

BRITISH COLUMBIA

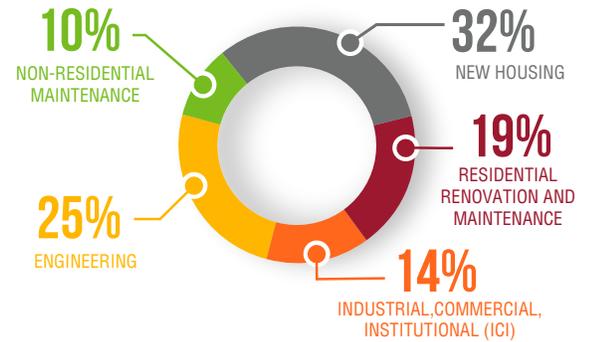
HIGHLIGHTS 2022-2027

In 2021, British Columbia's construction market commenced growing again following the brief pause induced by COVID-19 in 2020. Both residential and non-residential demands are poised to rise further in 2022 and be largely sustained across the 2022-2027 forecast period.

Near-term growth will be driven by the numerous major heavy industrial, public transit, education, health care, road, highway, and bridge projects, as well as the recovery in new housing and renovation work, and commercial building construction. Major project activity continues to increase in 2022, surpassing 2019 levels. This will push non-residential construction employment higher to 2024, driven by rising ICI (industrial, commercial, institutional) building construction activity. Residential demands also continue to recover in 2022, propelled by the carry-over of strong housing starts in 2021. Renewed growth in renovation expenditures will help to sustain employment above 2021 levels through 2027.

Overall, construction employment is expected to peak in 2022, but labour market challenges will be sustained over the near term, led by recent contractions in the labour force and the expected retirement of more than 25,000 workers, or 13% of the current labour force, by 2027. To keep pace with construction demands, the industry will need to recruit and train an estimated 27,600 workers throughout the six-year forecast period.

DISTRIBUTION OF CONSTRUCTION EMPLOYMENT IN 2021, BRITISH COLUMBIA



SIX-YEAR WORKFORCE OUTLOOK FOR BRITISH COLUMBIA



JOB AVERAGE UNEMPLOYMENT RATE **5.6%**

HIGHLIGHTS

- A contraction of the labour force caused the average annual unemployment rate for the sector to fall to 4.6% for 2021.
- Non-residential employment will rise to a peak in 2024 and then recede as current major projects wind down, but remains 2% above the 2021 levels, adding 1,637 workers by 2027.
- Residential employment is expected to rise in 2022 and then decline by 2,015 workers by 2027 – a moderate 2% decline from 2021 levels.
- The retirement of more than 25,000 workers throughout the forecast period will increase the overall recruitment requirement to 27,630 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’s construction market revved back up in 2021 as housing starts reached new highs and major energy and infrastructure projects surged ahead. Heading into 2022, the industry is bracing for further growth, driven by rising major project requirements and sustained levels of new-home construction.

The province’s economic growth recovered strongly in 2021, largely led by increased consumer expenditures and demand for exports. Growth in real GDP continues in 2022, supported by strong levels of consumption, continued growth in non-residential investment, as well as further gains in residential investment.

Non-residential employment recovered in 2021 and is expected to rise sharply in 2022 with the ramping up of major project demands, including LNG (liquefied natural gas) projects and associated pipelines, several public transportation projects, ongoing work at BC Hydro’s Site C dam, wastewater treatment facilities in the Vancouver area and on Vancouver Island, hospital and other health care projects, and the Pattullo Bridge replacement and other infrastructure projects. Employment is anticipated to see continued growth over the short term, peaking in 2024 before slowing slightly over the remainder of the forecast period as current major projects wind down. By 2027, employment is up by just over 1,600 workers (+2%) compared to 2021 levels.

In 2021, activity in the residential sector rebounded as housing starts soared to 46,800 units, up from 37,800 in 2020. Although

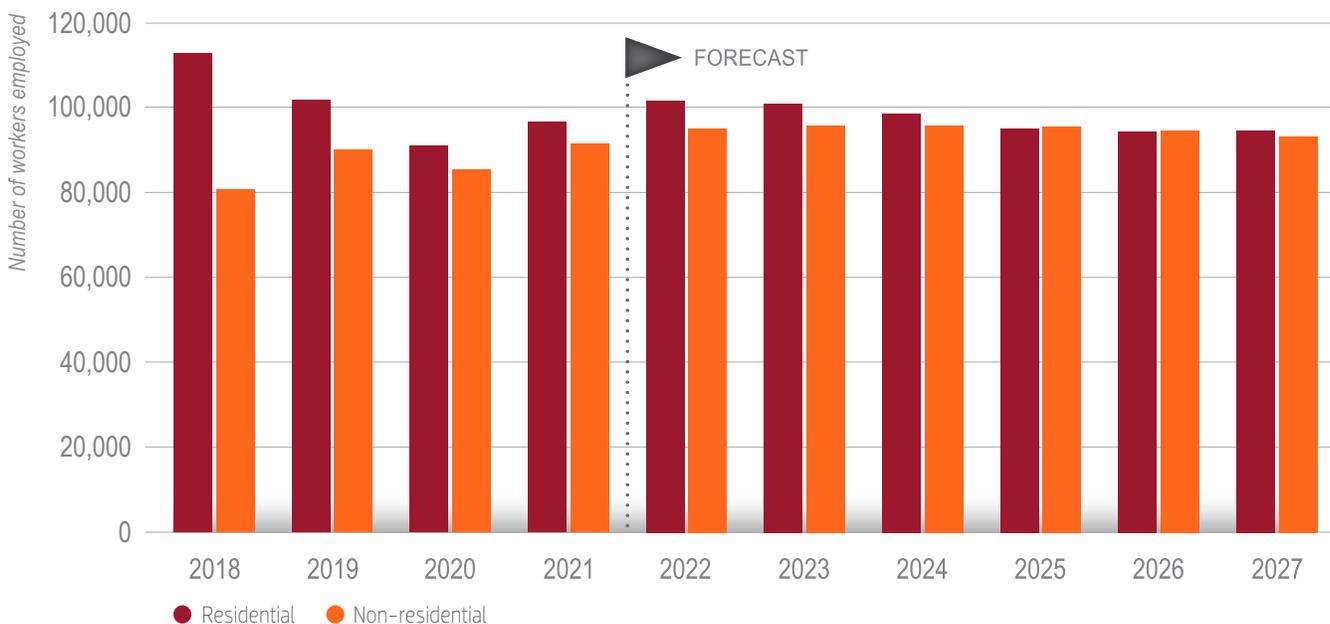
starts are expected to moderate, a backlog of work is expected to sustain demand requirements into 2022. Housing starts decline across the forecast period, as an aging population and slower international migration are expected to curtail population growth, limiting demand for new-home construction. However, rising renovation activity is expected to mostly offset declines related to new housing, leaving overall provincial residential employment lower by approximately 2,000 workers by 2027 – a 2% decline from 2021 levels.

British Columbia’s construction industry has experienced strong broad-based expansion in recent years and remains one of the strongest markets in Canada. The COVID-19 pandemic has exacerbated labour market challenges due to declines in the participation of older workers in the labour force and the availability of skilled workers. These two factors helped to drive unemployment rates back to pre-pandemic lows.

Industry labour requirements are expected to ease somewhat after peak project demands are met, but challenges will persist due to the need to replace an estimated 25,000 retiring workers between 2022 and 2027. Meeting the rapid escalation of current demands has required the training of young workers and attracting large numbers of skilled and experienced workers from outside the province; a situation that is likely to continue over the near term.

In terms of industry employment, Figure 1 shows the provincial change in residential and non-residential employment across the forecast period.

Figure 1: Construction employment growth outlook, British Columbia



Source: Statistics Canada, BuildForce Canada (2022-2027)

SECTOR INSIGHTS

The following sections provide sector-specific insights into the provincial residential and non-residential labour markets. Also included in this report are residential and non-residential market conditions for the B.C. Lower Mainland and Vancouver Island regions.

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 (fewer than 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 construction).

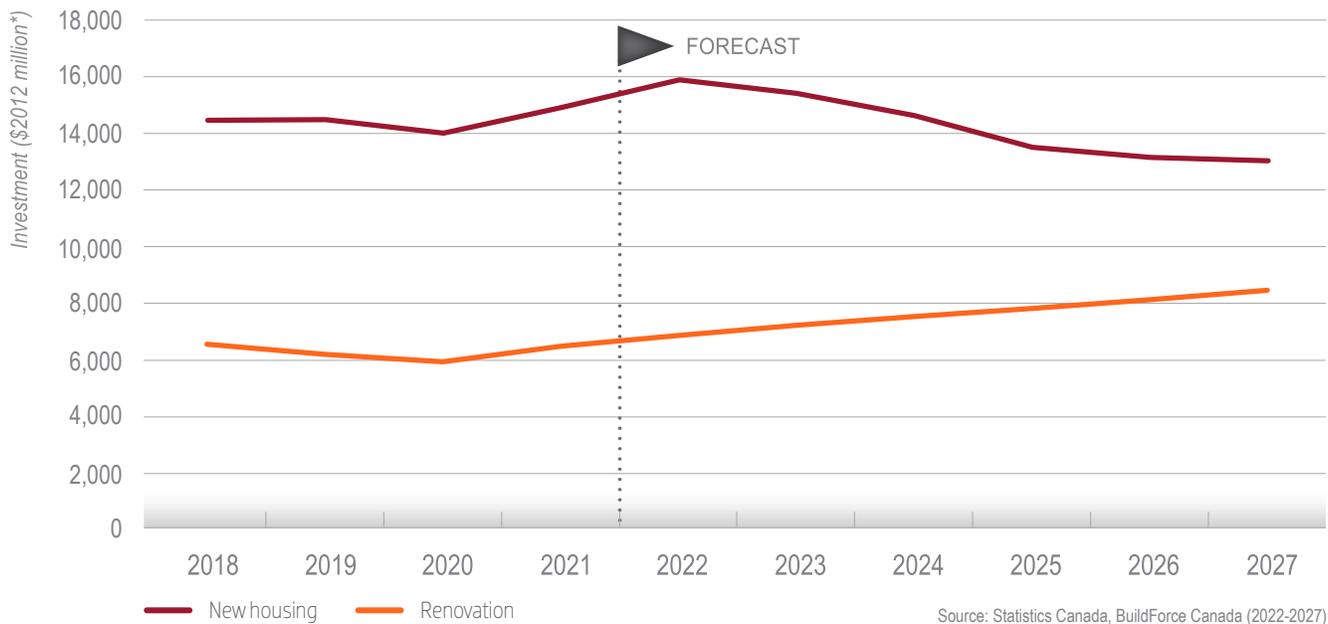
For British Columbia, rankings are reported for 27 residential and 32 non-residential trades and occupations. For the Lower Mainland, rankings are reported for 27 residential and 32 non-residential trades and occupations. For Vancouver Island, rankings are reported for 19 residential and 25 non-residential trades and occupations.

PROVINCIAL RESIDENTIAL SECTOR

Provincial housing starts fell sharply in 2020, as the reduction in migration to the province reduced the demand for new-home construction. In 2021, low interest rates contributed to a strong rebound in housing starts and related investment. Total housing starts increased to an estimated 46,800 units compared to 37,700 in 2020, boosted by increases across all structure types, with the strongest gains in single-detached and apartments.

As shown in Figure 2, residential investment remained elevated in 2022, as new housing slowed moderately while renovation expenditures increased. Following 2022, overall residential demand is anticipated to slow, as housing starts are anticipated to dip below 40,000 units by 2025 and remain on a downward trend throughout the forecast period. Renovation activity is expected to trend upward during this period, driven by the buildup of an aging housing stock, as well as from individuals buying into more mature real estate markets and updating these purchases to their needs and tastes. Despite increased investment in the renovation and maintenance sector over the forecast period, the declining demand for new-home construction leads to lower overall levels of residential investment to 2025. As consumer demand rebounds in the final two years of the period, investment levels experience a slight rise.

Figure 2: Residential construction investment, British Columbia



* \$2012 millions indicates that the investment values are in year 2012 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 in value) due to increases in prices.

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 forecast 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.

Residential employment saw a notable recovery in 2021, increasing 6% from 2020 levels. Employment is projected to exceed pre-COVID employment levels in 2022 and then recede gradually as new-home construction cycles down. Renovation-related employment increases by approximately 6,080 workers by 2027 – a 23% increase from 2021 levels – while maintenance employment grows steadily, adding 2,800 workers (+30%) over the same period.

As renovation and maintenance mostly offset the decline in new-home construction, total residential employment falls by a modest 2,015 workers by 2027 – a 2% decline from 2021 levels.

RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

Table 1 shows tight residential labour markets in 2021, reflecting strong new-housing construction and renovation demands. The rising residential investment, coupled with a reduction in labour force participation, contributed to market challenges across most trades and occupations. In 2022, new-housing demands are expected to ease, but an anticipated backlog of work and increased renovation work will maintain market challenges. Following 2022, slowing demand for new-home construction helps to return labour markets to balance for most trades and occupations.

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 1: Residential market rankings, British Columbia

TRADES AND OCCUPATIONS – RESIDENTIAL	2021	2022	2023	2024	2025	2026	2027
Bricklayers	4	4	3	3	2	3	3
Carpenters	4	4	3	3	2	3	3
Concrete finishers	4	4	3	3	3	3	3
Construction estimators	4	4	3	2	2	3	3
Construction managers	4	4	3	3	2	3	3
Contractors and supervisors	4	4	3	3	3	3	3
Crane operators	4	4	3	2	2	3	3
Electricians	4	4	3	3	3	3	3
Elevator constructors and mechanics	4	5	3	3	3	3	3
Floor covering installers	4	4	3	3	3	3	3
Gasfitters	4	4	3	2	2	3	3
Glaziers	4	5	3	3	3	3	3
Heavy equipment operators (except crane)	4	4	3	3	2	3	3
Homebuilding and renovation managers	4	4	4	3	3	3	3
Insulators	4	4	3	2	2	3	3
Ironworkers and structural metal fabricators	3	4	3	2	2	2	3
Painters and decorators	4	4	4	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	4	4	3	3	2	3	3
Plumbers	4	4	3	3	3	3	3
Refrigeration and air conditioning mechanics	4	5	3	3	3	3	3
Residential and commercial installers and servicers	4	4	3	3	3	3	3
Roofers and shinglers	3	4	4	3	3	3	3
Sheet metal workers	4	4	3	3	2	3	3
Tilesetters	4	4	3	3	2	3	3
Trades helpers and labourers	3	4	3	3	2	3	3
Truck drivers	4	4	3	3	2	3	3
Welders and related machine operators	3	4	3	3	2	3	3

Source: BuildForce Canada

PROVINCIAL NON-RESIDENTIAL SECTOR

As shown in Figure 3, non-residential investment has seen significant growth over the past five years and is set to rise in 2022 and remain elevated to 2024. This rise is driven primarily by major project construction requirements.

Engineering investment is expected to remain elevated to 2023, driven by demands related to major public transit and heavy-industrial projects, including LNG developments, pipelines, port expansions, hydroelectric power, and wastewater developments. In addition to the longer-term public infrastructure investments in roads, highways, and bridgework, the fall 2021 floods will require additional short-term investments to reopen damaged infrastructure, and in the longer term, to enhance this infrastructure to make it more resilient to flooding. With construction of the majority of these projects completed by 2025, investment levels fall below 2021 levels in the final two years of the forecast period.

Activity in ICI building construction declined in 2020, with commercial building activity the most severely impacted by COVID-19, and industrial building construction by reduced investment in manufacturing and transportation, as well as the completion of the G3 Terminal expansion project. Investment is expected to continue recovering and experience rapid growth to 2024 with the stacking of several major health care and education infrastructure projects, as well as spin-off work from major engineering projects. ICI building investment is expected to level off but remain elevated for the remainder of the forecast period.

The major-project-driven nature of the engineering demands in British Columbia will boost non-residential employment in line with the projected ebb and flow of the construction of these major projects. The sector is expected to experience growth for most of the forecast period; however, the completion of major projects should lead to employment declines from heightened levels in the latter part of the period, particularly in the engineering segment.

Engineering construction employment, which surged in 2021 and 2022, recedes as major projects wind down, falling by 2,500 workers by 2027 – a 5% decline from 2021 levels. ICI employment is expected to experience strong growth over the forecast period, increasing by approximately 2,100 workers (+8%) from 2021 to 2027. Employment related to non-residential maintenance also grows steadily over the forecast period, adding more than 2,100 workers (+11%).

Overall, non-residential employment is expected to rise by more than 1,600 workers by 2027 – a 2% increase from 2021 levels. Table 2 summarizes the percent change in non-residential employment by sector across two periods: the short term (2022–2024) and the long term (2025–2027).

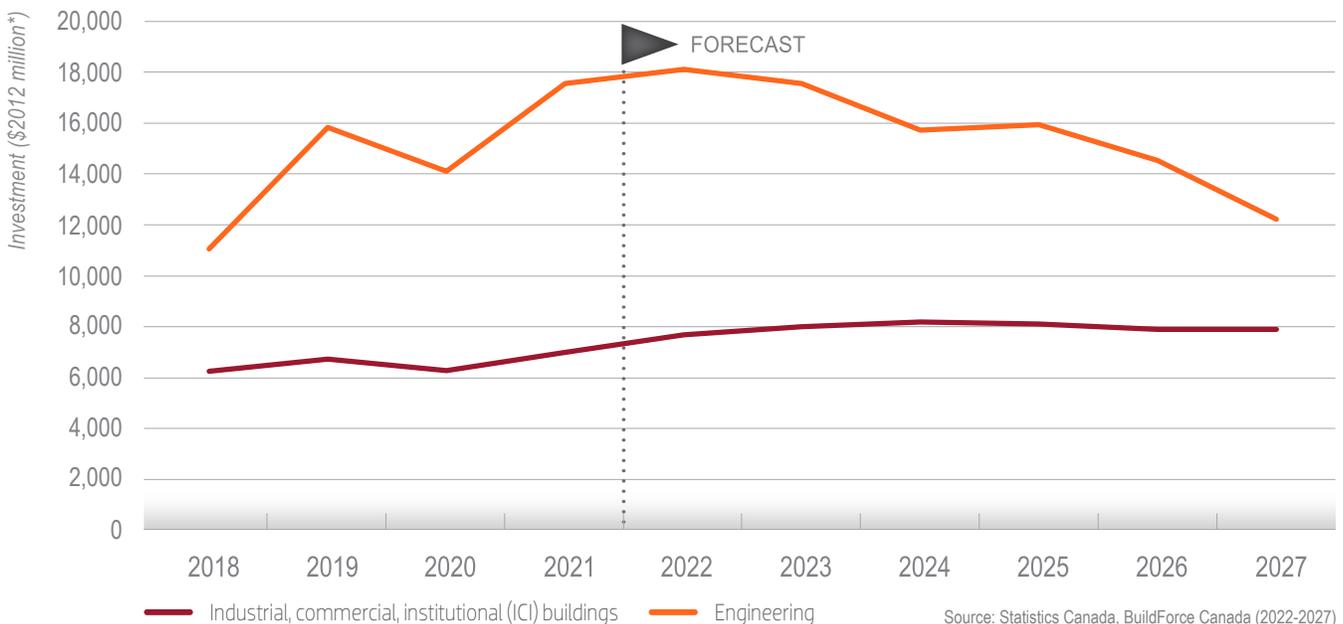
Table 2: Changes in non-residential employment by sector, British Columbia

SECTOR		% CHANGE 2022–2024	% CHANGE 2025–2027
Total non-residential employment		5%	-3%
ICI* buildings	Industrial	16%	-1%
	Commercial, institutional and government	15%	-8%
Engineering	Highways and bridges	-5%	-6%
	Heavy and other engineering	-1%	-4%
Maintenance		5%	6%

Source: Statistics Canada, BuildForce Canada (2022-2027)

* industrial, commercial, institutional

Figure 3: Non-residential construction investment, British Columbia



* \$2012 millions indicates that the investment values are in year 2012 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 in value) due to increases in prices.

NON-RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

Table 3 shows that non-residential labour market conditions tightened in 2021, led by a rebound in commercial and industrial investment, as well as further investments in institutional construction. Engineering construction strengthened in 2021 with rising construction activity at the LNG Canada facility, and increased highway and bridge construction demands, including estimated increased construction demands related to the fall 2021 flooding in the province's interior.

Market conditions remain tight in 2022 with the anticipated start of construction of the Woodfibre LNG project and several major health projects that support increased ICI investment. Investment begins to slow in 2023 with multiple trades returning to balanced conditions; however, LNG construction keeps other occupations tight. In 2024, hospital projects continue but recede from peak levels of activity; this is true of highway, bridge, and LNG projects as well. Following 2024, demand is expected to remain mostly balanced for the remainder of the forecast period.

Table 3: Non-residential market rankings, British Columbia

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

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Table 3: Non-residential market rankings, British Columbia (continued)

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2021	2022	2023	2024	2025	2026	2027
Trades helpers and labourers	4	3	3	3	3	3	3
Truck drivers	4	3	3	3	3	3	3
Welders and related machine operators	5	5	4	3	3	3	3

Source: BuildForce Canada

LOWER MAINLAND CONSTRUCTION FORECAST

The Lower Mainland³ construction market, which accounts for 60% of the province’s construction employment, strengthened in 2021, led by a recovery in ICI building construction and intensification of major project activity.

Housing construction, dominated by apartments, also recovered in 2021, but employment remained below pre-pandemic levels.

Residential construction demands should strengthen in 2022, driven by increased new-home construction and renovation activity, but employment demands are expected to recede across the remainder of the forecast period as new-housing activity slows.

Total construction employment is projected to rise by 5% to a peak in 2023 before receding as major projects wind down and new-home construction slows. Lower Mainland construction employment is projected to decline by 1,300 workers by 2027, or a modest 1% decline compared to 2021.

Over the same period, the industry will need to replace 14,000 workers expected to retire. An estimated 12,500 new-entrant workers

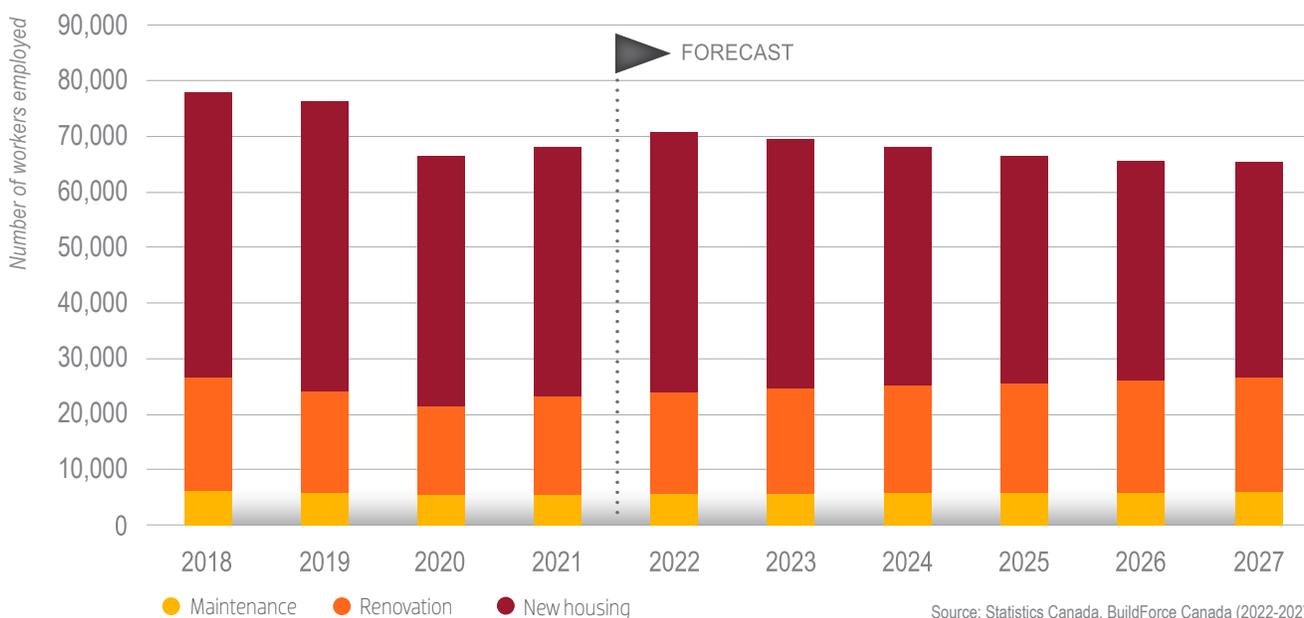
under the age of 30 from the local population may join the industry during this period, but unless recruitment is increased, a potential recruitment gap of almost 2,600 workers may need to be recruited from outside the local construction industry to meet future labour force needs.

LOWER MAINLAND RESIDENTIAL SECTOR

Housing starts rebounded to an estimated 30,000 units in B.C.’s Lower Mainland in 2021, following a sharp reduction to just 26,300 units recorded in 2020. Slower population growth and rising interest rates are expected see starts receding back to 2020 levels by the end of the forecast period.

Residential employment rose modestly in 2021, driven by a strong rise in renovation activity alongside increased new-home construction. Further gains are expected in 2022 as the overall economy recovers from the pandemic. Following 2022, declines in employment related to new-home construction are only partially offset by rising renovation work, leading overall residential construction employment lower by almost 2,700 workers (-4%) over the forecast period. Figure 4 shows employment trends by sector for residential construction across the forecast period.

Figure 4: Residential construction employment growth outlook, Lower Mainland, British Columbia



³ The Lower Mainland region is defined by the economic regions of Greater Vancouver, Fraser Valley, Sunshine Coast, Squamish, and Lillooet.

THE AVAILABLE LABOUR FORCE

The decline in residential employment will reduce labour force requirements by almost 1,200 workers by 2027. The retirement of 8,400 workers during this period will bring the overall recruitment requirement to 7,200 workers. However, the expected recruitment of 7,100 new-entrant workers from the local population under the age of 30 should largely maintain balanced labour force requirements to 2027.

RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

Table 4 shows that residential labour markets tightened in 2021 following a reprieve in 2020. A recovery in new-housing construction and renovation demands, alongside a pullback in labour force participation, is expected to sustain pressures into 2022.

Following 2022, slowing demand for new-home construction eases markets for selected trades, while increased renovation and maintenance activity sustains demands and balanced market conditions for others.

Table 4: Residential market rankings, Lower Mainland, British Columbia

TRADES AND OCCUPATIONS – RESIDENTIAL	2021	2022	2023	2024	2025	2026	2027
Bricklayers	4	4	3	3	3	3	3
Carpenters	4	4	3	3	3	3	3
Concrete finishers	4	3	3	3	3	3	3
Construction estimators	4	4	3	3	2	3	3
Construction managers	4	4	3	2	2	2	3
Contractors and supervisors	4	4	3	3	3	3	3
Crane operators	4	4	3	2	2	2	3
Electricians	4	3	3	3	3	3	3
Elevator constructors and mechanics	4	4	3	3	2	3	3
Floor covering installers	4	4	3	3	3	3	3
Gasfitters	4	4	3	3	3	3	3
Glaziers	3	4	3	3	2	3	3
Heavy equipment operators (except crane)	4	4	3	3	3	3	3
Homebuilding and renovation managers	4	4	3	3	3	3	3
Insulators	4	4	3	3	3	3	3
Ironworkers and structural metal fabricators	4	4	3	2	2	2	2
Painters and decorators	4	4	3	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	4	4	3	3	3	3	3
Plumbers	4	4	3	3	3	3	3
Refrigeration and air conditioning mechanics	4	4	3	3	2	3	3
Residential and commercial installers and servicers	4	3	3	3	3	3	3
Roofers and shinglers	4	3	3	3	3	3	3
Sheet metal workers	4	4	3	3	3	3	3
Tilesetters	4	4	3	3	2	3	3
Trades helpers and labourers	3	3	3	3	3	3	3
Truck drivers	4	4	3	3	3	3	3
Welders and related machine operators	3	4	3	3	2	3	3

Source: BuildForce Canada

LOWER MAINLAND NON-RESIDENTIAL SECTOR

Significant near-term demands are expected to add more than 4,500 non-residential workers (+10%) to a 2023 employment peak, driven by a wave of major projects, including the Pattullo Bridge replacement, Millennium Line (Broadway), Surrey Langley SkyTrain, Woodfibre LNG, St. Paul’s Hospital, Royal Columbian Hospital, and several school projects. Following 2023, investment is expected to recede as projects wind down. Overall, non-residential employment is expected to increase by approximately 1,400 workers (+3%) over the forecast period.

Propelled by major health- and education-sector projects, employment in ICI building construction is expected to experience strong growth over the near term, adding almost 3,300 workers (+22%) to 2024. Following the peak, employment is expected to retreat to 2026, but overall ICI employment is expected to be some 2,300 workers (+15%) higher in 2027 than levels recorded in 2021.

Engineering construction demands are expected to rise to peak levels in 2023, driven by investments in public transportation, various wastewater treatment facilities, and roads, highways, and bridgework, including the Pattullo Bridge replacement. Near-term engineering project demands add 1,723 workers (+7%) to 2023 before cycling down over the long term as projects wind down.

Maintenance requirements are projected to rise over the forecast period, adding 485 workers (+6%) between 2021 and 2027.

Figure 5 shows the employment trends by sector for non-residential construction across the forecast period.

THE AVAILABLE LABOUR FORCE

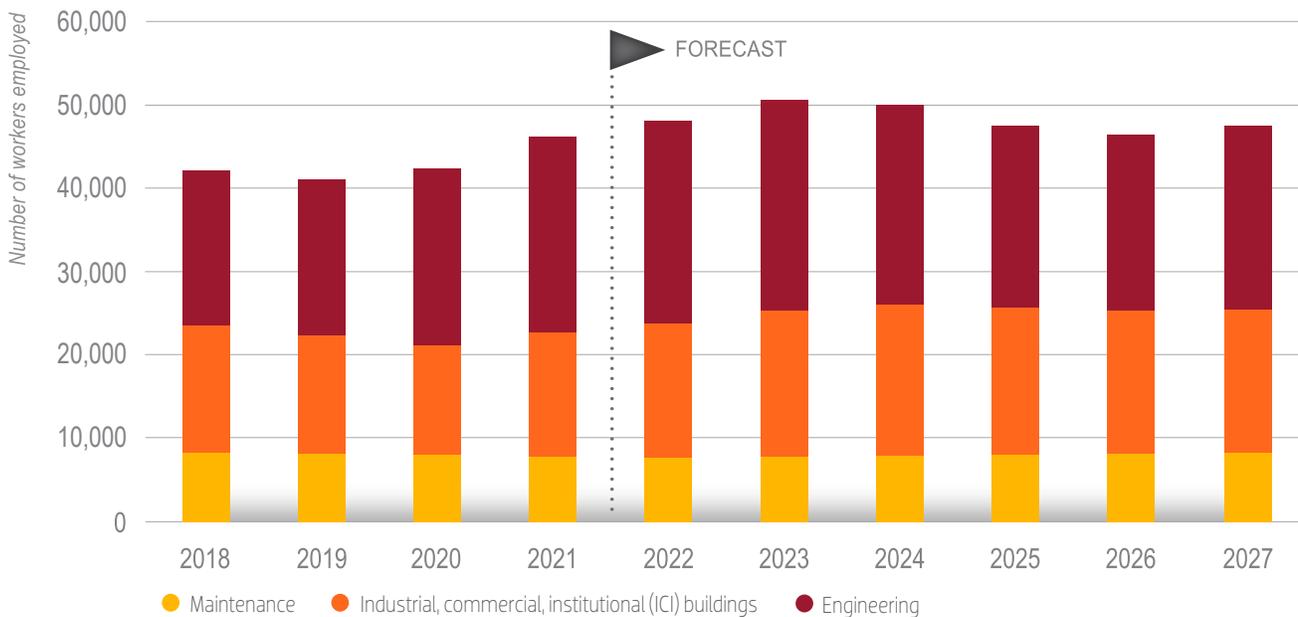
The rise in non-residential employment demands will necessitate the recruitment of an additional 2,300 workers over the forecast period. The retirement of 5,700 workers during this period will increase the overall recruitment requirement to approximately 7,900 workers. The addition of just over 11,000 local new-entrant workers under the age of 30 will help to moderate labour force pressures, but even at these levels, a projected deficit of almost 2,500 workers may emerge by 2027 unless recruitment is increased.

NON-RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

As shown in Table 5, non-residential market conditions were very tight in 2021, as rising major project demands coincided with recovering ICI building construction. Conditions should remain tight for selected trades and occupations in 2022 and 2023, as construction demands related to ICI buildings and other engineering continue rising to peak levels of activity.

As investment slows in 2024, most trades return to balanced conditions. As hospital projects and highway and bridge work recede from peak levels of activity, market conditions weaken briefly in 2025 and return to balance by 2026 as most current major projects are completed.

Figure 5: Non-residential construction employment growth outlook, Lower Mainland, British Columbia



Source: Statistics Canada, BuildForce Canada (2022-2027)

Table 5: Non-residential market rankings, Lower Mainland, British Columbia

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

Source: BuildForce Canada

VANCOUVER ISLAND CONSTRUCTION OUTLOOK

The Vancouver Island region⁴ experienced a more modest slowdown in construction activity in 2020 relative to the rest of British Columbia, and experienced stronger growth in 2021, driven by a surge in new-housing construction. The start of major health care and education projects will contribute to a further expansion in 2022. Construction activity is expected to moderate later in the forecast period, but construction employment is projected to decline by less than 1,400 workers (-4%) by 2027 compared to 2021 levels. Hiring demands will be driven by the requirement to replace an estimated 4,900 workers, or 14% of the current labour force, that is expected to retire from the construction industry by 2027.

VANCOUVER ISLAND RESIDENTIAL SECTOR

Residential investment has seen significant growth in recent years, fuelled by migration from other regions and countries. Barriers to travel and migration in 2020 due to COVID-19 had less of a negative impact on housing starts on the Island compared to the Lower Mainland. While international migration remained constrained in 2021, positive intraprovincial migration contributed to a strong rise in housing starts, surging to an estimated 8,400 units in 2021 (+27%), up from 6,600 in 2020.

Housing starts and new-home construction investment are expected to decline across the forecast period due to lower demands as the

population ages and opts increasingly to invest in renovations over the purchase of a new home. As a result of these trends, renovation work, which suffered declines in 2020 due to COVID-19, is expected to increase throughout the forecast period.

Residential employment is expected to reach a forecast high of 21,100 workers in 2022 and then recede to 18,500 through to 2027, leaving industry employment approximately 2,160 workers (-10%) lower compared to 2021 levels. Figure 6 shows the employment trends by sector for residential construction.

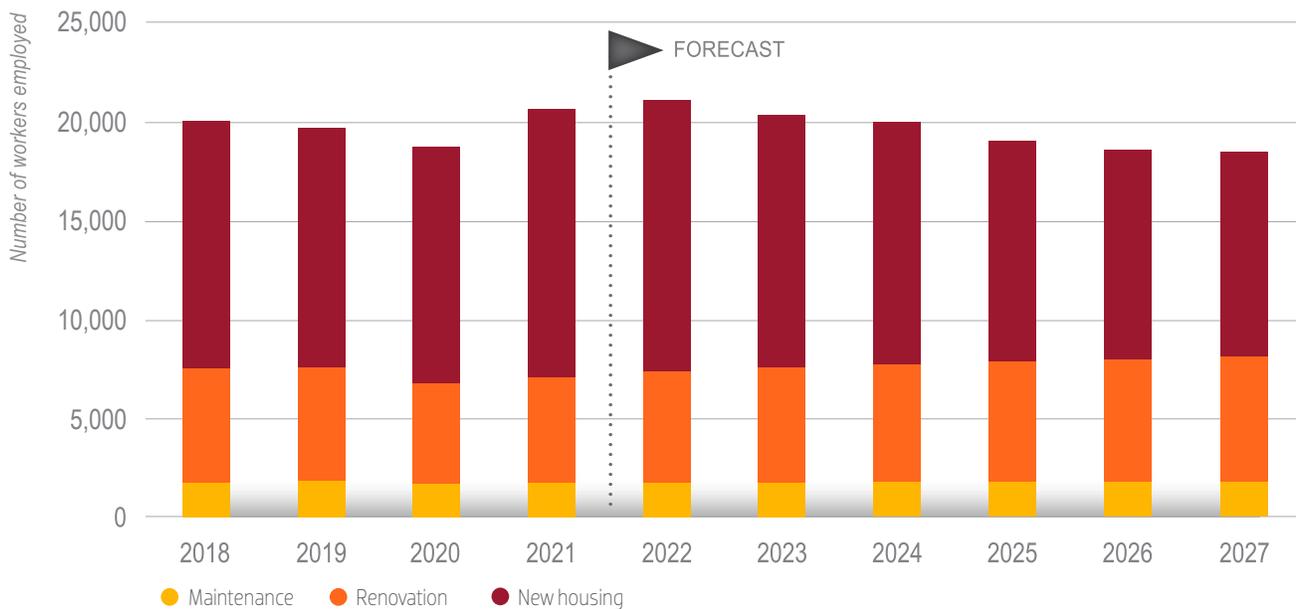
THE AVAILABLE LABOUR FORCE

As overall activity slows from the 2022 peak, the residential labour force is projected to decline by just over 1,764 workers over the forecast period. The expected retirement of just over 3,000 workers during this period translates into a recruitment requirement of almost 1,300 workers.

RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

The rankings in Table 6 reflect very tight residential labour market conditions in 2021 due to a surge in demand for new homes combined with a recovery in renovation work. Conditions are expected to remain tight in 2022 before returning to mostly balanced for the rest of the forecast period, as declining new-home construction demands are expected to be met by rising retirements.

Figure 6: Residential construction employment growth outlook, Vancouver Island, British Columbia



Source: Statistics Canada, BuildForce Canada (2022-2027)

⁴ The Vancouver Island & Coast Economic Region includes a number of regional districts, including the Capital Region, Cowichan Valley, Nanaimo, Alberni-Clayoquot, Strathcona, Comox Valley, Powell River, Mount Waddington, and Central Coast.

Table 6: Residential market rankings, Vancouver Island, British Columbia

TRADES AND OCCUPATIONS – RESIDENTIAL	2021	2022	2023	2024	2025	2026	2027
Bricklayers	5	4	3	3	2	3	3
Carpenters	5	4	3	3	2	3	3
Concrete finishers	4	4	3	3	2	3	3
Construction estimators	5	4	3	3	3	3	3
Construction managers	5	4	3	3	2	3	3
Contractors and supervisors	4	4	3	3	3	3	3
Electricians	4	4	3	3	3	3	3
Floor covering installers	4	4	4	3	3	3	3
Heavy equipment operators (except crane)	5	4	3	3	2	3	3
Homebuilding and renovation managers	5	4	4	4	3	4	4
Painters and decorators	4	4	3	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	5	4	3	3	2	3	3
Plumbers	4	4	4	3	3	3	4
Residential and commercial installers and servicers	4	4	3	3	3	3	3
Roofers and shinglers	4	4	3	3	3	3	3
Sheet metal workers	5	4	3	3	2	3	3
Tilesetters	5	4	4	3	3	3	3
Trades helpers and labourers	5	4	3	3	2	3	3
Truck drivers	5	4	3	3	2	3	3

Source: BuildForce Canada

VANCOUVER ISLAND NON-RESIDENTIAL SECTOR

The CFB Esquimalt A/B Jetty Recapitalization Project, University of Victoria student housing and dining hall, major wastewater treatment projects, and the start of the Nanaimo Correctional Centre helped to sustain non-residential construction activity in 2021. Demand is expected to step up in 2022, driven by major health care and education projects, including the Cowichan District Hospital and Cowichan Secondary School replacements, as well as a diverse group of public transportation and infrastructure projects. Commercial building investment is projected to rise as tourism recovers, alongside growth in the region's population, increasing the demand for retail and other commercial building construction. The anticipated start of construction of the John Hart Dam Seismic Upgrade project leads to additional employment, starting in 2023.

Non-residential employment is projected to grow by just over 800 workers (+6%) over the six-year forecast period to 2027. Figure 7 shows the employment trends by sector for non-residential construction across the forecast period.

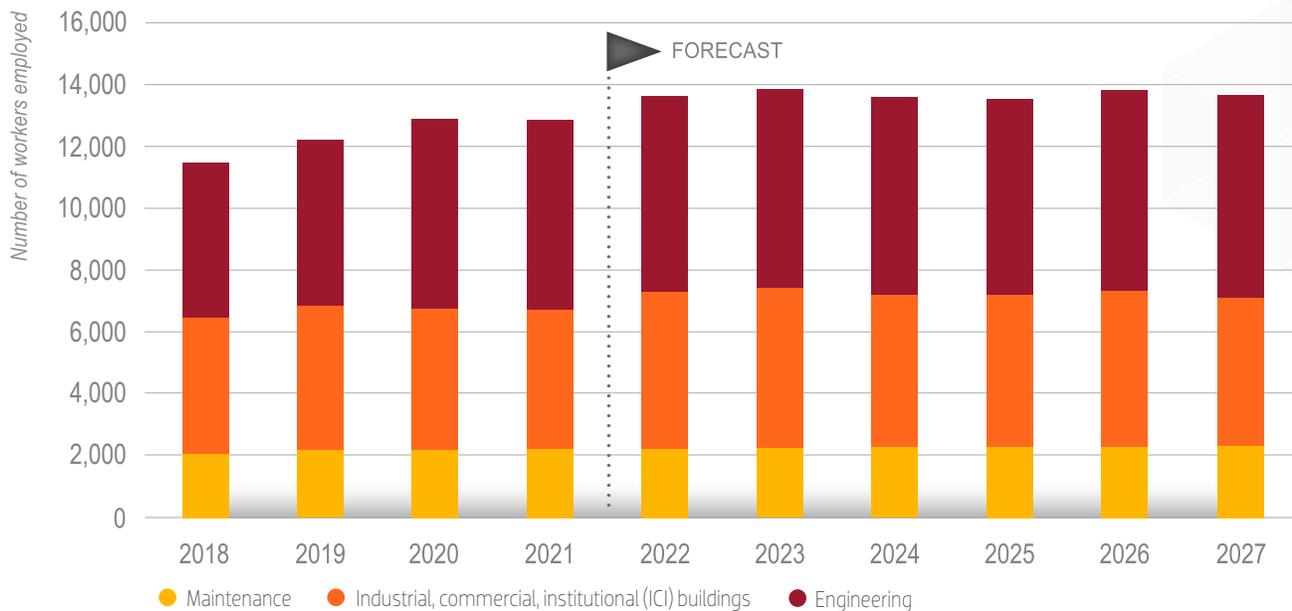
THE AVAILABLE LABOUR FORCE

The rise in overall employment will necessitate the industry to recruit an additional 900 workers over the forecast period. The retirement of 1,900 workers during this period will increase the overall regional recruitment requirement to 2,900 workers. The addition of 1,500 new-entrant workers under the age of 30 from local recruitment efforts will help to moderate labour force pressures, but unless recruitment is increased, a potential deficit of 1,300 workers may emerge by 2027.

NON-RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

The rankings in Table 7 reflect variations in the degree of market tightness for non-residential labour markets in 2021, with tighter conditions for trades more concentrated in institutional-sector projects. Stronger growth in 2022 tightens market conditions across all trades and occupations, as work on the Cowichan hospital commences alongside a recovery in commercial and industrial building construction. Labour market conditions are anticipated to return to balance by 2024 as these projects reach completion. Generally balanced labour markets prevail thereafter, as growth is more gradual.

Figure 7: Non-residential construction employment growth outlook, Vancouver Island, British Columbia



Source: Statistics Canada, BuildForce Canada (2022-2027)

Table 7: Non-residential market rankings, Vancouver Island, British Columbia

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2021	2022	2023	2024	2025	2026	2027
Boilermakers	3	4	4	3	3	3	3
Bricklayers	3	5	4	3	3	3	3
Carpenters	3	4	4	3	3	3	3
Concrete finishers	3	5	4	2	3	3	3
Construction estimators	4	4	4	3	3	4	4
Construction managers	4	5	4	4	3	4	4
Contractors and supervisors	4	4	4	3	3	4	4
Crane operators	3	5	4	3	3	3	3
Drillers and blasters	4	5	3	3	3	3	3
Electricians	4	4	4	3	3	3	3
Glaziers	4	5	4	3	3	3	3
Heavy equipment operators (except crane)	3	5	3	3	3	4	3
Heavy-duty equipment mechanics	4	4	4	3	3	3	3
Insulators	3	4	3	3	3	3	3
Ironworkers and structural metal fabricators	3	4	3	3	3	3	3
Painters and decorators	3	5	4	3	3	3	3

continued on next page

Table 7: Non-residential market rankings, Vancouver Island, British Columbia (continued)

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2021	2022	2023	2024	2025	2026	2027
Plasterers, drywall installers and finishers, and lathers	3	5	4	3	3	3	3
Plumbers	4	4	4	3	3	4	3
Refrigeration and air conditioning mechanics	4	4	4	3	3	4	3
Residential and commercial installers and servicers	3	5	3	3	3	3	3
Sheet metal workers	4	4	4	3	3	3	3
Steamfitters, pipefitters, and sprinkler system installers	3	4	4	3	3	3	3
Trades helpers and labourers	3	4	3	3	3	3	3
Truck drivers	3	4	4	3	3	4	3
Welders and related machine operators	3	4	4	2	3	3	3

Source: BuildForce Canada

BUILDING A SUSTAINABLE PROVINCIAL LABOUR FORCE

THE AVAILABLE LABOUR FORCE

Both employment and labour force numbers in 2021 were still below 2019 levels, contributing to an overall decrease in the rate of construction unemployment in the province. At the same time, investment in construction activity grew, leading to higher overall industry employment that was partially achieved through out-of-province recruitment.

In 2021, the resident labour force remained 1.7% below 2019 levels, as many workers who were laid off or left the labour force during the height of the pandemic restrictions had not returned. Statistics Canada Labour Force Survey data suggests that the majority of these workers are over the age of 55.

British Columbia's construction industry will likely need to recruit 27,600 additional workers over the six-year forecast period to keep pace with expansion and replacement demands, as nearly 25,100 workers are expected to retire during this period, or 13% of the 2021 construction labour force. Over the forecast period, the addition of almost 22,000 new-entrant workers under the age of 30 from local recruitment efforts will help to moderate labour force pressures, but unless anticipated recruitment is increased, a deficit of 5,700 workers is expected to emerge by 2027.

Industry is faced with a projected period of growth over the next few years, while balancing against an aging workforce and expected retirements. This will necessitate large numbers of workers over a short period, and these demands cannot be met solely through increasing the number of new or inexperienced workers. Significant recruiting pressures for experienced skilled workers are expected to emerge in the short term.

Figure 8 provides a summary of the estimated changes in the construction labour force across the full 2022–2027 forecast period.

APPRENTICESHIP

Future labour force development is critical to maintaining the vitality and effectiveness of the construction labour force, and apprenticeship is a critical pathway of entry into the construction industry for youth and young adults. This is especially true for those working in ICI and heavy-industrial construction. As such, apprenticeship training is typically a barometer of career interest in the sector. When apprenticeship numbers rise, overall skilled trades recruitment typically follows. As such, it remains a useful measure of the industry's success in recruiting the next generation of skilled workers to the industry. However, tracking apprenticeship development cannot just be measured using aggregated numbers. What the industry needs is accurate information regarding which trades are registering increases and which trades are undertraining to meet replacement demands.

The following section draws on the latest available data to help provide the industry with some measure of guidance regarding current apprenticeship development rates within the province's 20 largest construction trade programs and the anticipated future needs to maintain current capacity as measured by holders of certificates of qualification.

New registrations in the 20 largest construction trade programs peaked at 8,540 in 2013 before declining to a low of 7,400 in 2017. New registrations returned to peak levels in 2018 before falling to 7,900 (-7%) in 2019. The pool of newly certified workers further diminished in 2020 due to the impacts of COVID-19. New registrations declined by an additional 18% in 2020, as apprenticeship training and certification was largely placed on hold.

Figure 8: Changes in the construction 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

British Columbia's construction industry is projected to require an estimated 8,610 new certified journeypersons to sustain current workforce levels of certificate of qualification (CoQ) holders and to keep pace with anticipated future demands.

Table 8 provides a provincial 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 number of new apprentices required to fulfill demand requirements over the forecast period, taking into account trends in program completion rates.

Table 9 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 forecast period and the likely targeted number of new apprentices required. Based on projected new registrations, several trades were identified as being at risk of potentially undersupplying the number of new journeypersons required by 2027. Trades within this group include Boilermaker, Gasfitter, Glazier, Heavy-Duty Equipment Technician, Industrial Electrician, Insulator, Lather, Painter and Decorator, Roofer, and Welder. It is important to note that since it is difficult to determine in what sectors apprentices may work after completing their program, the supply risk analysis compares only the projected supply of new journeypersons to the certification requirements across all industries. The analysis does not account for existing imbalances at the 2021 starting point.

Table 8: Estimated construction certification demand and projected target of new entrants at 44% assumed rate of program completion, British Columbia, 2022 to 2027

	2022	2023	2024	2025	2026	2027	Total 2022–2024	Total 2025–2027
Total certification demand – all industries	5,286	2,488	1,819	1,319	1,358	1,721	9,593	4,398
Total certification demand – construction	3,508	1,494	1,120	618	801	1,069	6,122	2,488
New apprentices required – construction	2,657	3,680	4,416	4,517	4,627	5,141	10,753	14,285
New construction apprentices required as a share of labour force (%)	3%	4%	4%	5%	5%	5%	4%	4%

Source: BuildForce Canada

Table 9: Estimated construction certification demand and projected target of new entrants by trade, British Columbia, 2022 to 2027

Trade	Total certification demand – construction	New apprentices required – construction	Apprentice certification supply risk – all Industries
Boilermaker	188	280	●
Heavy-Duty Equipment Technician	248	3,074	●
Painter and Decorator	641	2,216	●
Gasfitter	127	214	●
Industrial Electrician	891	917	●
Lather (Interior Systems Mechanic)	224	1,239	●
Welder	208	462	●
Roofer	258	1,022	●
Glazier	200	440	●
Insulator (Heat and Frost)	126	298	●
Industrial Mechanic (Millwright)	144	185	●
Carpenter	1,712	9,171	●
Steamfitter/Pipefitter	140	439	●
Metal Fabricator (Fitter)	70	167	●
Refrigeration and Air Conditioning Mechanic	412	477	●
Plumber	1,386	2,271	●
Heavy Equipment Operator	189	243	●
Sheet Metal Worker	173	201	●
Construction Electrician	1,210	1,620	●
Sprinkler System Installer	64	103	●
Total	8,609	25,039	

- **At risk:** Certifications required exceed projected completions
- **Balanced conditions:** Certifications required in line with projected completions
- **Ample supply:** Projected completions exceed certifications required

Source: BuildForce Canada

UNDERREPRESENTED GROUPS OF WORKERS

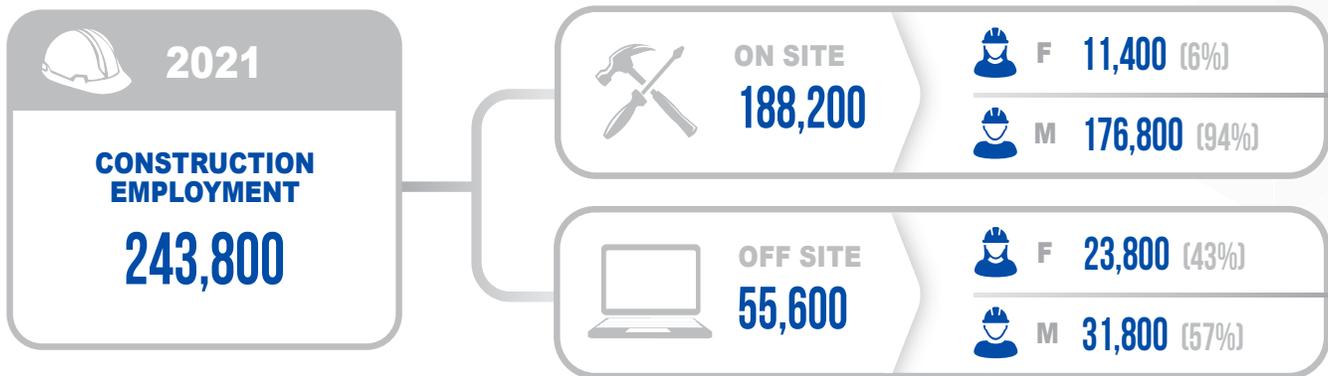
Due in part to lower fertility rates and smaller family sizes in Canada for more than three decades, the share of younger Canadians available to enter the labour force has been in decline for several years. As the baby boomer generation of workers commences retirement over the next decade, the competition for younger workers will be intense. To help mitigate the impact of this shift in demographics, the construction industry must diversify its recruitment. In order to succeed, the industry must increase its recruitment of individuals from groups traditionally underrepresented in the current construction labour force, including women, Indigenous people, and newcomers.

In 2021, there were approximately 35,200 women employed in British Columbia's construction industry, of which 32% worked on site, directly on construction projects, while the remaining 68% worked off site,

primarily in administrative and management-related occupations. Of the 188,200 tradespeople employed in the industry, women made up only 6% (see Figure 9).

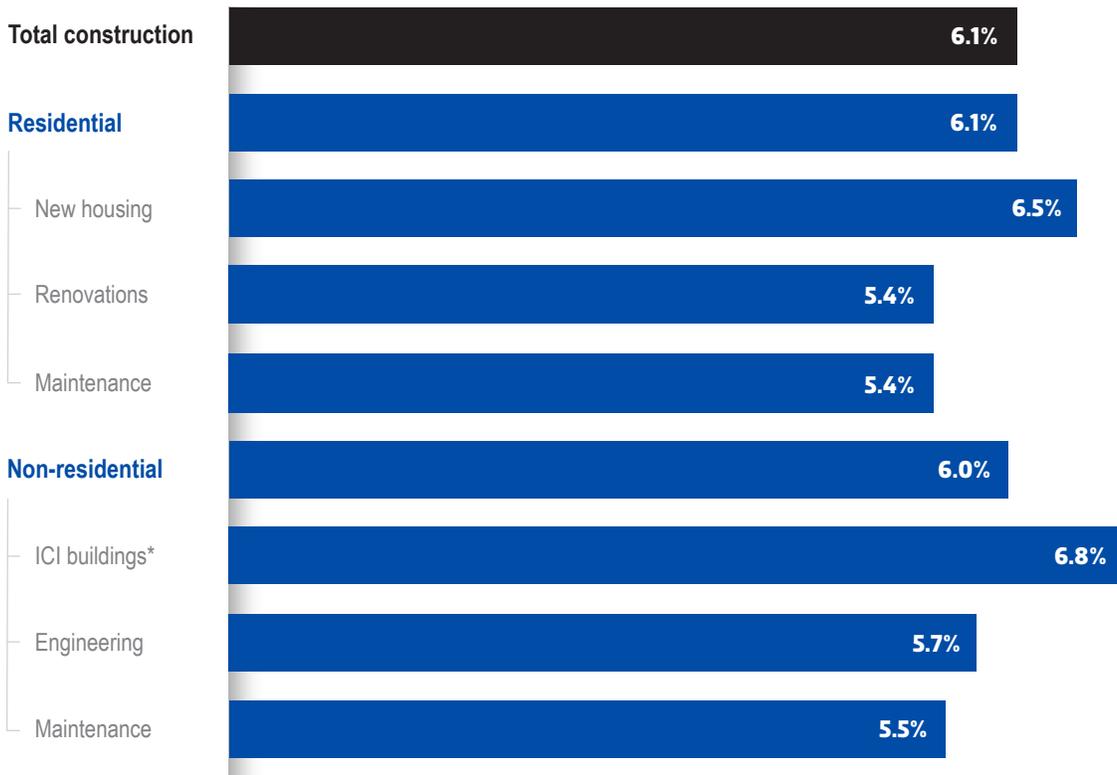
The estimated 11,400 tradeswomen in British Columbia are represented across all sectors of construction. Women account for a relatively equal share of total tradespeople in the residential and non-residential construction sectors. Across sectors, ICI building construction has the highest representation of women, accounting for 6.8% of the workforce, as shown in Figure 10, followed closely by new-housing construction (6.5% of the workforce). The top five trades and occupations in which women tend to be employed are trades helpers and labourers (22% of all tradeswomen), construction managers (18%), painters and decorators (11%), contractors and supervisors (9%), and carpenters (7%).

Figure 9: Detailed construction employment by gender, British Columbia, 2021



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

Figure 10: 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.

The Indigenous population is another underrepresented group that presents recruitment opportunities for British Columbia's construction industry. In 2021, Indigenous people accounted for approximately 5% of British Columbia's total working-age population.⁵ The Indigenous population is the fastest growing in Canada and has a higher propensity to choose the construction industry as a career choice. In 2021, an estimated 7.5% of non-Indigenous Canadians were employed in the construction industry, compared to 9.4% for the Indigenous population.⁶ Given the predisposition of Indigenous workers to consider careers in construction, there may be scope to further increase the recruitment of Indigenous people into the industry.

British Columbia's construction industry may also leverage newcomers (immigrants) to Canada over the forecast period to meet labour requirements. As of 2018, newcomers and more established immigrants accounted for 24% of British Columbia's construction workforce.⁷ Based on the Labour Force Survey, Europe and Asia have continued to be the largest source regions for immigrants currently working in the province's construction labour force, although the number of people from Asia has increased, while the number of Europeans has been on the decline.⁸ The province is expected to welcome 333,650 new international migrants between 2022 and 2027. As these individuals will make up an increasing share of the province's core working-age population, additional recruitment efforts will be required to ensure the construction industry continues to recruit its share of newcomers into the labour force.

CONCLUSIONS AND IMPLICATIONS

British Columbia's construction market rebounded in 2021 following a COVID-induced pause in 2020. Both residential and non-residential demands are poised to increase in 2022, with elevated levels of employment and recruiting challenges.

Residential construction continues to recover through 2022, propelled by a surge in 2021 housing starts (+24%). New-home construction remains elevated to 2023 and then slows across the remainder of the forecast period. Employment is projected to increase by 5% in 2022 and be sustained into 2023 before receding over the remainder of the period, as the decline in new-home construction is only partially offset by the steady growth in renovation and maintenance work. Across the full 2022–2027 forecast period, these competing trends lead to an employment decline of approximately 2,000 workers in the residential construction industry.

Growth in non-residential construction continues to be driven by a long list of major heavy industrial, public transit, education, health care, highway, and bridge projects, as well as an anticipated recovery in commercial building construction. As project demands increase, employment rises to an estimated peak in 2024 (+5% from 2021 levels) before slowing slightly over the remainder of the forecast period as current major projects wind down. By 2027, employment is up by just over 1,600 workers (+2%) compared to 2021 levels.

Adding to industry challenges is an aging workforce and the expected retirement of more than 25,000 workers over the six-year forecast period to 2027, or 13% of the current labour force.

Meeting labour force demand requirements will require a combination of industry strategies that include increased local recruitment and training, attracting newcomers to the industry, recruiting workers displaced from other industries, and, during periods of peak demands, bringing in construction workers from other 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 to these assumptions present risks and potentially alter anticipated labour market conditions.

⁵ Statistics Canada. Table 14-10-0364-01 Labour force characteristics by province, region, and Indigenous group

⁶ Statistics Canada. Table 14-10-0366-01 Employment by Indigenous group and occupation

⁷ Statistics Canada, Labour Force Survey 2018, custom data request

⁸ Ibid

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