



ALBERTA

COVID-19 pandemic a major setback for elusive recovery

Alberta was among the provinces hardest hit by the impacts of the COVID-19 pandemic, with economic losses compounded by large investment declines in the oil and gas sector. Persistent uncertainty in the energy sector and further deferrals and cancellations of major investments have significantly tempered expectations for a strong near-term recovery. A more material expansion is expected to take hold after 2023, driven by increased pipeline export capacity and moderate population growth.

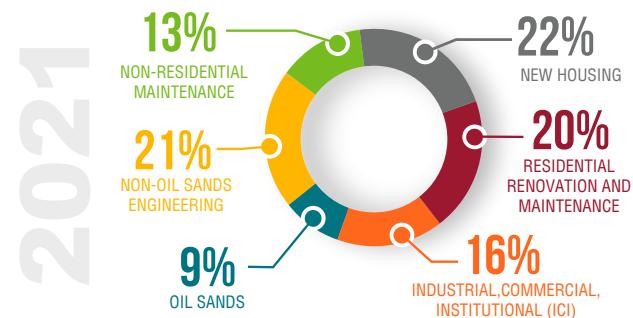
The 2021–2030 outlook scenario for Alberta shows that health care, education services, pipeline, petrochemical, transit, and other infrastructure projects help to sustain construction employment through to 2023. Stronger but moderate growth is expected to follow, driven by an anticipated increase in oil and gas investment with the expansion of the Trans Mountain Pipeline and other pipeline projects, as well as an up-cycle in new-housing construction. The expansion is expected to drive total construction employment higher by 19,100 workers (+11%) between 2023 and 2026.

Although average annual non-residential requirements are relatively stable over the near term, significant fluctuations in oil sands maintenance and shutdown requirements are anticipated to continue posing periodic recruitment challenges for workers and some trades who have specialized skills and experience.

Alberta's construction and maintenance industry will need to recruit and retain an estimated 40,400 workers, or 21% of the 2020 construction trades labour force, expected to retire.

HIGHLIGHTS 2021–2030

DISTRIBUTION OF CONSTRUCTION EMPLOYMENT IN 2021, ALBERTA



10-YEAR WORKFORCE OUTLOOK FOR ALBERTA

2030



HIGHLIGHTS

- Total construction employment is expected to increase by more than 19,100 workers (+11%) by 2030 compared to 2020.
- Housing starts peak near 30,500 units in 2027 after falling to a record low 24,000 units in 2020 – down 12% compared to 27,300 units in 2019.
- Over the coming decade, sustaining capital investment accounts for almost two-thirds of total oil sands investment. Major shutdown/turnaround maintenance work will remain a key driver of industry labour demands.
- The expected retirement of 40,400 workers contributes to the need to recruit 55,810 workers over the scenario period.

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

Recovery in Alberta's construction market took a step back in 2020, derailed by a sharp pullback in oil and gas prices and investment due to COVID-19 early in the year, as well as declines in new housing, and commercial and industrial investment. Declines were partly offset by higher levels of residential renovation investment and increased provincial government capital spending on education, health care, and road, highway, and bridge projects.

A modest recovery is expected in 2021, supported by non-residential education, health care, pipeline, public transportation, and other infrastructure projects, and an uptick in residential renovation work. The near-term outlook, between 2021 and 2023, remains constrained by the cancellation of the Keystone XL Pipeline project and lower overall levels of investment in the energy sector. Declines in institutional building investment through to 2023 are also expected with the wind down of existing planned projects. A more robust expansion is expected to follow the completion of the Trans Mountain Pipeline that should support a projected recovery in oil and gas investment. Although there are no specific new, major oil and gas projects in the outlook, increased pipeline capacity is expected to induce the oil sands investment required to sustain and increase long-term production.

Non-residential construction outside of the energy sector is sustained by the expected recovery in industrial building construction and major planned public transportation projects in both Calgary and Edmonton. Commercial building construction is expected to recover more slowly as the economy strengthens and elevated office vacancy rates recede.

Alberta is expected to experience strong population growth over the coming decade due largely to the younger population. A stronger economic climate and population growth are expected to support an up-cycle in housing starts after 2023, once the current inventory of housing is absorbed. Institutional building construction is also expected to rise in the latter half of the decade as the population increases, necessitating additional investments in infrastructure. Overall, construction employment is expected to rise by 19,100 workers – an 11% increase by 2030 – with the strongest growth concentrated between 2023 and 2026.

In addition to meeting moderate growth requirements, Alberta's construction industry will need to replace an estimated 40,400 workers expected to retire over the next decade, while transitioning to a more local construction labour force.

SECTOR INSIGHTS

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

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

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

The rankings for some trades are suppressed due to the small size of the workforce (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 24 residential and 32 non-residential trades and occupations.

RESIDENTIAL SECTOR

Residential construction requirements declined in 2020 due to a drop in housing starts, that were depressed by a weak job market, and a high inventory of unoccupied units, but overall residential construction was buttressed by a significant increase in renovation work. Housing starts fell to 24,000 units in 2020 – down 12% compared to 27,300 units in 2019. A modest recovery in new housing, driven by low interest rates, improved economic conditions, and moderate population growth, is expected to return starts to above 30,000 units by 2026. Renovation work trends up across the scenario period, driven by income growth and a rising and aging housing stock that requires increased maintenance.

Employment in new-home construction is expected to rise through the middle of the decade, but then recede by 2030. The renovation market is expected to lead employment gains, rising by just under 2,000 workers over the decade – an 8% increase over 2020 employment levels. Total residential construction employment is expected to rise by 3,000 workers by 2030 – a 4% increase compared to 2020.

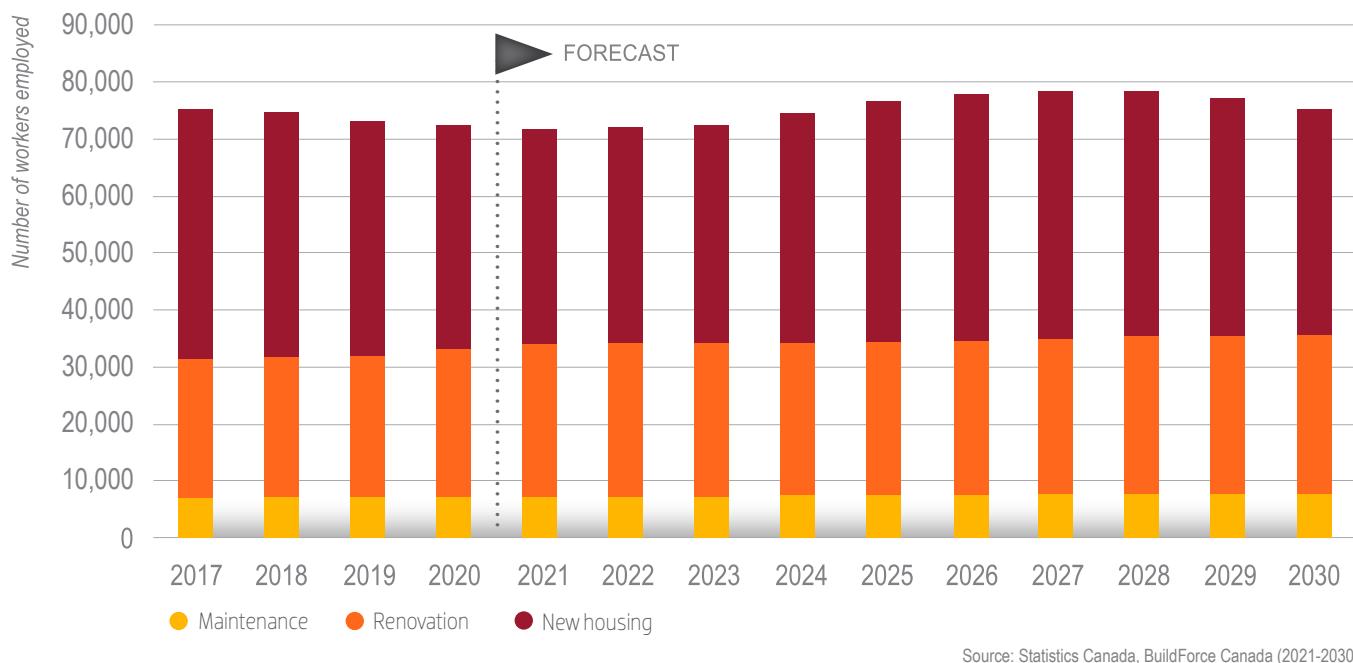
Figure 1 shows the employment trends by sector for residential construction.

THE AVAILABLE LABOUR FORCE

Figure 2 provides a summary of the estimated changes in the residential labour force across the full 2021–2030 scenario period. Over the period, the addition of a potential 14,457 new-entrant workers under the age of 30 from local recruitment efforts will help to moderate labour force pressures of an estimated 17,200 retirements. In the absence of increased recruiting, a deficit of 4,018 workers is projected to emerge by 2030.

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

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

Figure 1: Residential construction employment growth outlook, Alberta**Figure 2: Changes in the residential 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

RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

Table 1 shows weakened labour market conditions in 2020 for trades more concentrated in new-home construction due to lower housing starts, while conditions were more balanced for those involved in renovation work. Housing starts are expected to remain weak in 2021 with more steady levels of renovation work.

The start of the anticipated new-home construction up-cycle in 2022 and steady growth in renovation work is projected to bring most trades back into balance by 2023. New-home construction cycles up to peak in 2026, which may create some challenges during peak periods, but significant recruiting challenges are not expected, with market conditions remaining mostly balanced across the scenario period.

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, Alberta

TRADES AND OCCUPATIONS – RESIDENTIAL	2019	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Bricklayers	3	3	3	3	3	3	3	3	3	3	3
Carpenters	2	3	3	3	3	3	3	3	3	3	3
Concrete finishers	2	3	3	3	3	3	3	3	3	3	3
Construction estimators	2	2	2	3	3	3	3	3	3	3	3
Construction managers	2	2	2	2	3	3	3	3	3	3	3
Contractors and supervisors	3	2	2	2	3	3	3	3	3	3	3
Electricians	2	2	3	3	3	3	3	3	3	3	3
Floor covering installers	2	2	2	3	3	3	3	3	3	3	3
Gasfitters	2	2	2	3	3	3	3	3	3	3	3
Glaziers	3	2	2	3	3	3	3	3	3	2	2
Heavy equipment operators (except crane)	2	3	3	3	3	3	3	3	3	3	3
Heavy-duty equipment mechanics	3	3	2	3	3	3	3	3	3	3	3
Homebuilding and renovation managers	3	3	3	3	3	3	3	3	3	3	3
Insulators	3	3	3	3	3	3	3	3	3	3	3
Painters and decorators	3	3	3	3	3	3	3	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	3	3	3	3	3	3	3	3	3	3	3
Plumbers	2	2	2	3	3	3	3	3	3	3	3
Refrigeration and air conditioning mechanics	3	2	2	3	3	3	3	3	3	3	3
Residential and commercial installers and servicers	3	3	3	3	3	3	3	3	3	3	3
Roofers and shinglers	3	3	3	3	3	3	3	3	3	3	3
Sheet metal workers	3	2	2	3	3	3	3	3	3	3	3
Tilesetters	3	2	2	2	3	3	3	3	3	3	3
Trades helpers and labourers	3	2	3	3	3	3	3	3	3	3	2
Truck drivers	2	3	3	3	3	3	3	3	3	3	3

Source: BuildForce Canada

NON-RESIDENTIAL SECTOR

Sharp reductions in industrial and commercial building construction, and mining- and transportation-sector activity lowered non-residential construction levels in 2020, offsetting increased institutional and petrochemical plant investment. A slight increase in activity is expected in 2021 that will produce more stable levels of employment following years of declines associated with a prolonged contraction of investment in the oil and gas sector. Pipeline developments, major public transportation projects in both Calgary and Edmonton, and a moderate rise in oil sands investment combine to increase engineering construction in 2021, which is then mostly sustained to 2023.

Engineering construction slows following 2021 and toward mid-decade, as a large-scale petrochemical project ends in 2022, and pipeline projects and the expansion of the Telus fibre optic infrastructure wind down. After these projects are completed, other engineering investment moves in line with general economic cycles and shows significantly less variation to the end of the decade. Overall, growth remains on an upward path, driven by projected stronger but moderate growth in oil sands investment, as pipeline export capacity and projected increases in global oil demand drive new investments in the sector.

Industrial, commercial, and institutional (ICI) building activity is expected to remain subdued over the near term as current public-sector building projects wind down. Institutional building construction increased in 2020, as the provincial government's capital spending plan called for increased education and health care projects. Investment levels are expected to decline to 2023 as projects wind down, before picking up again later in the decade, driven by stronger population growth and increased demand for public infrastructure.

Commercial building construction declined in 2020, as the pandemic closures had a significant impact on the hospitality and other service sectors, including commercial office buildings, where vacancies were already soaring prior to the pandemic. Activity is expected to recover

later in the scenario period, as economic recovery and population growth increase demand for commercial services. Industrial building investment strengthens by mid-decade in line with increased oil and gas activity and broader spin-off investment in the manufacturing sector.

Employment in the non-residential sector is expected to rise over the scenario period, adding 16,000 workers by 2030 – a 16% rise over 2020 levels. Figure 3 tracks the distribution of non-residential employment by sector between 2020 and 2030.

Table 2 summarizes the percent change in non-residential employment by sector across two periods: the first captures the period of slower growth from 2021 to 2023, and the second shows the latter part of the scenario period as overall construction and economic conditions improve.

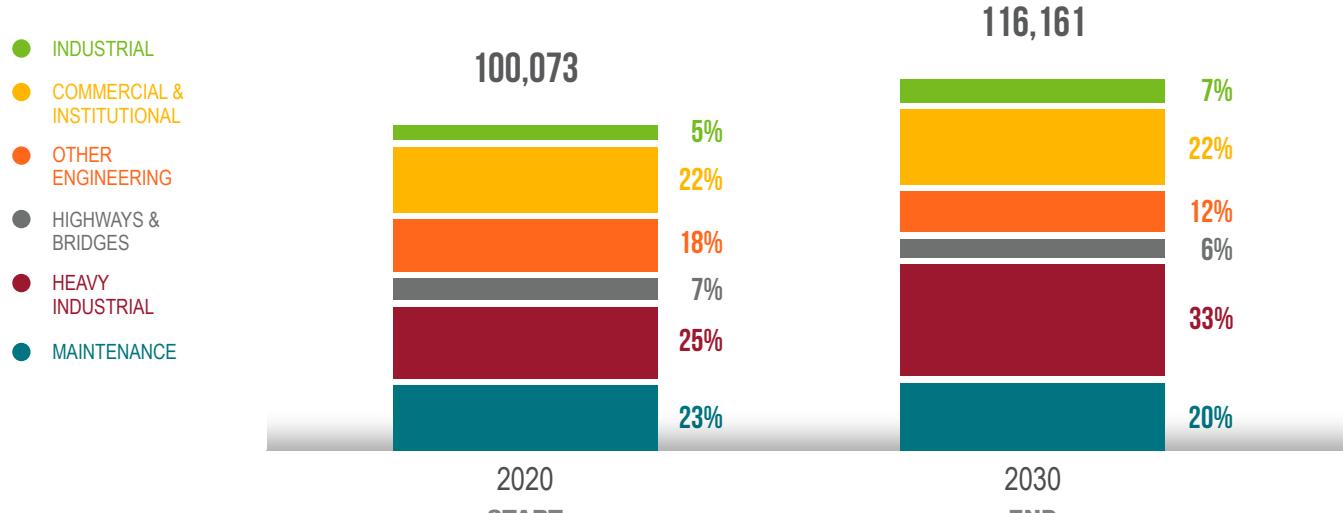
Table 2: Changes in non-residential employment by sector, Alberta

SECTOR	% CHANGE 2021–2023	% CHANGE 2024–2030
Total non-residential employment	-1%	17%
ICI* buildings	18%	24%
	0%	18%
Engineering	-12%	2%
	-2%	24%
Maintenance	0%	6%

Source: Statistics Canada, BuildForce Canada (2021-2030)

* industrial, commercial, institutional

Figure 3: Non-residential employment distribution by sector, Alberta, 2020 and 2030



Source: Statistics Canada, BuildForce Canada (2021-2030)

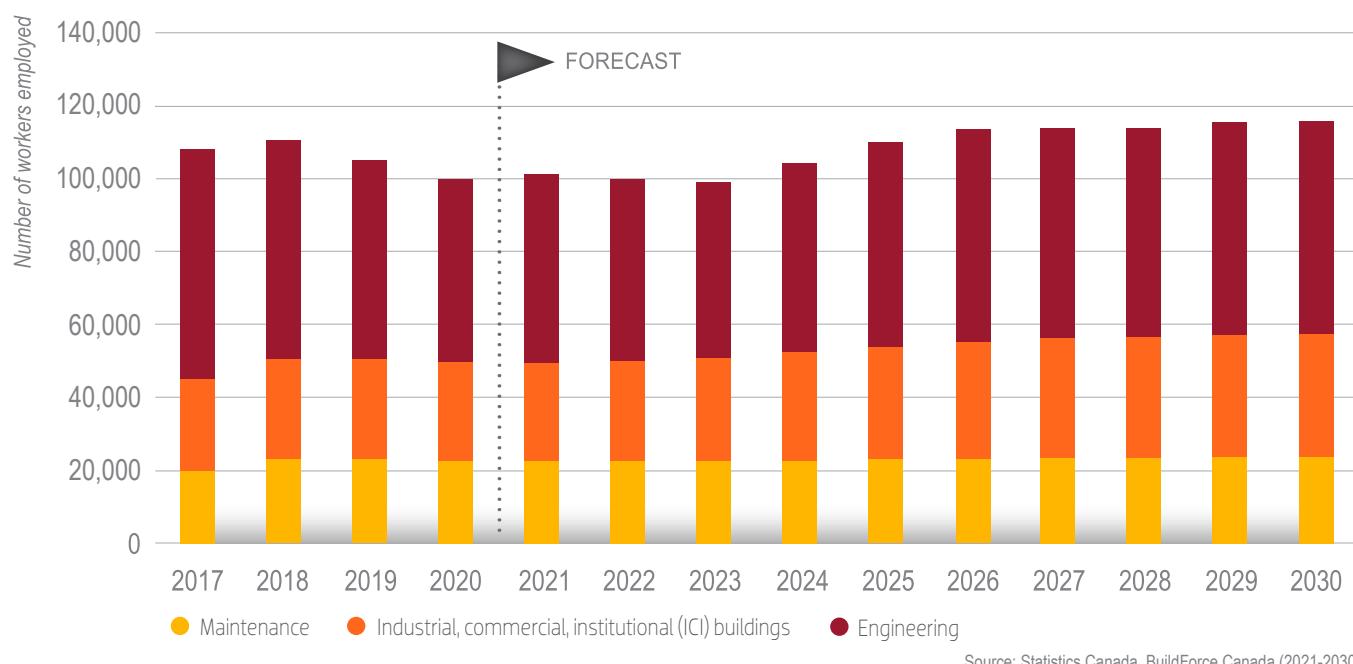
Figure 4: Non-residential construction employment growth outlook, Alberta

Figure 4 shows the employment trends by sector for non-residential construction across the scenario period.

THE AVAILABLE LABOUR FORCE

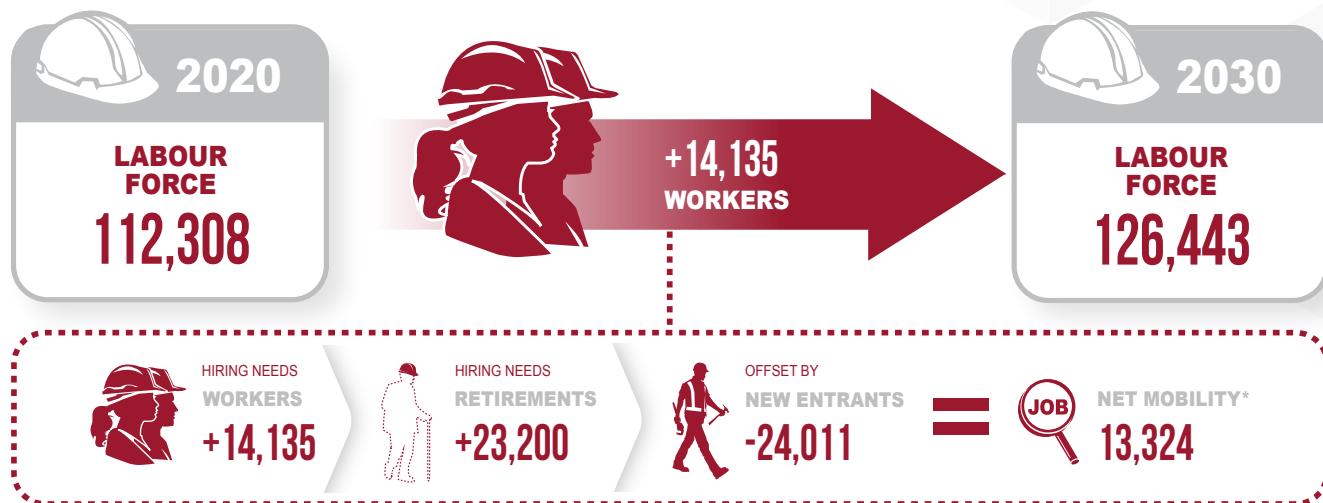
Steady levels of employment and the return of workers to the labour force may increase unemployment further in 2021, though it is expected to recede as employment growth returns. The anticipated retirement of 23,200 workers accounts for a large and growing loss of workers from the labour force. The potential addition of an estimated 24,000 new-entrant workers under the age of 30 from local recruitment efforts may help to moderate labour force pressures, but unless recruitment is increased, a deficit of 13,324 workers is expected to emerge by 2030.

Figure 5 provides a summary of the estimated changes in the non-residential labour force across the full 2021–2030 scenario period.

NON-RESIDENTIAL RANKINGS, RISKS, AND MOBILITY

Table 3 shows weakened labour markets in 2020 due to declines across almost all sectors. The largest declines were in oil sands, and industrial and commercial building construction. Increased institutional construction, particularly in education and health care projects, sustained employment for some trades, but overall labour market conditions were weak. As current projects wind down, market conditions weaken again in 2022 and 2023.

Near-term market conditions may vary, with significant short-term recruiting challenges for specialized trades and occupations related to scheduled industrial shutdown and maintenance work. Increased oil sands and industrial building investment should bolster demand for some trades over the medium term and then return to balance under more moderate growth across the remainder of the scenario period.

Figure 5: Changes in the non-residential 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

Table 3: Non-residential market rankings, Alberta

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Boilermakers	2	3	3	3	3	3	3	3	3	3	3
Bricklayers	3	3	3	3	4	4	3	3	3	3	3
Carpenters	3	3	3	2	4	4	3	3	3	3	3
Concrete finishers	2	2	3	2	3	3	3	3	3	3	3
Construction estimators	2	3	3	2	4	3	3	3	3	3	3
Construction managers	2	3	2	3	4	4	4	3	3	3	3
Construction millwrights and industrial mechanics	2	3	3	2	4	4	4	3	3	3	3
Contractors and supervisors	2	3	3	3	3	4	3	3	3	3	3
Crane operators	2	3	4	3	4	4	3	2	2	3	3
Drillers and blasters	2	3	2	2	3	3	3	3	3	3	3
Electrical power line and cable workers	2	3	2	2	4	4	3	3	3	3	3
Electricians	2	3	3	2	3	4	3	3	3	3	3
Elevator constructors and mechanics	3	2	3	3	3	3	3	3	3	3	3
Floor covering installers	3	3	3	3	3	3	3	3	3	3	3
Glaziers	3	3	3	3	3	3	3	3	3	3	3
Heavy equipment operators (except crane)	2	3	2	2	3	3	3	3	3	3	3

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

TRADES AND OCCUPATIONS – NON-RESIDENTIAL	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Heavy-duty equipment mechanics	2	3	2	2	3	3	3	3	3	3	3
Industrial instrument technicians and mechanics	2	3	2	2	4	4	3	3	3	3	3
Insulators	2	3	3	3	3	4	3	3	3	3	3
Ironworkers and structural metal fabricators	2	3	2	2	3	3	3	3	3	3	3
Painters and decorators	3	3	2	3	3	3	3	3	3	3	3
Plasterers, drywall installers and finishers, and lathers	3	3	3	2	3	3	3	3	3	3	3
Plumbers	2	3	2	3	4	4	3	3	3	3	3
Refrigeration and air conditioning mechanics	3	3	3	3	3	3	3	3	3	3	3
Residential and commercial installers and servicers	3	3	3	3	3	3	3	3	3	3	3
Roofers and shinglers	3	3	2	3	3	4	3	3	3	3	3
Sheet metal workers	2	3	3	3	4	4	3	3	3	3	3
Steamfitters, pipefitters, and sprinkler system installers	3	3	2	2	3	4	3	3	3	3	3
Tilesetters	3	3	3	3	3	3	3	3	3	3	3
Trades helpers and labourers	2	3	2	3	3	3	3	3	3	3	3
Truck drivers	2	3	2	2	3	3	3	3	3	3	3
Welders and related machine operators	2	3	2	2	3	4	3	3	3	3	3

Source: BuildForce Canada

OIL SANDS CONSTRUCTION

New oil sands investment bottomed out in 2020 following several years of decline from the 2014 peak. The decline in investment has had a corresponding impact on overall heavy-industrial construction activity and employment. Both mining and in-situ production are expected to trend upward as demand returns and as pipeline export capacity improves in the province around 2023, where there is potential for a sharper increase in new related construction at that time. Investment rises over the next few years but remains well below previous peak levels of activity. Over the coming decade, sustaining capital investment accounts for almost two-thirds of total oil sands investment, shifting construction employment more toward maintenance activities. Figure 6 captures this change in new and sustaining capital investments.

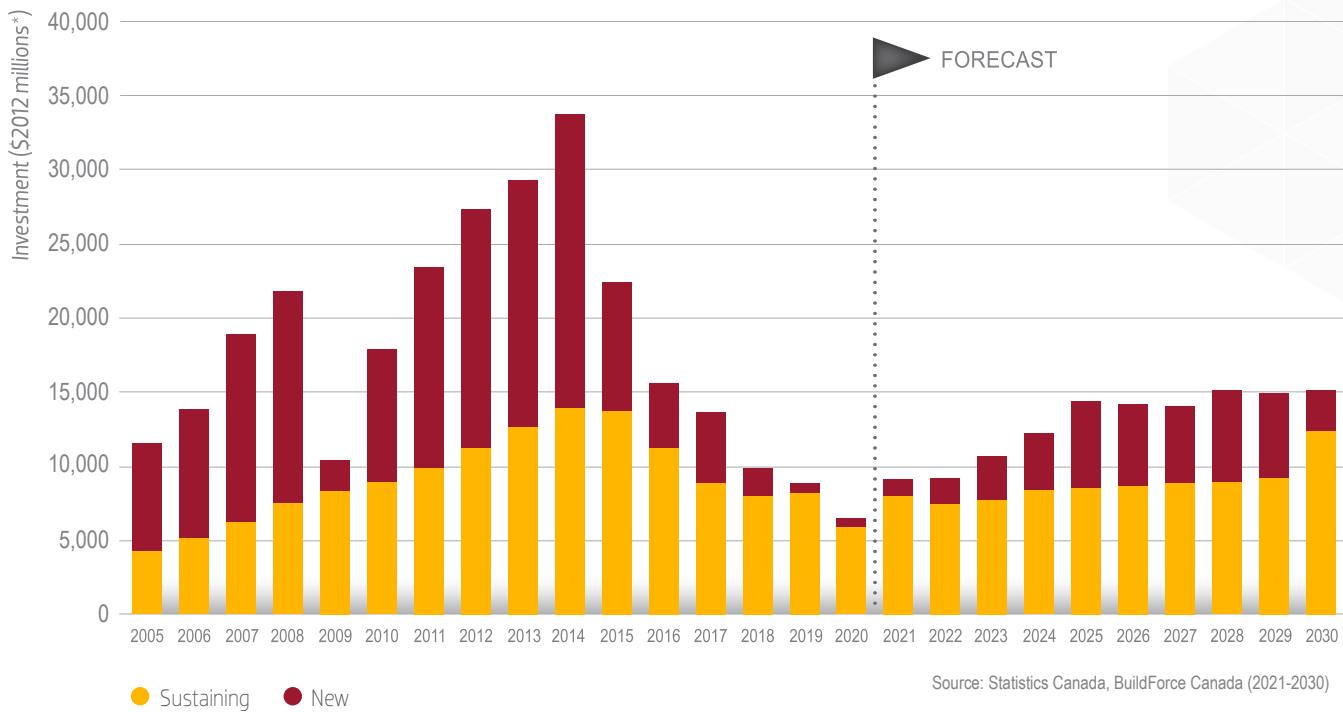
Unique to the oil sands sector is the volatility of shutdown/turnaround maintenance work, which, depending on the number and types of projects scheduled, can generate significant market challenges, driven by distinct seasonal peak demands within a year for brief periods (weeks/months). With anticipated higher demands in 2022, major shutdown/turnaround maintenance work will be a key driver of industry labour demands over the near term, with the largest requirements

concentrated during spring and fall peak periods. Demand typically requires workers with industrial experience and often 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 may be required to meet anticipated peak demands, with potential recruiting challenges emerging, as Alberta will be competing for highly specialized workers with other provinces where scheduled major capital projects will also be peaking around the same time, especially in Ontario and British Columbia.

Figure 6: Alberta oil sands investment – construction, machinery, and equipment (millions of 2012 dollars*)



* \$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.

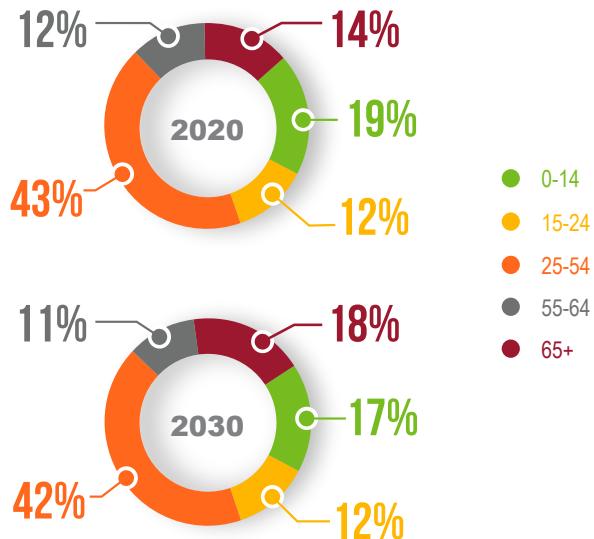
Note: investment displayed in this chart includes the value of machinery and equipment.

BUILDING A SUSTAINABLE LABOUR FORCE

With stable levels of activity expected in the near term and an expected recovery in the long term, Alberta is well positioned to build a sustainable workforce, as the province enjoys a relatively young population, but retirements are expected to rise over the coming decade. An estimated 40,400 workers, or 21% of the current labour force, is expected to retire by 2030. This represents a significant loss of workers and skills, which will require industry to think innovatively about attracting, training, and retaining qualified workers.

Retirements across all industries in the province are expected as baby boomers exit the labour force. Over the next 10 years, the share of the population in the older age bracket (65 years and over) is expected to increase, and at the same time, the share of the youth population (15-24 years old) is expected to see limited to no growth (see Figure 7). These demographic shifts have the potential to tighten labour markets, as labour force participation by older workers is much lower than that of their younger counterparts.

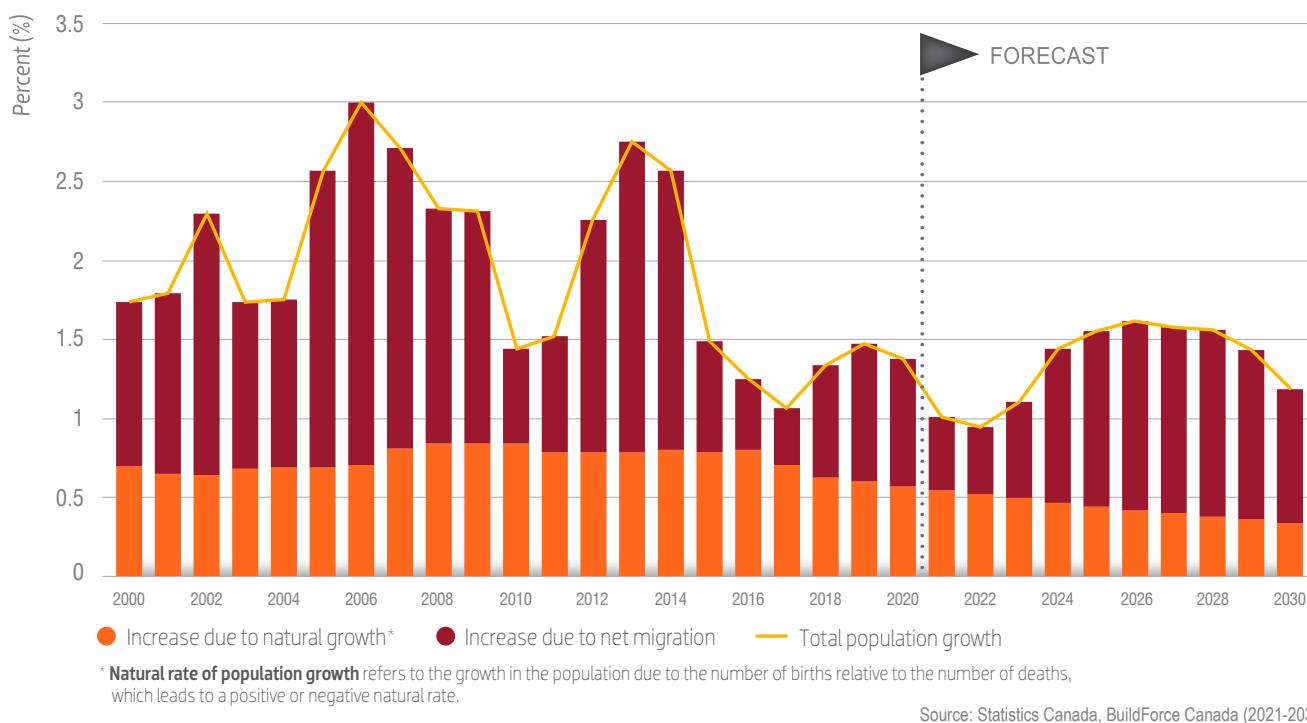
Figure 7: Population age distribution, Alberta



The aging of Alberta's population is expected to limit population growth over the coming decade, which may constrain labour force growth over the long run. Population growth had stabilized from the low levels registered in 2017, but is expected to slow over the first half of the scenario period before recovering and plateauing near 1.5% per year. These dynamics are directly attributable to the aging of the population, which will send the natural rate of population growth³ lower throughout the decade, while anticipated increases resulting from higher rates of migration into the province help to offset the trend. Components of population growth for Alberta are presented in Figure 8.

Based on historical trends, Alberta's construction industry is expected to draw an estimated 38,460 first-time new entrants under the age of 30 from the local population over the next decade. Across the scenario period, the pace of retirements slightly exceeds the number of youth coming into construction, forcing industry to look to other industries, other provinces, and other countries for additional new workers to augment the available pool of local new entrants.

Figure 8: Sources of population growth (%), Alberta



Source: Statistics Canada, BuildForce Canada (2021-2030)

APPRENTICESHIP

New registrations in the 20 largest construction trade programs peaked in 2014, followed by a sharp drop of nearly 6,000 new registrations in 2015. New registrations experienced another significant decline in 2019, falling 20% from 2018 levels to under 8,000 new registrants, in line with lower levels of provincial employment. Further declines are anticipated for 2020, as limited available data suggest COVID-19 has imposed obstacles to the delivery of in-school training, testing, and certification. These impacts are likely to reduce the near-term numbers of new certified workers.

Alberta's construction industry is projected to require nearly 18,000 new certified journeypersons to sustain the current workforce share of certifications and to keep pace with employment and replacement demands across all industries over the scenario period.

Table 4 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 entrants required to fulfill demand requirements over the scenario period, taking into account trends in program completion rates.

³ 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.

Table 4: Estimated construction certification demand and projected target of new entrants at 42% assumed rate of completion, Alberta, 2021 to 2030

	2021	2022	2023	2024	2025	Total 2021–2025	Total 2026–2030
Total certification demand – all industries	4,390	4,360	4,681	3,672	4,892	21,995	13,162
Total certification demand – construction	1,948	2,169	2,418	1,929	2,773	11,237	6,741
Construction certification share (%)	50%	50%	50%	50%	51%	50%	51%
Target new registrants – construction	6,232	6,113	4,295	2,892	3,016	22,548	15,162

Source: BuildForce Canada

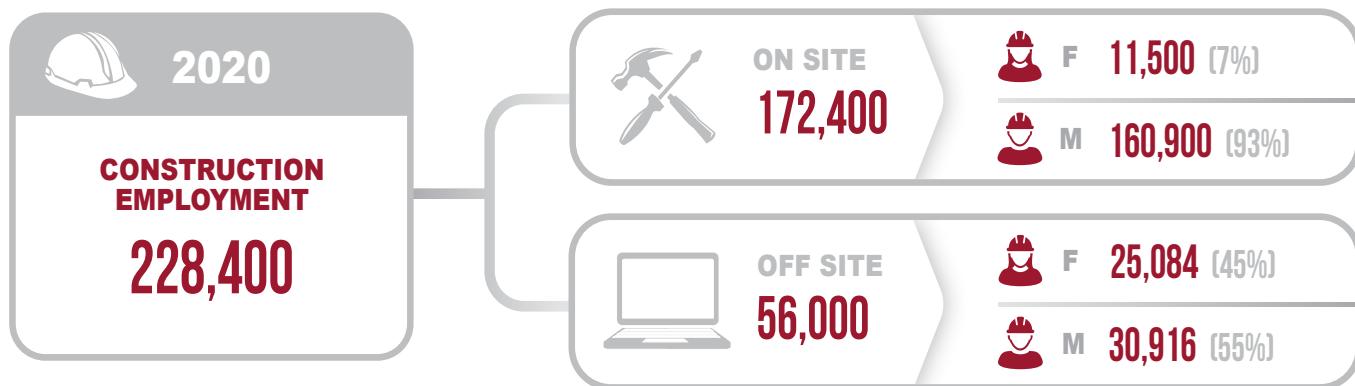
Table 5 provides a trade-by-trade breakdown of the anticipated certification requirements to meet the construction industry's share of employment and replacement demand over the scenario period. Based on projected new registrations, all trades are expected to meet or exceed anticipated requirements by 2030, except for Boilermaker, Carpenter, Glazier, Insulator, Plumber, Powerline Technician, and Welder. These specific trades were identified as being at risk of being

undersupplied. Supply risk may be increased over the near term depending on the severity of the decline in new registrants caused by the impact of COVID-19. It is important to note that since it is difficult to determine in what sectors apprentices may work after completing their program, the analysis compares the projected supply of new journeypersons and certification requirements across all industries. It does not account for existing imbalances at the 2020 starting point.

Table 5: Estimated construction certification demand and projected target of new entrants by trade, Alberta, 2021 to 2030

Trade	Total certification demand – construction	Target new registrants – construction	Apprentice certification supply risk – all industries
Boilermaker	1,062	2,256	At-risk supply
Carpenter	3,737	7,458	At-risk supply
Construction Electrician	4,274	7,146	Ample supply
Gasfitter	63	98	Ample supply
Glazier	213	415	At-risk supply
Heavy-Duty Equipment Technician	329	625	Ample supply
Heavy-Duty Equipment Technician (Off Road)	110	122	Ample supply
Hoist Operator (Boom Truck)	135	380	Ample supply
Hoist Operator (Wellhead)	202	493	Balanced supply
Industrial Instrumentation and Control Technician	134	192	Ample supply
Industrial Mechanic (Millwright)	262	342	Balanced supply
Insulator (Heat and Frost)	740	1,608	At-risk supply
Ironworker (Reinforcing)	134	955	Ample supply
Mobile Crane Operator	98	195	Ample supply
Plumber	2,655	6,840	At-risk supply
Powerline Technician	250	373	At-risk supply
Refrigeration and Air Conditioning Mechanic	651	964	Ample supply
Sheet Metal Worker	672	1,644	Balanced supply
Steamfitter/Pipefitter	1,243	3,502	Balanced supply
Welder	1,013	2,103	At-risk supply
Total	17,978	37,711	

Source: BuildForce Canada

Figure 9: Detailed construction employment by gender, Alberta, 2020

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

UNDERREPRESENTED GROUPS OF WORKERS

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

In 2020, there were approximately 36,600 women employed in Alberta's construction industry, of which 31% worked on site, directly on construction projects, while the remaining 69% worked off site, primarily in administrative and management-related occupations. Of the 172,400 tradespeople employed in the industry, women made up only 7% (see Figure 9). Alberta is one of the leading provinces in the employment of women within the construction trades.

The estimated 11,500 tradeswomen in Alberta are employed across all sectors of construction, but the majority tend to be employed in the non-residential sector (54% of tradeswomen), particularly in the engineering segment of construction. Despite the larger number of

women employed in the non-residential sector, the representation of women (percent of women in the total workforce) is higher in the residential sector, with women accounting for 7.3% of total tradespeople, compared to 6.3% in non-residential construction (see Figure 10). Given Alberta's resource-intensive economy, engineering construction is a key employer of women, but they make up a relatively small share of total employment in this sector.

The top five trades and occupations in which women tend to be employed are painters (17% of all tradeswomen), trades helpers and labourers (17%), construction managers (10%), electricians (8%), and contractors and supervisors (7%). These top five account for just over half of all tradeswomen and, unique to Alberta given the size of the heavy-industrial engineering workforce, some women are employed in trades such as Boilermaker, Insulator, Heavy Equipment Operator, and Truck Driver.

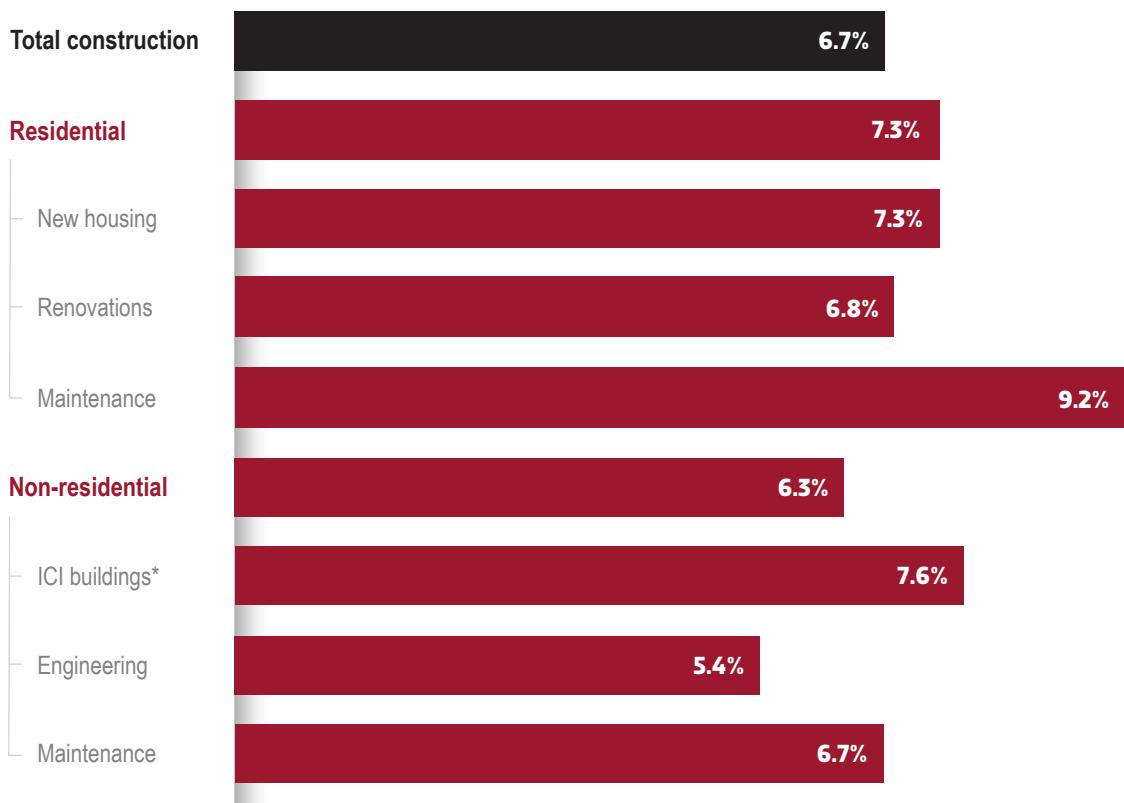
The Indigenous population is another underrepresented group that presents recruitment opportunities for Alberta's construction industry. In 2020, Indigenous people accounted for approximately

10-YEAR AVERAGE

1.3%	51,800	31,400	42,700
POPULATION GROWTH	BIRTHS	DEATHS	NET MIGRATION

BY 2030

41	21%
AVERAGE AGE	PERCENT OF CURRENT LABOUR FORCE LOST TO RETIREMENT

Figure 10: 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 the 2016 Census of the Population.

5% of Alberta's total working-age population⁴. The Indigenous population is the fastest growing in Canada and has a higher propensity to choose the construction industry as a potential career choice. Based on the 2016 Census, an estimated 7.6% of non-Indigenous Canadians were employed in the construction industry, compared to 9.6% for the Indigenous population.

Approximately 6.4% of Alberta's construction workforce is made up of Indigenous people, of which about 80% work directly on construction projects, while the remaining 20% work primarily in administrative and management-related occupations. The Indigenous population is also more likely to work in heavy-industrial construction – approximately 30% of Indigenous people working in construction work in the sector, compared to 20% of non-Indigenous workers.

Alberta's construction industry may also leverage new Canadians (immigrants) over the coming decade to meet labour requirements. The province is expected to welcome a net of 426,800 new international migrants between 2021 and 2030, making the immigrant population a key source of labour force growth.

Alberta's construction labour force is made up of approximately 17% new Canadians.⁵ Historically, a key source of immigrants to the

province were European, who tend to have a higher affinity to work in the construction industry. The new wave of immigration primarily includes workers from Asia (China, India, and the Philippines), whose citizens may have a lower tendency to consider employment in the construction sector. Due to Canadian immigration policies and selection criteria, persuading individuals upon arrival to consider careers in the trades may be challenging, particularly for those with professional training outside the skilled trades that are seeking employment in other sectors of the economy. As immigrants will make up an increasing share of the overall Canadian population over the next few decades, additional recruitment efforts will be required to ensure the construction industry continues to recruit its share of new Canadians into the labour force.

CONCLUSIONS AND IMPLICATIONS

Investment in Alberta has slowed over the last few years in line with declines in new oil sands investment and the winding down of several pipeline projects. The impact of COVID-19 has certainly increased the level of uncertainty surrounding energy prices and has delayed the anticipated recovery.

⁴ Statistics Canada. Table 14-10-0364-01 Labour force characteristics by province, region, and Aboriginal group (x 1,000)

⁵ Statistics Canada, BuildForce Canada (2021-2030)

Non-residential construction activity increases in 2021 in line with major projects, including health care and education services, oil and gas investment, pipelines, and transit projects, that helps to sustain construction employment through 2023, followed by moderate growth, driven by anticipated increased oil sands investment, as pipeline export capacity and increased global oil demand drive new investments in the sector. Major industrial shutdown/turnaround maintenance work will continue to be the key driver of non-residential labour demands over this period, with the largest requirements concentrated during spring and fall peak periods.

New-home construction is expected to slowly cycle up between 2021 and 2026 as overall economic conditions improve and population growth accelerates. Renovation and maintenance work also trend up over the decade.

As market conditions follow the ebbs and flows of major projects, weaker short-term demand may limit the opportunities for training and labour force development. However, industry must remain focused on replacing the estimated 40,400 workers expected to retire, or 21% of the current labour force, to avoid the development of potential skills shortages in the provincial labour force.

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-run oil price outlook and industry capital investment assumptions. Any changes to these assumptions present risks and potentially alter anticipated labour market conditions.

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