term growth, when coupled with the current level of record low unemployment, presents risks of project delays without a significant influx of skilled workers.

NON-RESIDENTIAL SECTOR

Significant investments in a diverse group of public transportation and infrastructure projects and ICI buildings are set to propel labour demands in the Lower Mainland to peak levels by 2021. The anticipated timing of the currently known major projects contributes to a 17% increase in non-residential employment demands, which will require the addition of close to 7,500 workers between 2019 and 2021.

Key near-term major projects include the Pattullo Bridge Replacement, Vancouver airport expansion, pipeline projects, St. Paul's hospital, Millennium Line (Broadway), Surrey Langley SkyTrain, and the Vancouver Fraser Port Authority container expansion program. Although demands ebb between 2021 and 2024, ongoing institutional and infrastructure investment and higher maintenance requirements sustain employment demand at high levels, leaving overall non-residential employment higher in 2029 compared to 2019 (see Figure 6).

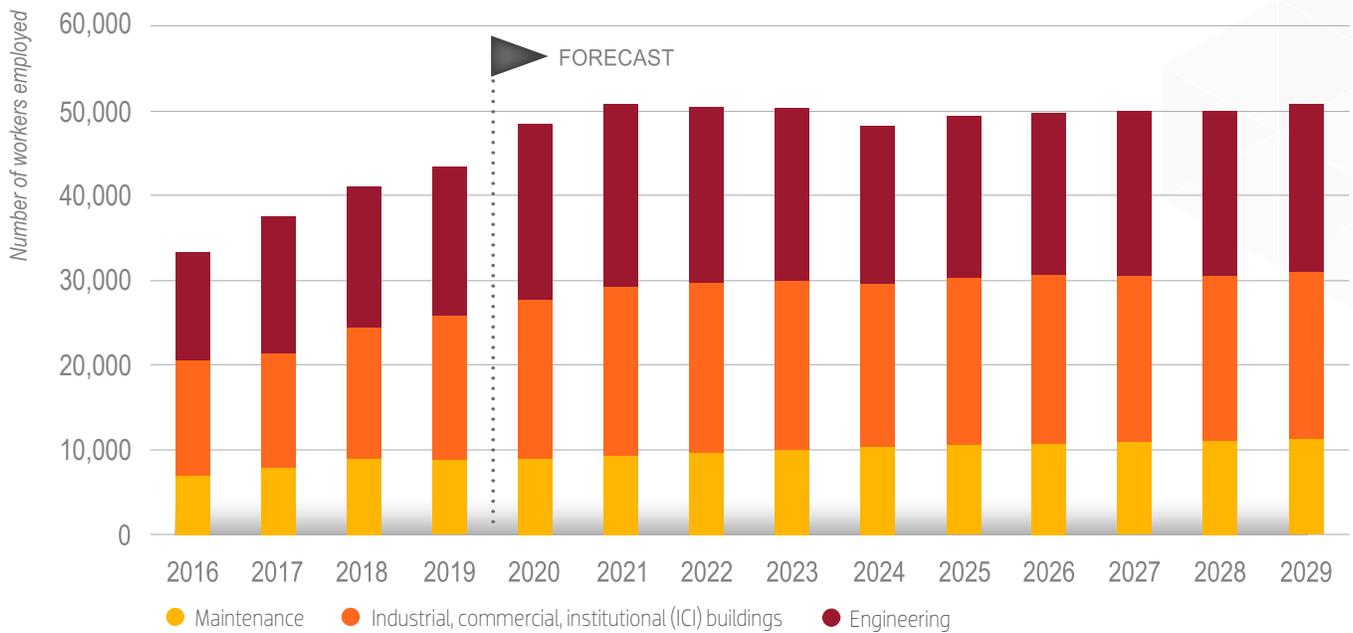
The retirement of 9,200 workers contributes to a net hiring requirement of 16,700 skilled workers over the scenario period.

NON-RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

The rankings in Table 4 reflect non-residential market conditions unique to the Lower Mainland based on current and proposed construction activity. In addition, assumptions on regional economic and population growth, new entrants to the labour force, and migration patterns (interprovincial and international) are built into the outlook scenario and included in the ranking assessment.

Rankings shown in Table 4 point to a rapid buildup in overlapping major project and ICI building requirements to 2021, as well as recruiting challenges specific to the Lower Mainland. Record low levels of unemployment, drawn down over the past five years, means the majority of rising labour force requirements must be met through in-mobility from outside the region. As current major projects peak and wind down, labour market challenges are expected to ease after 2021, with overall market conditions returning to balance for most trades and occupations, as signalled by a rank of 3.

Figure 6: Non-residential construction employment growth outlook, Lower Mainland, British Columbia



Source: Statistics Canada, BuildForce Canada (2020-2029)

Table 4: Non-residential market rankings, Lower Mainland, British Columbia

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Boilermakers	4	4	4	3	3	3	3	3	3	3	3
Bricklayers	5	4	4	3	3	3	3	3	3	3	3
Carpenters	4	4	4	3	3	2	3	3	3	3	3
Concrete finishers	5	5	5	3	2	2	3	3	3	3	3
Construction estimators	5	5	4	3	3	2	3	3	3	3	3
Construction managers	5	5	4	3	3	2	3	3	3	3	4
Construction millwrights and industrial mechanics	4	4	4	3	3	3	3	3	3	3	3
Contractors and supervisors	4	5	4	3	3	2	3	3	3	3	4
Crane operators	4	5	5	3	3	3	3	3	3	3	3
Drillers and blasters	5	5	4	3	3	2	3	3	3	3	3
Electrical power line and cable workers	3	4	3	3	3	3	4	3	3	3	3
Electricians	4	5	4	3	3	3	3	3	3	3	3
Elevator constructors and mechanics	4	4	4	3	3	3	4	3	3	3	4
Floor covering installers	4	5	4	3	3	3	3	3	3	3	4
Gasfitters	4	5	4	3	3	3	4	3	3	3	4

continued on next page

Table 4: Non-residential market rankings, Lower Mainland, British Columbia (continued)

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Glaziers	4	4	4	3	3	3	3	3	3	3	3
Heavy equipment operators (except crane)	5	5	4	3	3	2	3	3	3	3	3
Heavy-duty equipment mechanics	4	5	4	4	3	3	3	3	3	3	3
Insulators	4	4	4	3	3	2	3	3	3	3	3
Ironworkers and structural metal fabricators	4	5	5	3	3	2	3	3	3	3	3
Painters and decorators	4	4	4	3	3	3	3	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	4	4	4	3	3	3	3	3	3	3	3
Plumbers	4	4	4	3	3	3	3	3	3	3	4
Refrigeration and air conditioning mechanics	4	5	4	3	3	3	3	3	3	3	4
Residential and commercial installers and servicers	4	4	4	3	3	3	3	3	3	3	3
Roofers and shinglers	4	4	4	3	3	3	3	3	3	3	3
Sheet metal workers	4	5	4	3	3	3	3	3	3	3	3
Steamfitters, pipefitters, and sprinkler system installers	4	5	4	3	3	3	3	3	3	3	3
Tilesetters	4	4	4	3	3	3	4	3	3	3	4
Trades helpers and labourers	4	5	3	3	3	2	3	3	3	3	3
Truck drivers	4	5	4	3	3	2	3	3	3	3	3
Welders and related machine operators	4	5	4	3	3	2	3	3	3	3	3

Source: BuildForce Canada

RESIDENTIAL SECTOR

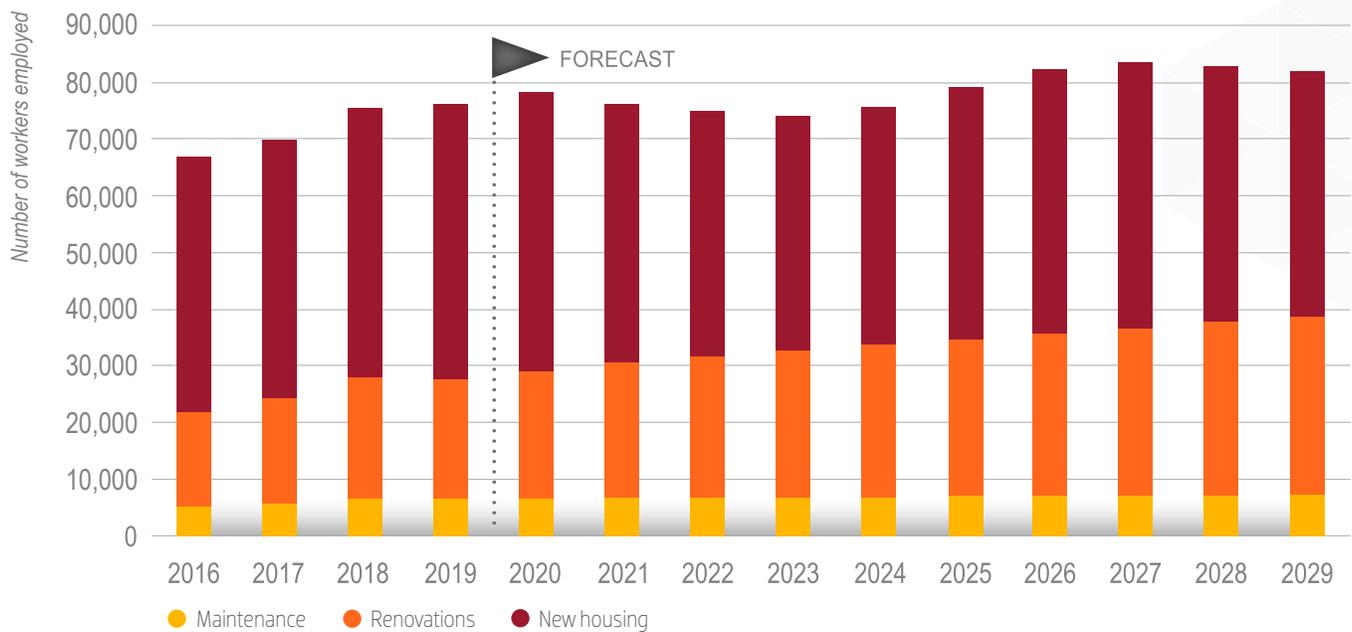
Housing starts rebounded to around 32,000 units in 2019, after softening in 2018 following the implementation of B.C.'s foreign buyers' tax and tighter mortgage rules. Looking forward, starts are projected to recede to a scenario low of 25,300 units by 2023, before recovering to 28,000 by 2029.

Employment related to new housing is expected to decline by a modest 7,200 workers (-15%) between 2020 and 2023, and then strengthen over the remainder of the decade (see Figure 7). Declines in new housing are offset by a 50% rise in renovation-related employment, adding 10,400 workers by 2029 compared to the 2019 starting point.

RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

The rankings in Table 5 reflect tighter labour market conditions over the near term – related to the recent surge in high-rise condominium construction – which are expected to carry over into 2020. Markets are allowed to rebalance between 2021 and 2024, as indicated by a rank of 3, but tighten again with the anticipated recovery in new-home construction between 2025 and 2027.

Figure 7: Residential construction employment growth outlook, Lower Mainland, British Columbia



Source: Statistics Canada, BuildForce Canada (2020-2029)

Table 5: Residential market rankings, Lower Mainland, British Columbia

TRADES AND OCCUPATIONS – RESIDENTIAL	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Bricklayers	4	4	3	3	3	3	3	4	4	3	3
Carpenters	4	4	3	3	3	3	4	4	4	3	3
Concrete finishers	3	4	3	3	3	3	3	4	3	3	3
Construction estimators	4	4	3	3	3	3	4	4	4	3	3
Construction managers	4	4	3	3	2	3	4	4	4	3	3
Contractors and supervisors	4	4	3	3	3	3	4	4	4	3	3
Crane operators	5	4	3	2	2	3	4	4	3	3	3
Electricians	4	4	3	3	3	3	4	4	3	3	3
Elevator constructors and mechanics	5	5	4	4	3	3	3	4	4	3	3
Floor covering installers	4	4	3	3	3	3	4	4	3	3	3
Gasfitters	4	4	3	3	3	3	4	4	4	3	3
Glaziers	4	5	3	3	3	3	3	3	3	3	3
Heavy equipment operators (except crane)	4	4	2	3	3	3	3	4	4	3	3
Homebuilding and renovation managers	4	4	3	3	3	3	4	4	4	4	3
Insulators	3	4	3	3	3	3	4	4	4	3	3

continued on next page

Table 5: Residential market rankings, Lower Mainland, British Columbia (continued)

TRADES AND OCCUPATIONS – RESIDENTIAL	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Ironworkers and structural metal fabricators	5	4	3	3	2	3	3	3	3	3	3
Painters and decorators	4	4	3	3	3	3	3	4	4	3	3
Plasterers, drywall installers and finishers, and lathers	4	4	3	3	3	3	4	4	4	3	3
Plumbers	4	4	3	3	3	3	4	4	4	3	3
Refrigeration and air conditioning mechanics	4	4	3	3	3	3	4	4	4	3	3
Residential and commercial installers and servicers	4	4	3	3	3	3	4	4	3	3	3
Roofers and shinglers	4	4	3	3	3	3	3	4	3	3	3
Sheet metal workers	4	4	3	3	3	3	4	4	3	3	3
Tilesetters	4	4	3	3	3	3	4	4	4	3	3
Trades helpers and labourers	3	4	3	3	3	3	3	3	3	3	3
Truck drivers	3	4	3	3	3	3	4	4	4	3	3
Welders and related machine operators	5	5	2	3	3	3	3	4	3	3	3

Source: BuildForce Canada

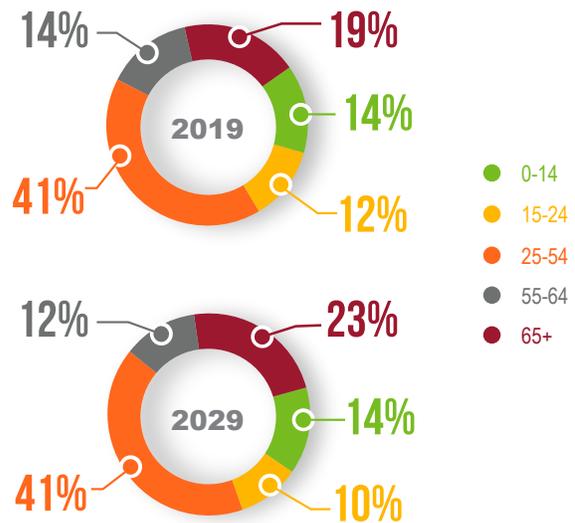
BUILDING A SUSTAINABLE LABOUR FORCE

The rise in labour force requirements to a distinct peak, coupled with increasing replacement demands due to retirements, will require British Columbia’s construction industry to plan ahead to build a sustainable workforce. Over the next 10 years, the province will need to replace 44,200 workers expected to retire. This represents a significant loss of workers and skills, which may exacerbate recruiting challenges across the scenario period.

Increased retirements across all industries in the province results from a rapidly aging population. Over the next decade, the share of the population in the older age bracket (65 years and over) is expected to increase, and at the same time, the share of the youth population (15-24 years old) is expected to decline (see Figure 8). These demographic shifts have the potential to tighten labour markets, as labour force participation by older workers is much lower than that of their younger counterparts.

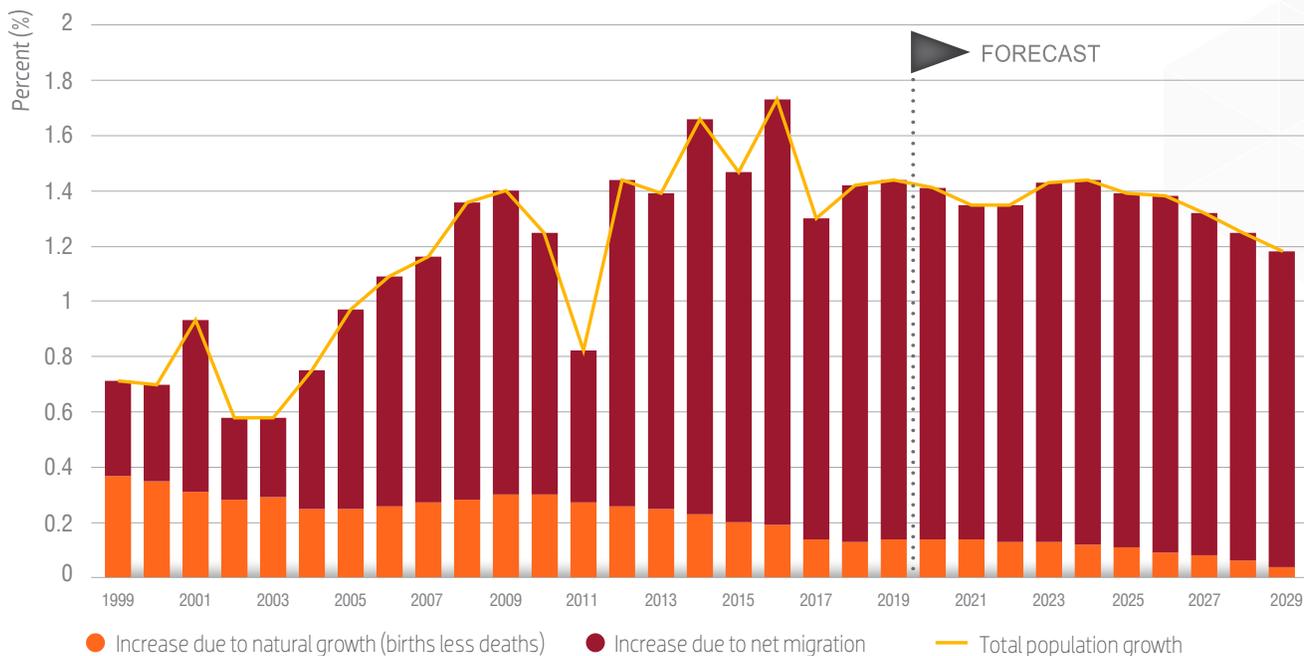
The province’s strong economic position has helped British Columbia to attract workers from other provinces and countries, but over the long term, population aging is anticipated to take hold and bring population growth lower. Inflows of international migrants recede modestly but remain well above historical levels; attracting them into construction will be key. Components of population growth for British Columbia are presented in Figure 9.

Figure 8: Population age distribution, British Columbia



Source: BuildForce Canada

Figure 9: Sources of population growth (%), British Columbia



Source: Statistics Canada, BuildForce Canada (2020–2029)

Based on historical trends, British Columbia’s construction industry is expected to draw an estimated 37,800 first-time new entrants aged 30 and younger from the local population over the next decade. During the scenario period, the pace of retirements exceeds the number of youth coming into construction, forcing the industry to look to other industries, other provinces, and other countries for additional new workers to augment the available pool of local new entrants.

APPRENTICESHIP

More than 54,470 apprentices registered in the 20 largest construction trade programs (see Table 7) in British Columbia between 2013 and 2019³, with 19,300 completions registered

during this period. Apprenticeship data from Statistics Canada’s Registered Apprenticeship Information System (RAIS) show annual new registrations decreased by 6% from 2013 to 2019, while construction employment increased by 15% over the same period. New registrations peaked at 8,480 in 2013 before declining to a low of 7,400 in 2017. Since then, registrations have been increasing steadily. British Columbia is projected to require 28,500 newly certified journeypersons to sustain the current workforce share of certifications and keep pace with employment and replacement demands across all industries over the scenario period.

Table 6 provides an overview of the anticipated certification requirements for the 20 largest construction trade programs in all industries and in construction. The table also provides the target

Table 6: Estimated construction certification demand and projected target of new entrants, British Columbia, 2020 to 2029

	2020	2021	2022	2023	2024	Total 2020–2024	Total 2025–2029
Total certification demand – all industries	4,409	3,830	1,575	1,879	2,208	13,902	14,598
Total certification demand – construction	2,907	2,710	1,057	1,193	1,552	9,418	10,078
Construction certification share (%)	66%	71%	67%	63%	70%	68%	69%
Target new registrants – construction	5,728	7,323	7,842	6,515	5,527	32,935	32,833

Source: BuildForce Canada

³ 2018 and 2019 are estimated.

number of new entrants required to fulfill demand requirements over the scenario period, taking into account trends in program completion rates.

Table 7 provides a trade-by-trade breakdown of the anticipated certification requirements to meet the construction industry's share of employment and replacement demand over the scenario period. Based on projected new registrations, several trades are at risk of

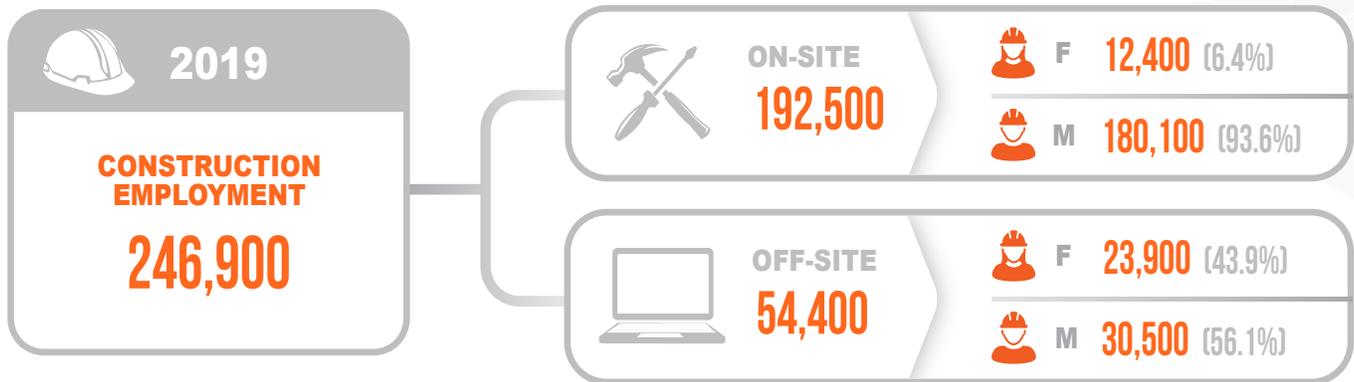
undersupplying the number of new journeypersons required by 2029. Trades within this group include Boilermaker, Carpenter, Glazier, Heavy Equipment Operator, Industrial Electrician, Lather, Metal Fabricator, Painter and Decorator, and Welder. It is important to note that the analysis compares the projected supply of new journeypersons and certification requirements across all industries. It does not account for existing imbalances at the 2019 starting point.

Table 7: Estimated construction certification demand and projected target of new entrants by trade, British Columbia, 2020 to 2029

Trade	Total certification demand – construction	Target new registrants – construction	Apprentice certification supply risk – all industries
Boilermaker	517	587	At-risk supply
Carpenter	4,536	24,558	At-risk supply
Construction Electrician	4,979	8,961	Ample supply
Gasfitter	245	513	Ample supply
Glazier	475	1,376	At-risk supply
Heavy Equipment Operator	283	1,980	At-risk supply
Heavy-Duty Equipment Technician	300	407	Ample supply
Industrial Electrician	488	811	At-risk supply
Industrial Mechanic (Millwright)	160	203	Ample supply
Insulator (Heat and Frost)	325	799	Balanced supply
Lather (Interior Systems Mechanic)	514	4,608	At-risk supply
Metal Fabricator (Fitter)	45	147	At-risk supply
Painter and Decorator	1,487	6,780	At-risk supply
Plumber	2,792	7,089	Ample supply
Refrigeration and Air Conditioning Mechanic	583	1,142	Ample supply
Roofer	466	2,259	Balanced supply
Sheet Metal Worker	363	746	Ample supply
Sprinkler System Installer	131	309	Ample supply
Steamfitter/Pipefitter	431	1,018	Balanced supply
Welder	377	1,472	At-risk supply
Total	19,496	65,768	

Source: BuildForce Canada

Figure 10: Detailed construction employment by gender, British Columbia, 2019



Source: BuildForce Canada calculations based on Statistics Canada's Labour Force Survey (LFS) and 2016 Census of the Population.

UNDERREPRESENTED GROUPS OF WORKERS

Building a sustainable workforce will require the construction and maintenance industry to increase recruitment from groups traditionally underrepresented in the current construction labour force, including women, Indigenous people, and new Canadians.

In 2019, there were approximately 36,300 women employed in British Columbia's construction industry, of which 34% worked on-site, directly on construction projects, while the remaining 66% worked off-site, primarily in administrative and management-related occupations. Of the 192,500 tradespeople employed in the industry, women made up only 6.4% (see Figure 10).

The estimated 12,400 tradeswomen in British Columbia are represented across all sectors of construction, but they tend to be employed in occupations highly demanded by the residential sector and in the construction of ICI buildings, as more than three quarters of tradeswomen are employed in these sectors. Moreover, women's representation is slightly higher in the residential sector, with women

accounting for 6.6% of tradespeople involved in new homebuilding, renovations, and maintenance (see Figure 11). The top five trades in which women tend to be employed are trades helpers and labourers (20% of all tradeswomen), painters (18%), construction managers (16%), contractors and supervisors (9%), and carpenters (6%).

Indigenous peoples comprise another underrepresented group in the construction industry. British Columbia is home to approximately 17% of all Indigenous people in Canada. The Indigenous population is the fastest growing in Canada and has a higher propensity to choose the construction industry as a potential career choice. In 2016, an estimated 7.6% of non-Indigenous Canadians were employed in the construction industry, compared to 9.6% for the Indigenous population.

Approximately 5.7% of British Columbia's construction workforce is made up of Indigenous peoples, of which about 82% work directly on construction projects, while the remaining 18% work primarily in administrative and management-related occupations. The Indigenous population is also more likely to work in heavy-

10-YEAR AVERAGE

1.4%



POPULATION GROWTH

49,400



BIRTHS

43,800



DEATHS

67,100



NET IN-MIGRATION

BY 2029

41

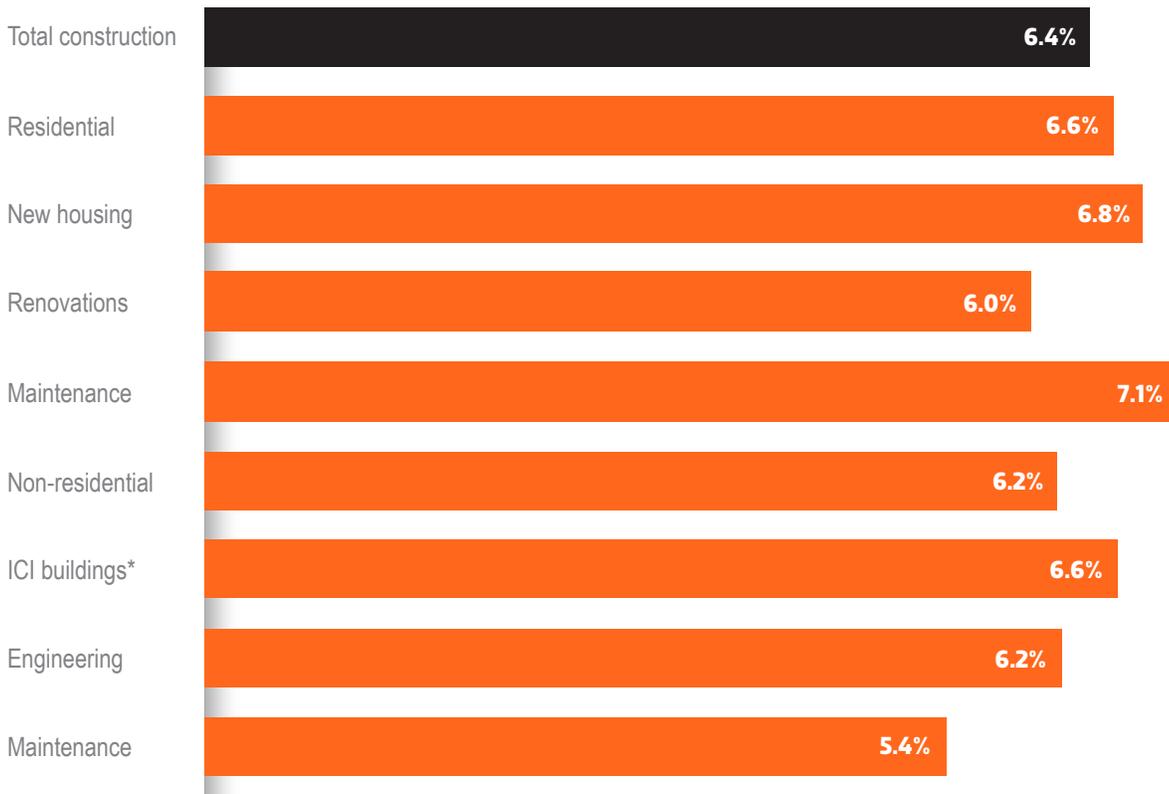


AVERAGE AGE OF CONSTRUCTION WORKFORCE

22%



PERCENT OF CURRENT LABOUR FORCE LOST TO RETIREMENT

Figure 11: Women's share of total direct trades and occupations (on-site), British Columbia

* industrial, commercial, institutional

Source: BuildForce Canada calculations based on Statistics Canada's Labour Force Survey (LFS) and the 2016 Census of the Population.

industrial construction, as approximately 30% of Indigenous people working in construction work in the sector, compared to 20% of non-Indigenous workers.

Lastly, building a sustainable workforce may require B.C.'s construction industry to increase its' share of new Canadians (immigrants). Over the coming decade, the province is expected to welcome an average of 50,000 newcomers every year, making the immigrant population a key component of labour force growth.

British Columbia's construction workforce is made up of approximately 24% new Canadians. Historically, a significant share of landed immigrants into the province were Europeans, who have a higher propensity to choose the construction industry. Currently underway, however, is a shift that has seen a significant rise in immigration from Asia (China and India), whose citizens may have a lower inclination toward construction trades and occupations.

CONCLUSIONS AND IMPLICATIONS

The 2020–2029 *Construction and Maintenance Looking Forward* scenario for British Columbia anticipates a continued escalation in non-residential construction employment requirements over the

medium term to 2021, alongside renewed growth in residential demands. The timing and scale of anticipated non-residential demand growth continues to pose recruitment challenges in the Lower Mainland and in remote regions. Construction of the LNG Canada export terminal at Kitimat is drawing thousands of skilled workers to the North Coast. With local supply stretched, a significant number of skilled workers are coming to the province. More workers will be needed before the anticipated peak is reached in 2021.

Meeting the expected requirements while contending with rising retirements will require a coordinated effort by industry and its stakeholders. Although apprenticeship training has begun to respond to demands, apprentices alone cannot meet immediate demands requiring mobility across sectors, regions, and provinces.

The industry scenario-based approach developed by BuildForce Canada to assess future labour market conditions provides a powerful planning tool for industry, government, and other stakeholders to better track labour market conditions and identify potential pressure points. The assumed timing of proposed major projects in the outlook underpins the market conditions anticipated. Any changes in the anticipated timing of major projects such as the proposed LNG pipeline and other planned engineering projects present risks to anticipated market conditions.

FOR THE MOST DETAILED & COMPREHENSIVE CONSTRUCTION LABOUR MARKET DATA IN CANADA, VISIT

www.constructionforecasts.ca

Developed with industry for industry

Customizable tables and graphs available for:

- Data on more than 30 construction trades and occupations by province looking ahead 10 years
- Macroeconomic and investment data
- Key economic indicators, construction investment and labour market conditions by province and/or sector



Timely construction forecast data is available online at constructionforecasts.ca. Create customized reports on a broad range of selected categories within sector, trade or province covering up to 10 years.

For more information, contact:



Phone: 613.569.5552 | info@buildforce.ca

Funded by the Government of Canada's Sectoral Initiatives Program

The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada



FEBRUARY 2020