BUILDFORCE CANADA

CONSTRUCTION & MAINTENANCE LOOKING FORWARD

AB

ALBERTA

HIGHLIGHTS 2023–2032

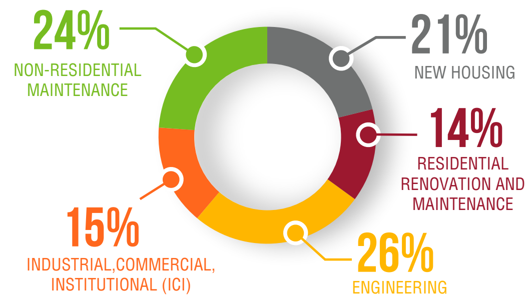
Alberta's construction sector was supported by growth in the residential and non-residential sectors in 2022. A strong rise in new-housing construction, ongoing major projects, and a recovery in oil and gas prices contributed to a rebound in construction market demands.

The 2023–2032 BuildForce Canada outlook anticipates that overall construction employment will remain unchanged in 2023. Thereafter the segments take different turns. Residential-sector investment, and therefore employment, drops continuously through 2032 compared to elevated 2022 levels. Although renovation investment trends up through the forecast period, it does not increase by nearly enough to offset losses in new housing. Residential employment is anticipated to contract by 6,300 workers (-10%), with all of those contractions recorded in new-housing employment (-7,000 workers).

Non-residential employment, meanwhile, is expected to rise to a peak of just under 117,000 by 2030. Gains will be driven by ongoing major road and highway, health, education, commercial, industrial, and public-transportation projects, as well as growth in the oil and gas sector. Employment increases by more than 1,800 workers across the forecast period (+2% over 2022 levels).

Alberta's construction labour force is expected to increase by 4,900 workers over the forecast period. Combined with the projected retirement of 38,200 workers, the industry will need to recruit and train 43,100 additional workers.

DISTRIBUTION OF CONSTRUCTION EMPLOYMENT IN 2022, ALBERTA



10-YEAR WORKFORCE OUTLOOK FOR ALBERTA

JOB AVERAGE UNEMPLOYMENT RATE **8.7%**

HIGHLIGHTS

- Total construction employment is expected to contract by 4,400 workers across the forecast period, with losses concentrated in the residential sector, and in new-home construction, in particular.
- Housing starts reached a new high of more than 37,000 units in 2022, but are expected to contract continuously across the forecast period.
- Industrial maintenance (turnaround and shutdowns) adds to labour demands, with spring and fall seasonal requirements and expected recruiting challenges for selected trades.
- The oil sands industry should resume adding to its productive stock by 2024, and increasing its sustaining investment accordingly.
- Commercial-sector activity should rise by more than 50% across the forecast period, if over the medium term both the proposed new Calgary Flames arena and the Calgary Arts Commons Transformation projects are approved.

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.

ALBERTA CONSTRUCTION OUTLOOK

Alberta's construction sector showed further signs of a post-pandemic recovery in 2022. Strong increases in both residential and non-residential investment helped to propel overall investment to 8% above 2021 levels. The recovery may be short-lived, however. New-housing investment is expected to contract in the current high interest-rate environment, and a brief decline is expected in non-residential investment as several key projects conclude.

After a large drop in GDP output in 2020, economic conditions in Alberta rebounded in 2021, driven by energy production and exports. Non-conventional producers reached record production levels, driven by strong demand in the United States. These, combined with strong levels of in-migration, bolstered consumer spending and residential investment. The recovery continued at a more modest pace in 2022. A projected global economic slowdown is expected to constrain growth further in 2023, weakening export demands and eroding consumer spending. Expected growth in production in the oil sector is anticipated to temper some of this increase. Across the forecast period, growth will settle at around 2% annually.

Alberta's overall recovery has supported growth in the housing market. At nearly 32,000 units, housing starts saw a strong recovery in 2021. They should reach well above 37,000 in 2022. This, coupled with continued growth in renovation activity, supported further growth in residential investment. Employment, as a result, added 1,340 workers (+2%) in 2022. The non-residential sector, meanwhile, added about 4,000 workers (+3%), supported by ongoing major projects and increases in industrial maintenance work.

The *2023–2032 Construction and Maintenance Looking Forward* outlook for Alberta anticipates overall construction employment to remain unchanged in 2023. Construction investment contracts into the medium term, as residential-sector investment drops continuously through 2031. Gains in non-residential investment through the forecast period mostly offset these losses. By 2032, construction employment contracts by 4,400 workers (-2.5%) over 2022 levels, with losses concentrated in residential construction.

Residential employment is forecast to contract by 6,300 workers (-10%), with all of those contractions recorded in new-housing employment (-7,000 workers). The renovation and maintenance segments add a combined 700 workers.

Non-residential employment is expected to rise to a peak of just under 117,000 workers by 2030, driven by gains in oil and gas investment and ongoing major road and highway, health, education, commercial, industrial, and public-transportation projects. By the end of the forecast period, the sector adds just over 1,800 workers (2% over 2022 levels), with gains reported in the oil and gas, and industrial, commercial, and institutional sectors.

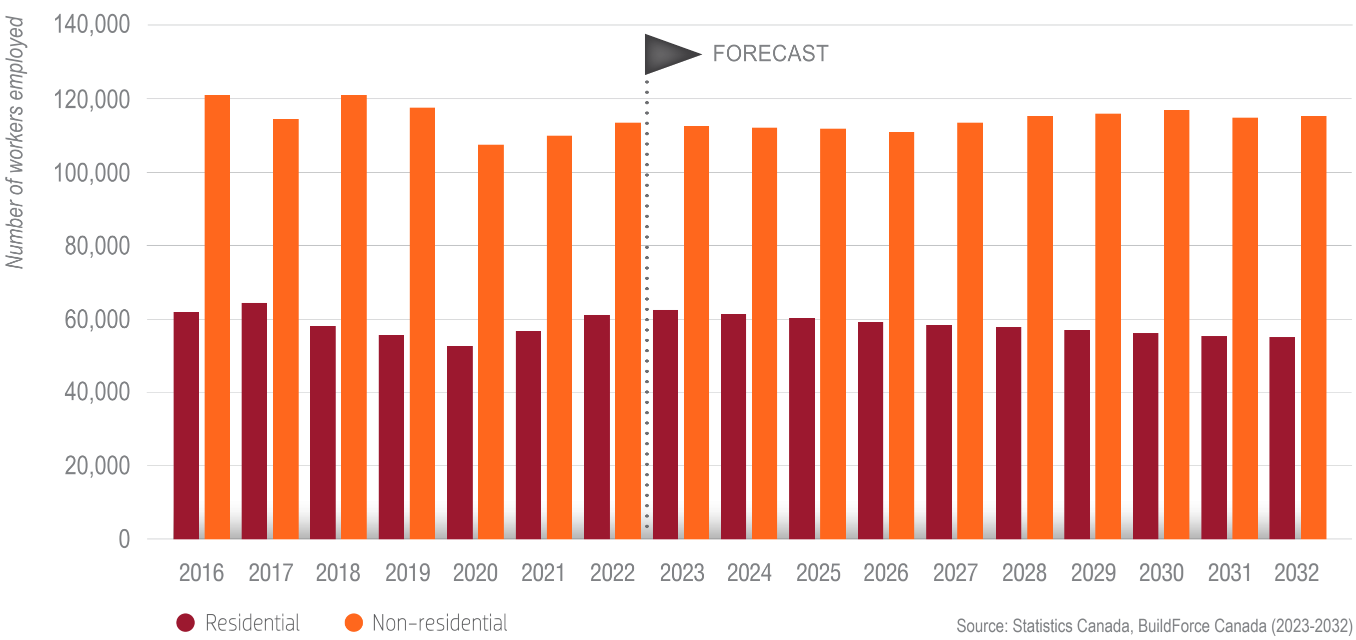
Figure 1 shows the anticipated change in residential and non-residential employment across the forecast period.

DEMOGRAPHICS: CANADA'S AGING POPULATION CREATES WORKFORCE CHALLENGES

Across the country, the share of the labour force aged 65 and over, who are mainly retired, has increased from 15% in 2012 to 19% in 2022. As Figure 2 shows, it is projected to grow again – to 22% – by 2032.

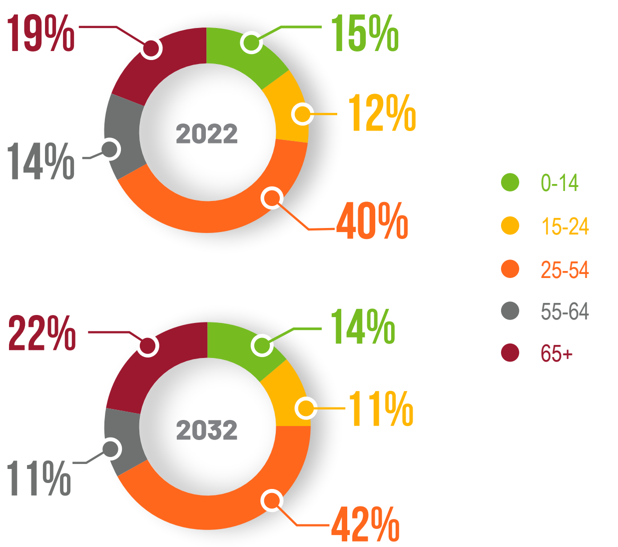
The labour force will be further challenged by a dwindling pool of youth. The group of people aged 15 to 24 years – i.e., people who are poised to enter the labour force – is shrinking as a percentage

Figure 1: Construction employment growth outlook, Alberta



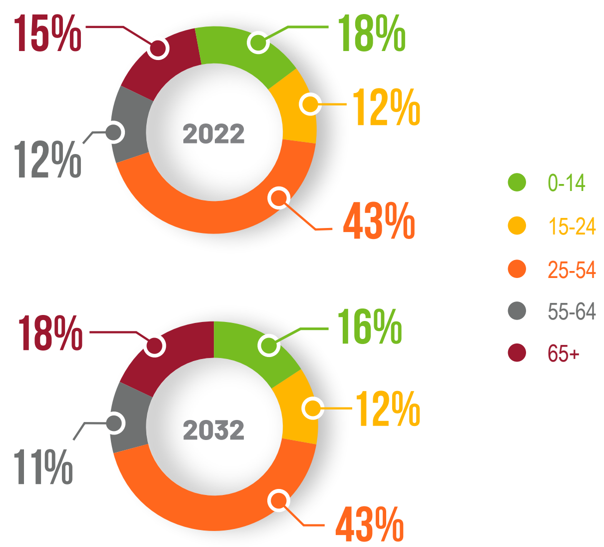
Source: Statistics Canada, BuildForce Canada (2023-2032)

Figure 2: Population age distribution, Canada



Source: BuildForce Canada

Figure 3: Population age distribution, Alberta



Source: BuildForce Canada

of the national population. This cohort was 13% in 2012, dropping to 12% in 2022, and is projected to fall to 11% by 2032.

These trends will create challenges for all industries, including construction, as it pertains to labour force recruitment.

There is good news, however. New federal immigration targets, announced in November 2022, call for the addition of 465,000 permanent residents in 2023, 485,000 in 2024, and a further 500,000 in 2025. These new targets should support further growth in the core working-age group of 25–54 years and may help moderate labour market pressures over the next decade. They will also require domestic industries to improve their recruitment of newcomers to supplement their traditional domestic recruitment programs.

IN-MIGRATION SUSTAINS POPULATION GROWTH

Alberta's demographics follow a similar trend. Figure 3 shows that youth aged 15 to 24 years comprised 12% of the province's population in 2022. That figure is expected to remain unchanged by 2032. Meanwhile, the proportion of those aged 65 and older, and who are mostly retired, is projected to grow from 15% to 18% over the same period.

Alberta is among only a handful of provinces that are showing positive natural rates of population growth[1]. Its population is younger than most, and births are exceeding deaths.

As was the case across most provinces, Alberta experienced a significant jump in immigration levels in 2022, adding more than 52,000 people. Population growth was further supported by the return of nearly 12,000 non-permanent residents, many in the form of students resuming in-person studies. Although it is unlikely Alberta will experience similar jumps in immigration in the remaining years of the forecast period, immigration levels are expected to remain at or around the 50,000-person mark through the medium term. This will be driven in part by revised federal immigration targets.

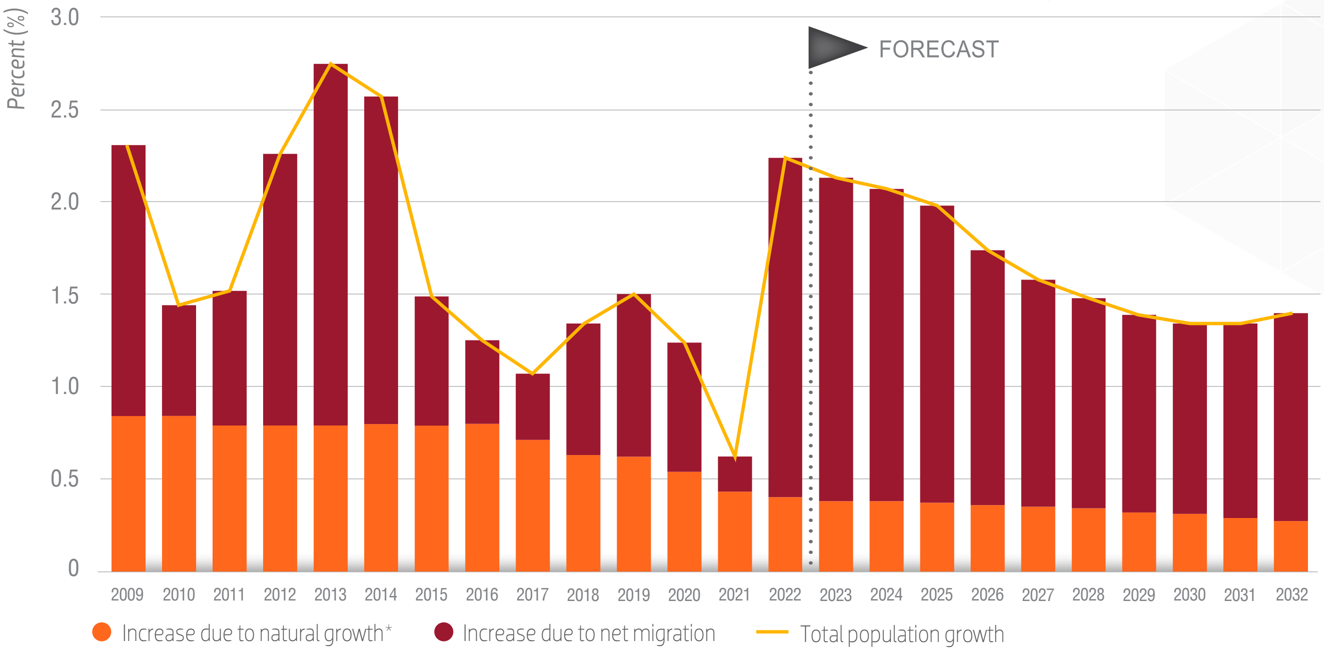
Although interprovincial migration has slowed population growth in recent years, it returned to a significant positive position in 2022 with the rebound in the economy and the general perception that Alberta offers a lower cost of living compared to other provinces. Figures will remain positive through the decade but will dissipate a bit from the current highs.

High levels of international migration, particularly among individuals in their prime working-age and child-bearing years, will help to sustain Alberta's natural rate of population growth above zero across the forecast period. Although at 0.27% by 2032, the rate will be half that seen as recently as 2020.

Alberta's overall population growth rate is expected to remain strongly positive (i.e., between 1% and 2%) throughout the forecast period, but will be driven almost entirely by high targets of in-migration from abroad.

[1] The **natural rate of population growth** refers to the growth in the population due to the number of births relative to the number of deaths, which leads to a positive or negative natural rate.

Figure 4: Sources of population growth (%), Alberta



* **Natural rate of population growth** refers to the growth in the population due to the number of births relative to the number of deaths, which leads to a positive or negative natural rate.

Source: Statistics Canada, BuildForce Canada (2023-2032)

Figure 4 shows the various factors affecting population growth in Alberta over the forecast period.

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 entrants[2], and net mobility[3].

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 Alberta, rankings are reported for 23 residential and 32 non-residential trades and occupations.

RESIDENTIAL SECTOR

After increasing in 2021 for the first time in several years, residential employment jumped again in 2022 – by a further 1,340 workers. The increase in employment was entirely

[2] **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.

[3] **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.

sustained by activity in the new-housing sector. Housing starts rose to above 37,000 units, supported by a combination of low lending rates and a surge of positive in-migration. Renovation expenditures increased only marginally – by 1%.

Housing starts are expected to recede from 2022's peak as lending rates rise and affordability challenges create some downward pressure across most of the forecast period. Renovation investment, meanwhile, will remain constant in the short term as people choose to upgrade their homes rather than investing in new housing.

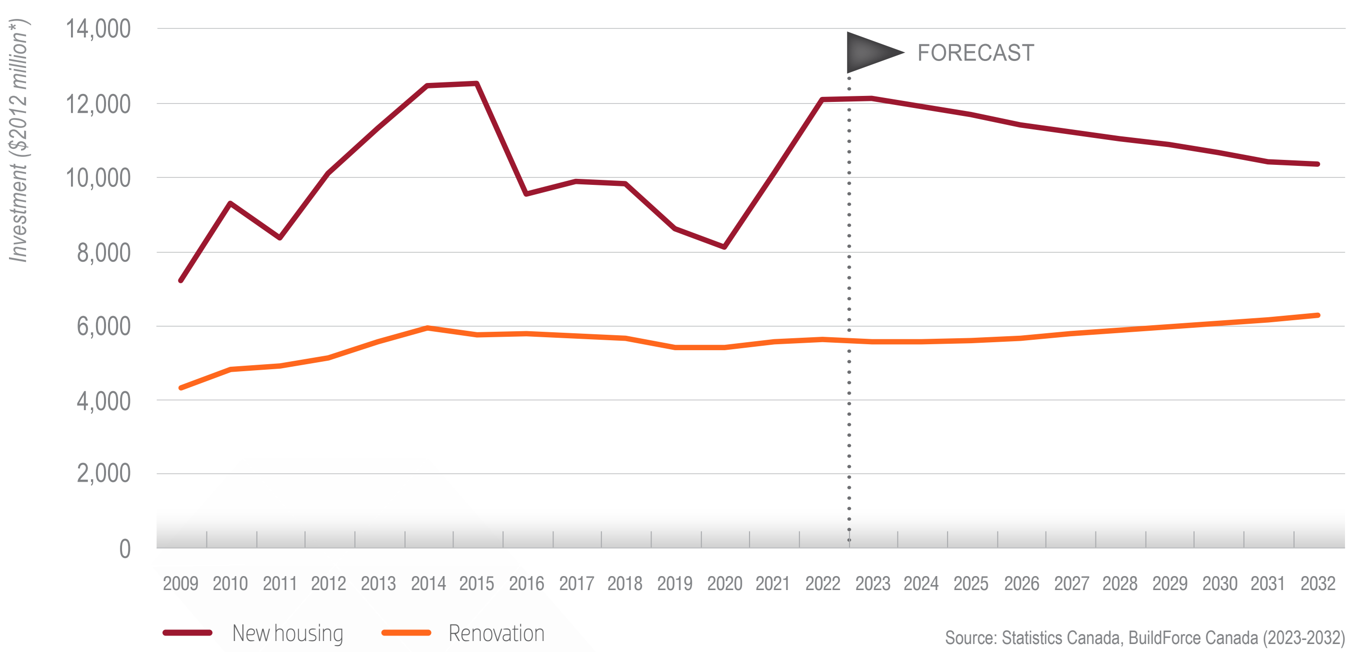
Total residential employment will peak in 2023 at more than 61,000 workers, with 62% of those employed in the new-housing sector. It is expected to contract by between 1% and 2% continuously through the remainder of the forecast period. New-housing employment, in particular, carries these contractions, with the sector shrinking by 900–1,000 workers per year through 2031 and losing nearly 7,000 (-19%) across the entire forecast period. Renovation employment, meanwhile, drops in 2023 and 2024, before recording an unbroken series of increases across the remainder of the forecast period. The sector adds 165 workers (+1%) by 2032. Residential maintenance work records a series of modest increases through 2032, adding 540 workers (+9%) over 2022 levels.

Total residential construction contracts by 2032, losing nearly 6,300 workers (-10%) compared to 2022 levels.

Note that federal efforts to double the number of new homes built across Canada over the next 10 years were not factored into this analysis.

Figure 5 shows the renovation and new-housing investment trends for residential construction.

Figure 5: Residential construction investment, Alberta



Source: Statistics Canada, BuildForce Canada (2023-2032)

* **$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.

RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

Table 1 shows tight labour market conditions in 2022, driven by new-housing construction and renovation demands, and complicated by a reduction in labour force participation.

Although new-housing demands are expected to ease into 2023, a backlog of work will keep construction demands elevated. An expected increase in renovation activity, driven by rising new-housing prices, will maintain short-term pressure on most trades. Markets are expected to balance into the medium term as demand for new housing moderates and starts begin to follow household formation[4] trends.

MARKET RANKINGS

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

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

Table 1: Residential market rankings, Alberta

TRADES AND OCCUPATIONS – RESIDENTIAL	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Bricklayers	4	3	3	3	3	3	3	3	3	3	3
Carpenters	4	4	3	3	3	3	3	3	3	3	3
Concrete finishers	4	3	3	3	3	3	3	3	3	3	3
Construction estimators	5	3	3	3	3	3	3	3	3	3	3
Construction managers	5	4	3	3	3	3	3	3	3	3	3
Contractors and supervisors	5	4	3	3	3	3	3	3	3	3	3
Electricians	4	3	3	3	3	3	3	3	3	3	3
Floor covering installers	4	3	3	3	3	3	3	3	3	3	3
Gas fitters	5	3	3	3	3	3	3	3	3	3	3
Glaziers	4	4	3	3	2	3	3	3	2	2	3
Heavy equipment operators (except crane)	4	4	3	3	3	3	3	3	3	3	3
Home building and renovation managers	4	4	3	3	3	3	3	3	3	3	3
Insulators	4	3	3	3	3	3	3	3	3	3	3
Painters and decorators (except interior decorators)	4	3	3	3	3	3	3	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	4	3	3	3	3	3	3	3	3	3	3
Plumbers	4	3	3	3	3	3	3	3	3	3	3
Refrigeration and air conditioning mechanics	5	4	3	3	3	3	3	3	3	3	3
Residential and commercial installers and servicers	4	3	3	3	3	3	3	3	3	3	3
Roofers and shinglers	4	3	3	3	3	3	3	3	3	3	3
Sheet metal workers	5	3	3	3	3	3	3	3	3	3	3
Tilesetters	5	4	3	3	3	3	3	3	3	3	3
Trades helpers and labourers	4	4	3	3	3	3	3	3	3	3	3
Truck drivers	4	4	3	3	3	3	3	3	3	3	3

Source: BuildForce Canada

NON-RESIDENTIAL SECTOR

Non-residential construction requirements in Alberta increased by nearly 3,800 workers in 2022, due in part to significant gains in industrial maintenance work. Employment slows moderately through 2026, in line with the timing of major projects. Later years show a gradual rise in employment that is driven by institutional and commercial investment, phase 2 of the Dow Chemical expansion, the proposed and as yet unapproved Calgary Flames arena, and other infrastructure projects.

A return to growth in oil sands investment figures prominently into the medium-term forecast years. After years of declining capital investment, new oil and gas capital experienced a slight bump in 2021 due to additional diversification investments and a rise in industrial maintenance work. That rise continued in 2022 and should maintain an upward trend through 2025.

The outlook for the remainder of the non-residential sector is mainly unchanged across the forecast period. A slight drop in investment in the short term is followed by gradual, but sustained, increases through the medium- and long-term years of the forecast period.

Engineering-construction investment increased in 2022 in line with higher oil and gas investment, electric-power generation facilities, pipeline developments, and large investments in light rail transit projects in Calgary and Edmonton. It will then begin a moderate decline through 2025 as it is drawn down with the completion of several major projects, including the Trans Mountain Expansion Project, the Telus communications network, and projects procured under the province's infrastructure budget. As these wind down, a general up-cycle begins as the broader economy and stronger oil and gas demands drive investment levels higher.

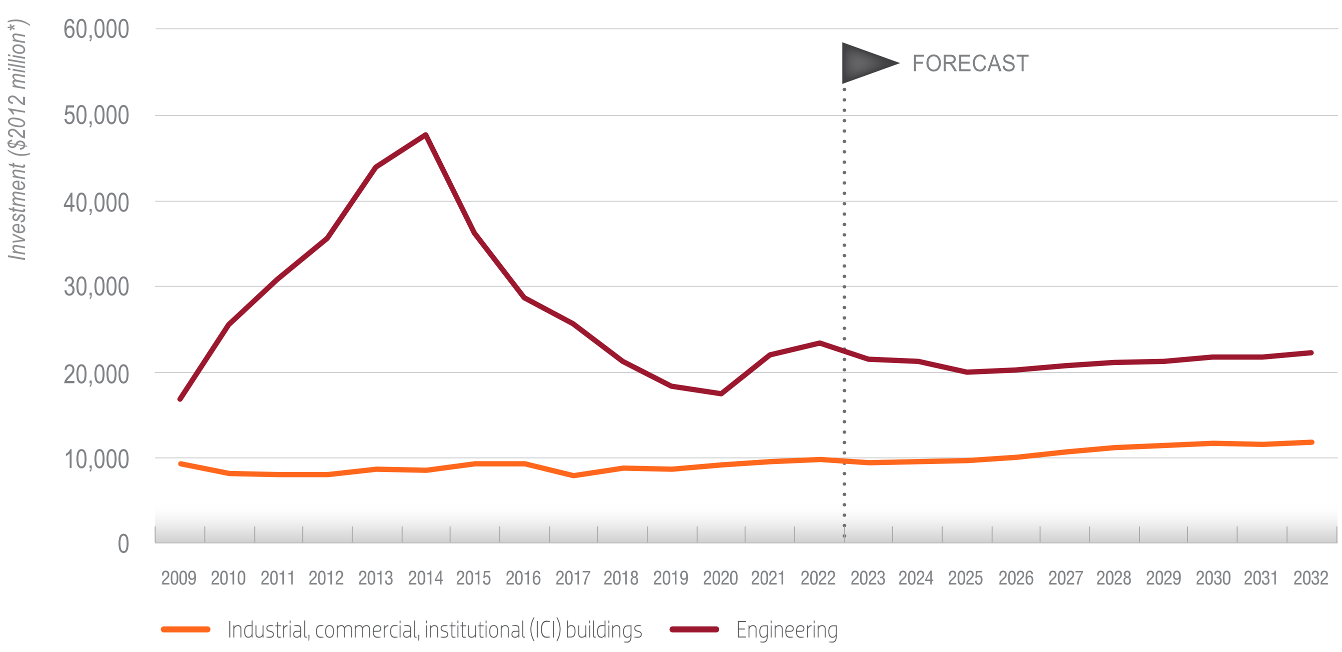
Investment in the industrial, commercial, and institutional (ICI) sector, meanwhile, is looking at a similar downward trend into 2023, with overall investment weighed down by falling public-infrastructure investment on educational and health projects. Investment cycles back up into 2024 and for most of the remainder of the forecast period, particularly in the commercial sector, where an upward trend is supported by major projects like the proposed new Calgary Flames arena and the Calgary Arts Commons Transformation.

Growth in the industrial and institutional sectors is more muted over the forecast period, with the former supported by work on key projects like the Air Products net-zero hydrogen complex and Dow Chemical's Path2Zero expansions.

Figure 6 shows the projected outlook for ICI and engineering-construction investment.

Non-residential employment requirements follow the expected timing of major projects over the forecast period, adding 1,800 workers by 2032 – a 2% rise over 2022 levels. Driving this increase will be significant growth in ICI-sector (+2,700 workers; +10%) and oil-sands employment (+1,900 workers; +21%). These combine to more than offset a loss of 3,000 workers in the maintenance sector. Engineering-construction employment is largely unchanged across the forecast period.

Figure 6: Non-residential construction investment, Alberta



* **$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.

Source: Statistics Canada, BuildForce Canada (2023-2032)

Table 2 summarizes the estimated percent change in non-residential employment by sector across three periods: the short term (2023–2025), the medium term (2026–2028), and the long term (2029–2032).

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

SECTOR		% CHANGE 2023–2025	% CHANGE 2026–2028	% CHANGE 2029–2032
Total non-residential employment		-1%	3%	0%
ICI* buildings	Industrial	-4%	1%	-3%
	Commercial, institutional and government	-2%	16%	2%
Engineering	Highways and bridges	-9%	5%	7%
	Heavy industrial	23%	7%	1%
	Other engineering	-19%	4%	-7%
Maintenance		-2%	-6%	1%

Source: Statistics Canada, BuildForce Canada (2023-2032)

* industrial, commercial, institutional

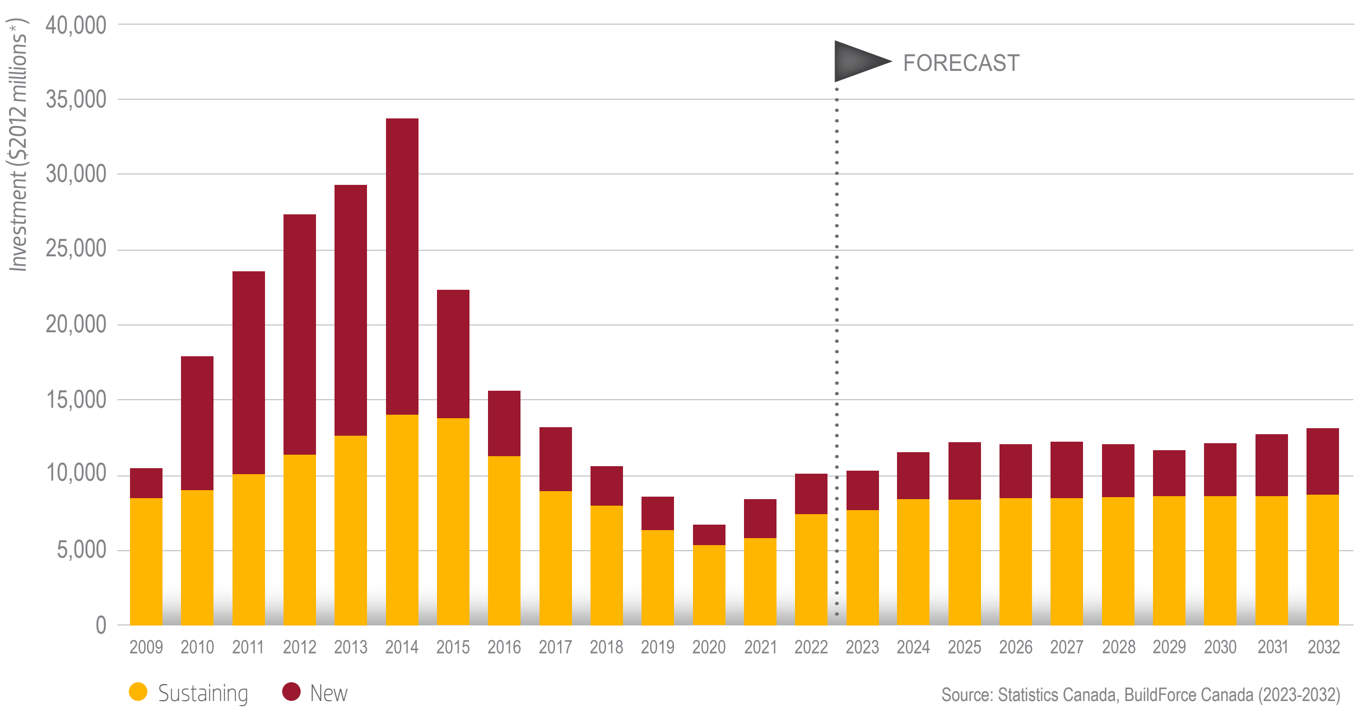
OIL SANDS CONSTRUCTION

In 2020, reductions in overall capital budgets created conditions where sustaining capital investment levels were insufficient to fully maintain the existing productive stock of capital, resulting in net capital deformation in the non-conventional oil production sector. Sustaining capital investment increased in 2021 and accounted for most of the investment in the sector. As productive capacity is reabsorbed with rising demand in the short term, sustaining capital levels are anticipated to recover and grow in line with an increasing stock of new capital investments throughout the forecast period.

While new investment remained low by historical standards in 2021 and 2022, Figure 7 shows an expected recovery between 2024 and 2027 that will add new capacity later in the forecast period. Stronger demand for Canadian oil, related to the ongoing war in Ukraine, should erode any excess capacity that currently exists, which could lead to higher levels of new investment. Concerns, however, over the transition away from fossil fuels should moderate investment flows.

Unique to the oil sands sector is the volatility of shutdown/turnaround maintenance work, which, depending on the number and types of projects scheduled, can generate significant market challenges, driven by distinct seasonal peak demands within a year for periods of weeks or months. Major shutdown/turnaround maintenance requirements in 2023 and beyond will be a key driver of industry labour demands, with the largest requirements

Figure 7: Alberta oil sands investment – construction, machinery, and equipment (millions of 2012 dollars*)



Source: Statistics Canada, BuildForce Canada (2023-2032)

* **$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.

Note: investment displayed in this chart includes the value of machinery and equipment.

concentrated during spring and fall peak periods. Demand requires workers with industrial experience and specialized skills within a trade or occupation, including:

- boilermakers
- bricklayers (refractory)
- carpenters (industrial scaffolders)
- crane operators (all terrain)
- insulators
- ironworkers
- millwrights (industrial)
- pipefitters
- supervisors
- welders (alloy)

Out-of-province workers will be required to meet anticipated peak maintenance demands, but recruiting challenges are expected to emerge. Alberta will compete for highly specialized workers with other provinces, particularly Ontario and British Columbia, in which scheduled major capital projects peak over the near term, as well as major industrial maintenance work in other regions.

NON-RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

Table 3 shows that market conditions were strained across nearly every trade and occupation in 2022, with most achieving rankings of "4," and some rising to "5." Offsetting currents appear in 2023 as some major projects end, while work continues at Air Products' net-zero hydrogen complex and work begins on Dow Chemical's Path2Zero expansion.

Although there is a wind down of road, highway, and utility projects in 2024, ongoing public-transit work and the Air Products and Dow Chemicals projects help to support employment and tighten markets for some trades before returning to mostly balanced markets thereafter.

The widespread conversion of ICI buildings to the greater use of electricity for heating and cooling is excluded from this report, as these efforts are still in their early phases and have had only minor impacts on overall construction labour markets. As these efforts accelerate, they will be added to future BuildForce Canada outlook reports.

Table 3: Non-residential market rankings, Alberta

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Boilermakers	5	4	3	3	3	3	3	3	3	3	3
Bricklayers	4	4	3	3	3	3	3	3	3	3	3
Carpenters	4	3	3	3	3	3	3	3	3	3	3
Concrete finishers	4	4	3	3	3	3	3	3	3	3	3
Construction estimators	4	4	4	3	3	3	3	3	3	3	3
Construction managers	4	4	4	3	4	4	3	3	3	3	3
Construction millwrights and industrial mechanics	4	3	3	3	3	3	3	3	3	3	3
Contractors and supervisors	4	3	3	3	3	3	3	3	3	3	3
Crane operators	5	4	4	3	3	3	3	3	3	3	3
Drillers and blasters	3	4	4	3	3	4	3	3	3	3	3
Electrical power line and cable workers	3	5	4	3	3	4	3	3	3	3	3
Electricians	4	3	3	3	3	3	3	3	3	3	3
Elevator constructors and mechanics	4	3	3	3	3	3	3	3	3	3	3
Floor covering installers	4	3	3	3	3	3	3	3	3	3	3
Glaziers	4	3	3	3	3	3	3	3	3	3	3
Heavy equipment operators (except crane)	4	4	3	3	3	2	3	3	3	2	3
Heavy-duty equipment mechanics	4	4	4	3	3	3	3	3	3	3	3
Industrial instrument technicians and mechanics	4	3	3	3	2	3	3	3	3	3	3
Insulators	4	4	3	3	2	3	3	3	3	3	3

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

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Ironworkers and structural metal fabricators	4	3	3	3	3	3	3	3	3	2	3
Painters and decorators (except interior decorators)	4	3	3	3	3	3	3	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	4	3	2	3	3	3	3	3	3	3	3
Plumbers	4	3	4	3	3	3	3	3	3	3	3
Refrigeration and air conditioning mechanics	4	3	3	3	3	3	3	3	3	3	3
Residential and commercial installers and servicers	4	3	3	3	3	3	3	3	3	3	3
Roofers and shinglers	3	4	3	3	3	3	3	3	3	3	3
Sheet metal workers	3	4	4	3	3	3	3	3	3	3	3
Steamfitters, pipefitters and sprinkler system installers	5	4	4	3	2	3	3	3	3	3	3
Tilesetters	4	3	3	3	3	3	3	3	3	3	3
Trades helpers and labourers	4	4	3	2	2	3	3	3	3	3	3
Truck drivers	4	3	3	3	3	3	3	3	3	3	3
Welders and related machine operators	4	3	3	3	3	3	3	3	3	3	3

Source: BuildForce Canada

BUILDING A SUSTAINABLE LABOUR FORCE

THE AVAILABLE LABOUR FORCE

The contraction of Alberta's construction market from the highs reached in 2014 led many workers to leave the industry or the province. The loss of workers accelerated in 2020 due to the impacts of COVID-19, as well as instability in oil and gas markets in the early part of the year. The provincial construction labour force declined by almost 6% between 2019 and 2022, contributing to lower rates of unemployment, which fell to around 5% in 2022.

Data shows that the decline was more concentrated in the core working-age group of 25–55 year olds. It is anticipated that some – but not all – of these workers will re-enter the labour force, but the loss of experienced workers, should they be slow to return or decide to retire, could have a lasting impact. Their skills cannot be readily replaced with inexperienced workers. Recruiting challenges are likely to build in 2023, requiring a renewed focus on recruitment and training.

Alberta is expected to experience strong population growth over the coming decade, due largely to the younger population and attractiveness as a destination for newcomers to Canada. Despite its relatively young population, however, Alberta's construction industry will need to replace an estimated 38,200 workers, or 21% of the current labour force, who are expected to retire by 2032.

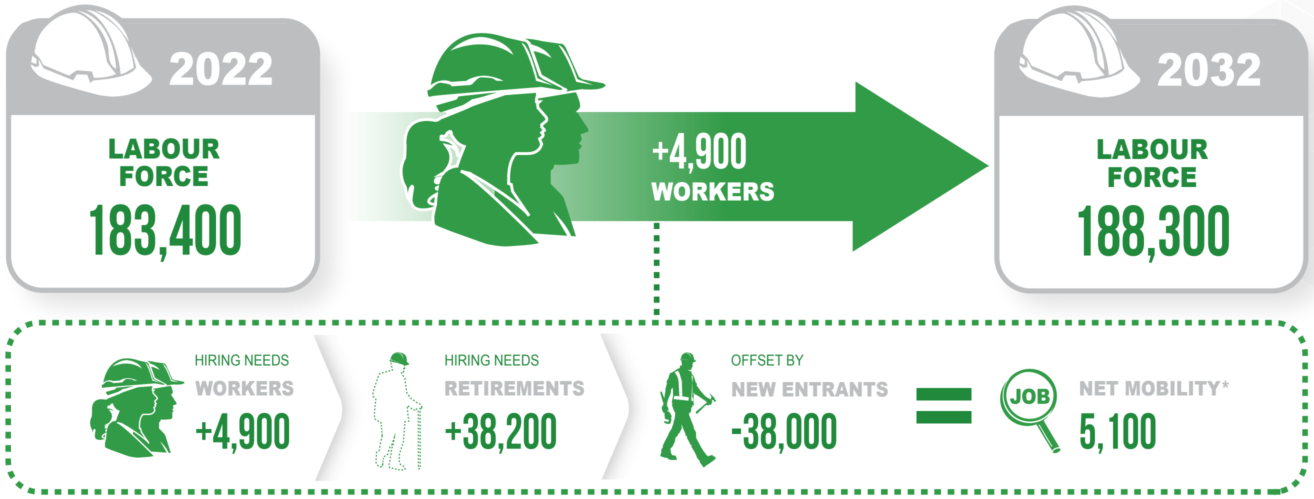
Figure 8 provides a summary of the estimated changes in the construction labour force across the forecast period.

LABOUR FORCE DIVERSIFICATION

APPRENTICESHIP

Apprenticeship is a key source of labour for the construction industry. New registrations in Alberta's 25 largest trade programs decreased by 57% from 2014 to 2019; a significant decline compared to construction employment, which only saw a 19% decline over the same period. Following the trend in new registrations, completions were also trending down leading into 2020, albeit at a slower pace (see Figure 9). New registrations have been declining at a faster rate than trade employment, which poses the risk for an insufficient number of newly certified journeypersons to sustain workforce requirements over the long term. Selected trades, namely Boilermaker, Heavy-Duty Equipment Technician, Ironworker (reinforcing), Refrigeration and Air Conditioning Mechanic, Sheet Metal Worker, and Sprinkler Fitter, have seen an increase in new registrations over the past decade.

Figure 8: Changes in the construction labour force, Alberta

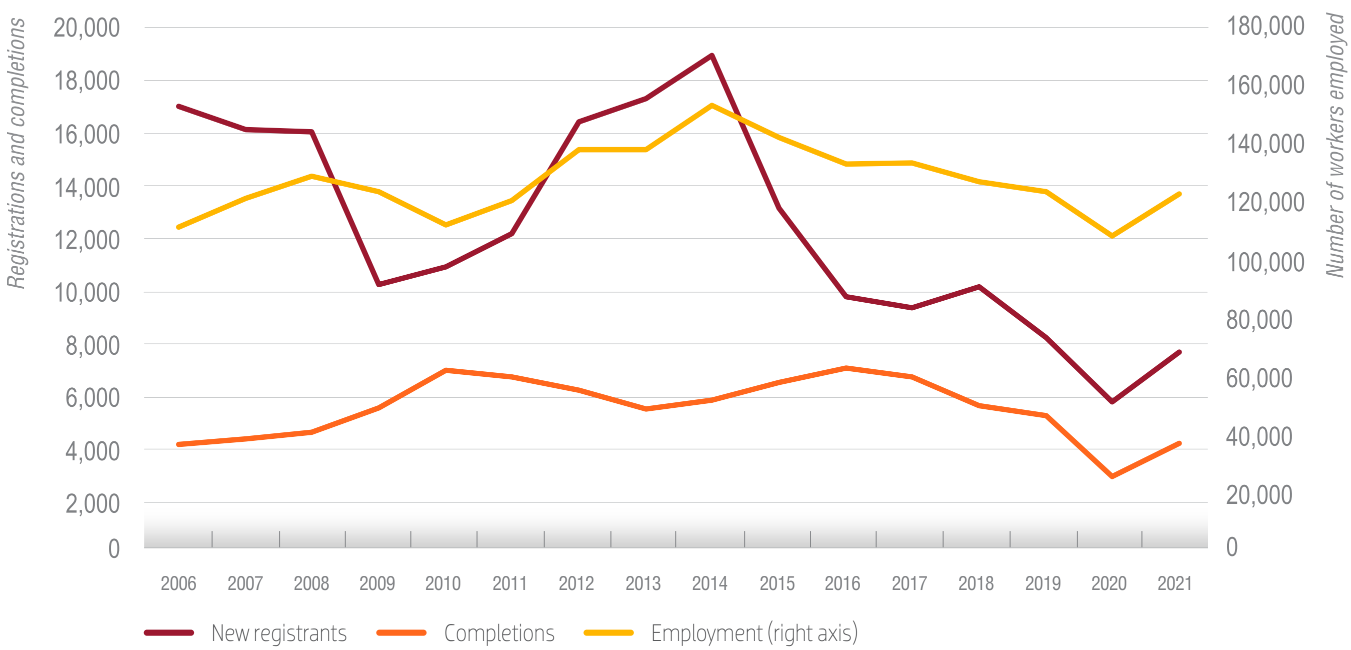


* **Net mobility** refers to the number of workers needed to be brought into the industry from other industries or other provinces to meet rising demands or the number of workers that exit the industry in downturns. Positive net mobility means that industry must attract workers, while negative net mobility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

Figure 9: New apprenticeship registrations, completions, and trade employment, Alberta



Source: BuildForce Canada

Table 4 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. Based on projected new registrations, several trades are at risk of undersupplying the number of new journeypersons required by 2032. Trades within this group include Welder, Carpenter, Bricklayer, Powerline Technician, Roofer, Insulator (heat and frost), Construction Electrician, Industrial Instrumentation Technician, Industrial Mechanic, Glazier, Boilermaker, Hoist Operator (boom truck), Sheet Metal Worker, Heavy-Duty Equipment Technician, and Hoist Operator (wellhead).

UNDER-REPRESENTED 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 demographic shift, the construction industry must diversify its recruitment. In order to succeed, the industry must increase

Table 4: Estimated construction certification demand and projected target of new entrants by trade, Alberta, 2023 to 2032

Trade	Total certification demand – construction	Target new registrants – construction	Apprentice certification supply risk – all industries
Welder	1,563	4,567	● (red)
Carpenter	6,015	22,106	● (red)
Bricklayer	299	740	● (red)
Powerline Technician	542	962	● (red)
Roofer	308	955	● (red)
Insulator (heat and frost)	593	2,497	● (red)
Construction Electrician	9,194	22,540	● (red)
Industrial Instrumentation and Control Technician	190	532	● (red)
Industrial Mechanic (Millwright)	307	635	● (red)
Glazier	217	556	● (red)
Boilermaker	565	2,237	● (red)
Hoist Operator (boom truck)	208	724	● (red)
Sheet Metal Worker	726	2,322	● (red)
Heavy-Duty Equipment Technician (off road)	808	1,925	● (red)
Hoist Operator (wellhead)	240	639	● (red)
Hoist Operator (tower crane)	29	87	● (yellow)
Gas Fitter	86	215	● (yellow)
Steamfitter/Pipefitter	612	4,382	● (yellow)
Ironworker (reinforcing)	82	998	● (green)
Ironworker (structural/ornamental)	63	449	● (green)
Mobile Crane Operator	175	385	● (green)
Plumber	1,890	4,178	● (green)
Refrigeration and Air Conditioning Mechanic	450	912	● (green)
Heavy-Duty Equipment Technician (off road)	77	111	● (green)
Sprinkler System Installer	35	109	● (green)

● (red) Certifications required exceed projected completions
● (yellow) Certifications required in line with projected completions
● (green) Projected completions exceed certifications required

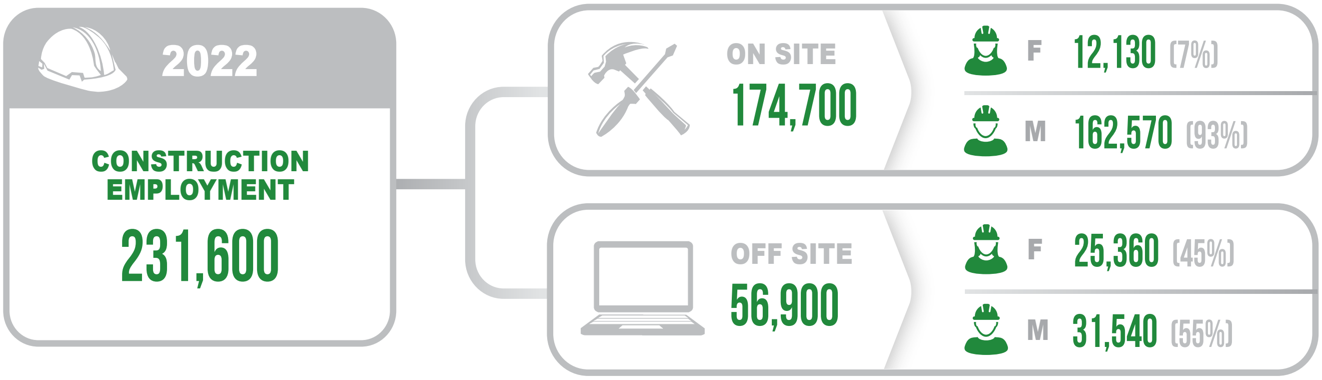
Source: BuildForce Canada

recruitment of individuals from groups traditionally under-represented in the current construction labour force, including women, Indigenous People, and newcomers.

In 2022, there were approximately 37,490 women employed in Alberta'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 174,700 tradespeople employed in the industry, women made up 7% (see Figure 10).

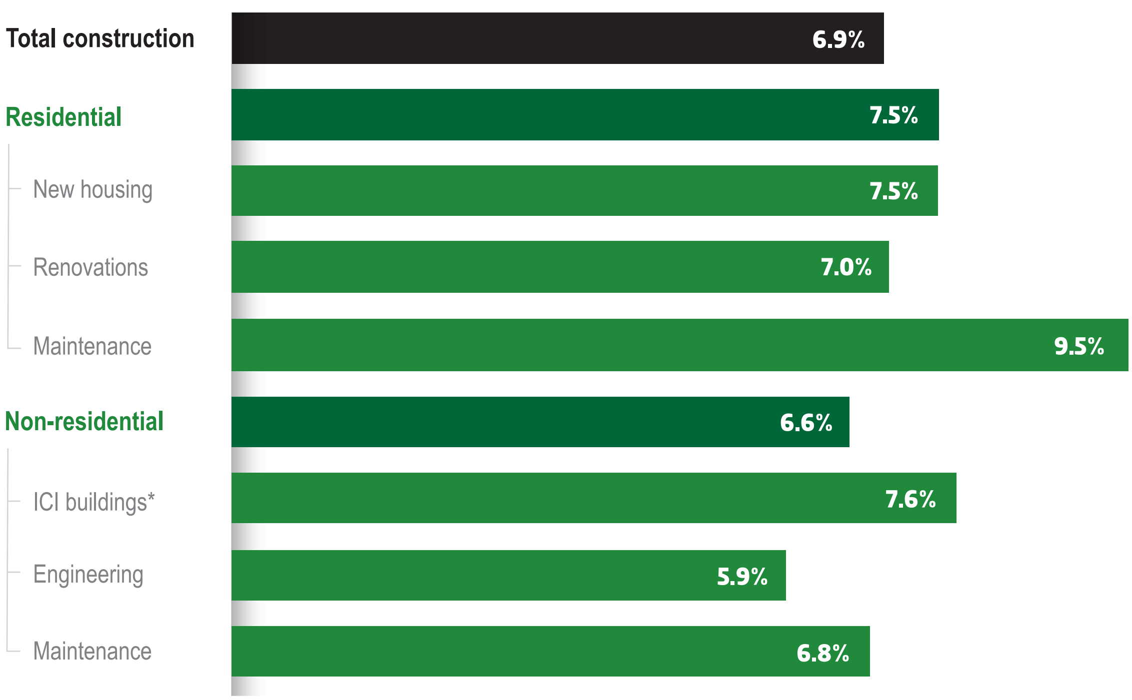
The estimated 12,130 tradeswomen in Alberta are represented across all sectors of construction, but given the nature of construction work in the province, women account for a higher share of total tradespeople (7.5%) in residential construction. Across sectors, residential maintenance construction has the highest representation of women, accounting for 9.5% of the workforce (see Figure 11). The top five trades and occupations in which women tend to be employed are trade helpers and labourers (18% of all tradeswomen), painters and decorators (16%), construction managers (9%), electricians (8%), and carpenters (6%).

Figure 10: Detailed construction employment by gender, Alberta, 2022



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

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



* industrial, commercial, institutional

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

The Indigenous population is the fastest growing population in Canada and therefore presents recruitment opportunities for Alberta's construction industry. The province has been successful in increasing the share of Indigenous People in the construction workforce. In 2021, Indigenous workers accounted for 6.7% of the province's construction labour force, which is a slight increase from the share of 6.5% observed in 2016.[5] This share is notably higher than the share of Indigenous People represented in the overall labour force (see Table 5). As the Indigenous population continues to expand, recruitment efforts will need to be dedicated to increasing the industry's share of the population into the labour force.

Alberta's construction industry may also leverage newcomers (immigrants) to Canada over the forecast period to meet labour requirements. Due to the declining natural rate of population growth, immigrants are the sole source of labour force growth in the province.

Immigrants have been playing an increasingly important role in replenishing the workforce, with the share of immigrants in the workforce increasing from 19% in 2011 to 26% in 2021. The province has been successful in attracting and integrating immigrants into the labour force; however, immigrants remain under-represented in the construction industry. The construction labour force share of immigrants was 19% in 2021, which is notably lower than the share in the overall provincial labour force. (See Figure 12).

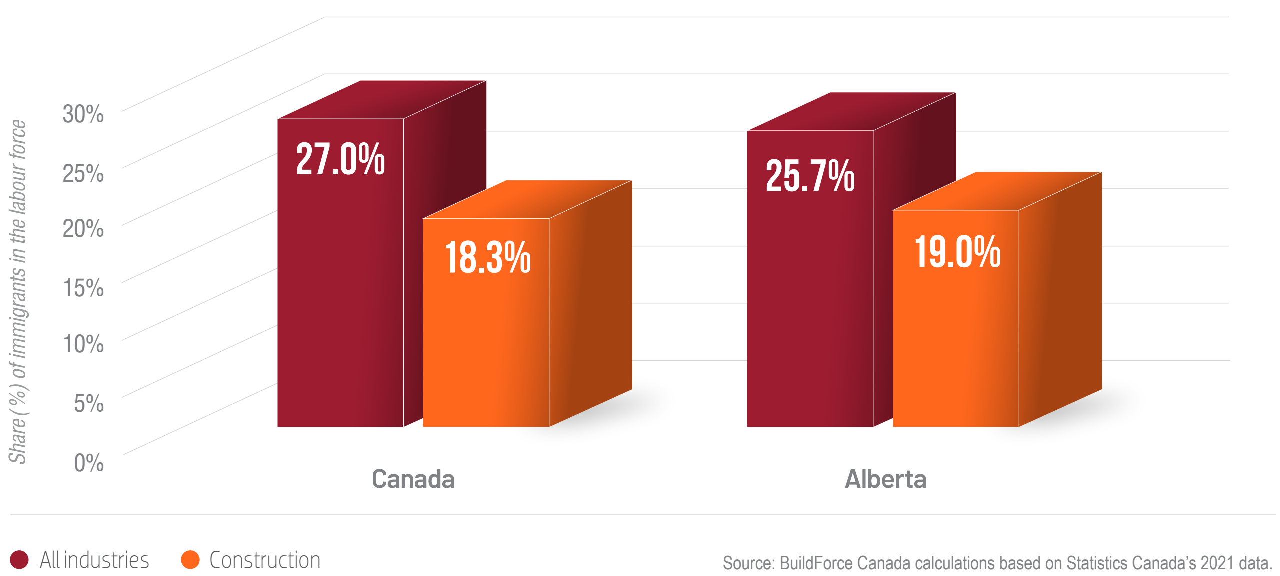
Based on historical settlement trends, the province is expected to welcome 639,580 new international migrants between 2023 and 2032. As these individuals will make up an increasing share of the province's core working-age population, additional recruitment efforts will be required to ensure the construction industry recruits its share of newcomers into the labour force.

Table 5: Representation of Indigenous population in provincial construction workforce, Alberta

Industry		Indigenous	Non-Indigenous	Total	Indigenous share of total workforce, %
Construction	2016	15,480	220,890	236,370	6.5%
	2021	14,065	196,295	210,355	6.7%
All industries	2016	114,535	2,148,400	2,262,935	5.1%
	2021	120,475	2,104,450	2,224,920	5.4%

Source: BuildForce Canada calculations based on Statistics Canada's 2021 and 2016 Census of the Population

Figure 12: Share (%) of immigrants in the construction labour force, 2021



Source: BuildForce Canada calculations based on Statistics Canada's 2021 data.

[5] Statistics Canada, 2021 Census, custom data request

CONCLUSIONS AND IMPLICATIONS

Alberta's construction industry enjoyed another strong year in 2022. Growth in its residential and non-residential sectors helped to propel overall investment to 8% above 2021 levels. The recovery is unlikely to be sustained, however, as new-housing investment is expected to be curtailed by rising interest rates, and the non-residential sector slows as several major projects conclude.

Employment in Alberta's residential sector is expected to peak in 2023, with more than 62% of its workforce engaged in the new-housing sector. Thereafter, contractions of between 1% and 2% annually are routine. New-housing employment over the forecast period should decline by nearly 7,000 workers, while renovation employment rises modestly.

The non-residential sector was supported by petrochemical, electric-power generation, pipeline, transit, and roadwork projects, as well as gains in industrial maintenance work in 2022. Although that sector remains strong again in 2023, overall employment recedes modestly through 2026, following the timing of major-project requirements.

In 2023, scheduled heavy-industrial maintenance (turnaround and shutdowns) work will again be a key driver of market challenges, with significant seasonal demands concentrated in the spring and fall, with high demands for selected trades and occupations, including boilermakers, pipefitters, all-terrain crane operators, scaffolders, and specialized welders.

While modest growth is projected over the forecast period, the industry must remain focused on an aging workforce and the expected retirement of an estimated 38,200 workers, or 21% of the current labour force, which represents a significant loss of skilled experienced workers.

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 anticipated labour market conditions reflect the current long-term oil price outlook and industry capital investment assumptions. Any changes to these assumptions present risks and potentially alter anticipated labour market conditions.

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.

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BUILDFORCE® CANADA

Phone: 613.569.5552 | info@buildforce.ca

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