



CANADA'S TERRITORIES

Construction trades outlook for major projects in Canada's Territories

HIGHLIGHTS 2023–2032

Construction employment in the territories, and particularly the non-residential component focused on engineering construction, is typically supplemented by the workforces of neighbouring provinces. This makes employment conditions across provinces a significant factor governing the ability of the territories to meet their labour force needs. Historically, British Columbia and Alberta have contributed construction labour to Yukon and the Northwest Territories, whereas Quebec, Ontario, and Newfoundland and Labrador tended to support projects in Nunavut and eastern parts of the Northwest Territories.

Across Canada, construction investment has increased dramatically since the COVID-19 pandemic. Governments at all levels have invested heavily in infrastructure as a tool to stimulate the economy. In 2022, combined residential and non-residential construction investment increased by 3% over the record high reported in 2021. Residential investment levels were driven by record-low interest rates in the first half of the year, and a growing demand for housing that was spurred by low rental vacancy rates in many cities and high levels of immigration. The non-residential sector benefitted from stronger levels of public-sector investment in health care, utilities, transportation, and public transit, as well as robust levels of private-sector investment.

Across the forecast period, residential-sector employment will experience competing pressures. A contraction in new-housing construction is driven, initially, by consumer concerns over affordability and lending rates; in later years, an aging population further reduces demands. Meanwhile, the renovation and maintenance segments will add workers continuously across the forecast period, driven by an aging housing stock and the desire of many Canadians to age in place¹. Although significant, the combined increases in maintenance and renovation activity are not enough to offset the losses in the new-housing segment.

Non-residential employment enters the forecast period supported by a broad range of major engineering-construction and institutional-building projects across the country. These include public-transit works in Ontario and Quebec; utilities in British Columbia and Ontario; mining in Ontario and Saskatchewan; roads, highways and bridges in British Columbia, Nova Scotia, Ontario, and Quebec; and hospital and health care facilities in Nova Scotia, Quebec, Ontario, and British Columbia. Employment is anticipated to rise to a peak in 2027 (and to above pre-pandemic levels by 2026), before declining modestly through the remainder of the forecast period. By 2032, employment is expected to increase by 4% over 2022 levels.

Meeting peak demands will be challenged by limited provincial mobility. Many provinces are already experiencing high or sustained levels of construction activity, giving workers no strong incentives to relocate in the near term. Labour market challenges are complicated by the retirement of an estimated 245,100 workers, or 20% of the 2022 workforce. This represents a significant loss of skills and experience that is unmatched by new workers entering the labour force.

The task of attracting new workers to construction may also become increasingly difficult, as many industries face similar challenges related to replacing an aging labour force. Meeting near- and long-term demand requirements will require a combination of strategies that include increased recruitment and training of youth, looking to traditionally under-represented groups, such as women, Indigenous People, and newcomers to Canada, or to other industries to augment the available pool of local workers.

For the territories, balancing labour requirements will require a mix of short- and long-term mobility solutions that include fly-in, fly-out movement into remote locations and more long-term additions of young and permanent workers to each regional labour market.

The purpose of this document is to identify key projects in the territories and provide estimates of their construction trades requirements. While BuildForce Canada produces provincial forecasts for construction trades, the lack of detailed historical labour market information for Canada's territories makes it difficult to provide similar outlooks for these regions. Nevertheless, there are several major construction projects proposed for the territories, mainly in the mining sector, that will draw on the same skilled labour pool needed for other major resource projects underway and proposed across Canada.

BACKGROUND

The Northwest Territories has the largest economy in the North, with the mining industry accounting for 32% of total GDP in 2021. The territory hosts three diamond mines, which account for roughly 90% of the mining sector's output; the remaining output largely consists of oil and gas production. Under the new ownership of Arctic Canadian Diamond Company, the Ekati mine reopened in

¹ Aging in place is defined as required renovations and modifications to enable individuals to continue to live independently and safely in their residence as they age.

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.

early 2021. Its closure, combined with weaker demand due to the global pandemic, was the main cause of the near-45% reduction in mining GDP experienced in the territory between 2018 and 2020. Mining GDP has since seen gains. The current life of the Ekati mine runs until 2026; an extension is possible should further development occur.

Economic growth in the Yukon economy accelerated to 10% in 2021 as Victoria Gold Corp.'s Eagle Gold Mine started production. Since 2017, the construction of the Eagle Gold Project has supported economic growth, while waning metal mining production has acted as a hinderance. Mining's share of Yukon's GDP fell from 10% in 2016 to about 5% in 2019. The Eagle Gold Project helped to restore value in the sector, bringing mining's share of GDP up to 14% in 2021.

Mining investment has propelled exceptional growth in Nunavut since 2017. As construction at these projects has been completed and the mines have transitioned to production, exports have jumped while construction has slowed. The mining industry accounted for 36% of the territory's GDP in 2021.

Table 1 shows the level and percent change in real GDP by region for the period from 2012 to 2021.

Over the last few years, the divergent growth patterns among the territories are primarily due to the differing development paths of their respective mining industries. In the Northwest Territories, the diamond mining sector has reached maturity; production declines can be expected in the future. The Diavik mine is expected to shut down mid-decade, and the Ekati mine may also be shuttered before the end of the forecast period if they do not initiate an expansion. The new Gahcho Kué mine adds to production but will not be a sufficient offset for the industry. In partnership with the federal government, the Government of the Northwest Territories is working to develop new road, electrical, and telecommunications infrastructure to the mineral-rich northeastern region. These plans, however, are expected to take decades to come to fruition. In Yukon, exploration has seen an uptick, as prices for many base metals have risen, though various mining projects remain in the assessment stage.

As territorial and federal governments work with companies to develop new road infrastructure to access resources, it is expected that some of these projects will commence. Meanwhile,

the re-opening of the Minto Mine, the start of production at Eagle Gold coupled with soaring gold prices, and the construction of Kudz Ze Kayah mine will push economic growth higher. Sustained output at the Meadowbank Complex, production at the new Meliadine gold mine, and the possible expansion of road infrastructure all provide encouragement for Nunavut's mining industry in the coming years.

PLANNED MAJOR CONSTRUCTION PROJECTS

This section provides brief overviews of proposed major construction projects across Canada's territories.

Several exploration projects are currently being tracked but are not included in this analysis, as there is limited information available on the estimated capital costs or anticipated schedules.

Table 2 lists the major current and proposed projects for the territories, including the estimated capital costs associated with the construction phase, as well as the anticipated start and end dates, where available. The construction capital costs are used to estimate trades requirements. Despite the positivity in current market conditions as the global economy continues to recover from the pandemic, a number of known projects have not made final investment decisions. Pending approvals, the start and end dates for these projects are unknown.

NORTHWEST TERRITORIES

Giant Mine Remediation Project

The Giant Mine was a large gold mine located on the Ingraham Trail outside Yellowknife. Remediation work, which began in July 2021, will remove material contaminated with arsenic and asbestos. The work will involve ground stabilization and construction of a landfill for non-hazardous waste. The larger focus of the project is to permanently freeze toxic waste underground. The project was initially estimated to take up to 10 years at a capital cost of \$1 billion. The scope of the project has since been revised, and its total cost increased to \$4.38 billion across its 2005–2038 project life. As of late 2022, \$710 million had been invested in the project.

Table 1: Real GDP of the territories (millions of 2012 dollars*)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Northwest Territories	4,394	4,521	4,735	4,779	4,712	4,873	4,941	4,750	4,265	4,475
	-0.3%	2.9%	4.7%	0.9%	-1.4%	3.4%	1.4%	-3.9%	-10.2%	4.9%
Nunavut	2,199	2,410	2,379	2,372	2,492	2,821	2,953	3,175	3,211	3,467
	2.3%	9.6%	-1.3%	-0.3%	5.1%	13.2%	4.7%	7.5%	1.1%	8.0%
Yukon	2,558	2,595	2,614	2,409	2,588	2,634	2,702	2,667	2,769	3,045
	4.0%	1.4%	0.7%	-7.8%	7.4%	1.8%	2.6%	-1.3%	3.8%	10.0%

* **\$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 year-to-year change of the value of production, factoring out growth (increased value) due to increases in prices.

Source: Statistics Canada

Table 2: Major projects and capital costs

	PROJECTS	CONSTRUCTION		
		Start year	End year	Capital Cost (\$Millions)
Northwest Territories	Giant Mine Remediation Project	2021	2038	\$3,670
	Great Bear River Bridge	2024	2027	\$140
	Mackenzie Valley Highway	---	---	\$700
	Nechalacho (Thor Lake) Project	---	---	\$ –
	NICO Project	---	---	\$210
	Pine Point Mine	---	---	\$653
	Prairie Creek	2024	2025	\$278
	Prairie Creek All-Season Road	2022	2024	\$89
	Slave Geological Province Corridor	---	---	\$1,300
	Taltson Hydro Expansion Project	---	---	\$ –
	Total			\$7,040
Yukon	Brewery Creek	---	---	\$105
	Carmacks Copper	---	---	\$220
	Casino Mine	---	---	\$3,600
	Coffee Gold Project	---	---	\$317
	Kudz Ze Kayah Project	2025	2028	\$321
	MacMillan Pass Project	---	---	\$404
	Resource Gateway Project	2021	2026	\$468
	Total			\$5,435
Nunavut	Back River Project	2023	2025	\$610
	Back River Renewable Energy Centre	---	---	\$ –
	Grays Bay Road and Port Project	---	---	\$550
	Mary River Expansion Project (phases 2 and 3)	---	---	\$1,300
	Total			\$2,460

Source: Yukon Economic Development, NWT Bureau of Statistics, Nunavut Bureau of Statistics and company websites

Great Bear River Bridge

The Great Bear River Bridge will support the Mackenzie Valley Winter Road and future highway (see below). The project is expected to begin in 2024 and be completed by 2027 at a cost of \$140 million.

Mackenzie Valley Highway Project

The Mackenzie Valley Highway project is a proposed 321-kilometre, two-lane gravel highway connecting Norman Wells and Wrigley. The project is estimated to cost \$700 million (including the Great Bear River Bridge project above) and will replace the current

Mackenzie Valley Winter Road. An environmental assessment that has been ongoing since 2012 is expected to be completed in 2024. Regulatory requirements will take another year before construction can begin.

Nechalacho (Thor Lake) Project

The Nechalacho rare earth deposit is located at Thor Lake, about 100 kilometres southeast of Yellowknife. Operations began in 2021 as part of a three-year demonstration project. During this time, the mine will scale up production to reach 1,000 tonnes annually. A Stage 2 plan for the mine that involves development of the larger Tardiff deposit is being developed.

NICO Project

The NICO deposit is located 150 kilometres northwest of Yellowknife. The cobalt-gold-bismuth-copper deposit has proven and probable mineral reserves totaling 33 million tonnes. Project owner Fortune Minerals Limited plans to build a 50-kilometre spur road to connect the mine with the Tlicho all-season road. Once complete, the road will allow Fortune to truck materials to a planned refinery in Alberta. Estimated capital costs for the NICO Project mine are currently \$210 million. Fortune, however, plans to update a 2014 feasibility study. Due to economic and capital market volatility, Fortune further extended its purchase option on the Alberta site where it plans to develop a hydrometallurgical facility.

Pine Point Mine

The Pine Point Mine is located west of Fort Resolution on the south shore of Great Slave Lake. Osisko Metals acquired the lead-zinc project in December 2017. An update to the company's 2020 preliminary economic assessment projects output of an average of 329 million pounds of zinc and 141 million pounds of lead annually over the mine's 12-year lifespan. The total capital cost of construction is estimated at \$653 million. Osisko Metals will continue drilling at the site until 2023 as it works toward a feasibility study.

Prairie Creek all-season road

The 170-kilometre road will connect the Prairie Creek Mine with Highway 7. Construction on the first phase of the project began in late 2022. The project will have a capital cost of \$89 million.

Prairie Creek Mine

Prairie Creek is an advanced-stage zinc, lead, and silver mine located 250 kilometres west of Fort Simpson. The project's 2021 preliminary economic assessment indicated a 20-year life based on a throughput rate of 2,400 tonnes per day. The average annual payable zinc equivalent production is estimated at 261 million pounds. The permitting process for the mine was completed in 2022. Construction is expected to begin in 2024 at a capital cost of \$278 million. Production at the mine is expected at the end of 2025.

Slave Geological Province Corridor

The Slave Geological Province Corridor consists of a 413-kilometre, two-lane gravel infrastructure corridor. The road would serve as a transportation, hydro, and communications corridor that connects the northeastern part of the territory and its vast mineral deposits to the south. Preliminary estimates on the cost of road construction and infrastructure total \$1.3 billion. The project is currently undergoing environmental assessments.

Taltson Hydro Expansion Project

The proposed project looks to expand generation capacity by 60 megawatts and link power grids north and south of Great Slave Lake. The project is in its feasibility stage.

YUKON

Brewery Creek

The Brewery Creek property is located within the foothills of the Ogilvie Mountains along the northeastern boundary of the Tintina Trench. The property is now owned by Sabre Gold Mines following the merger of Golden Predator Mining Corp. and Arizona Gold Corp. It is a past-producing heap leach gold mine. Sabre Gold filed an independent technical report in January 2022 in support of the preliminary economic assessment. Pre-construction capital cost are estimated at \$105 million, with an additional \$18 million over the life of the mine. Average annual production would be 60,000 ounces of gold annually over an initial eight-year life.

Carmacks Copper

Granite Creek Copper Ltd. is the sole owner of the Carmacks Copper project located 198 kilometres north of Whitehorse. The proposed project claims significant gold, copper, and silver deposits. The 2023 preliminary economic assessment indicates a capital cost of \$220 million and an operating life of nine years. It also outlines opportunities for additional mine-life expansion. The proximity of infrastructure, including grid power, all-season roads, and existing deep-sea ports provide further upside for the project.

Casino mine

Casino Mining Corporation is developing the Casino Project, a copper, gold, molybdenum, and silver deposit, located about 300 kilometres northwest of Whitehorse. It is among the largest copper-gold deposits in Canada. The project is expected to produce gold, silver, copper, and molybdenum over a 27-year life. The estimated capital cost is in the range of \$3.6 billion according to a 2022 feasibility study. Casino expects to submit the project's environmental and socio-economic statement to the Yukon Environmental and Socio-economic Assessment Board in 2023.

Coffee Gold Project

Newmont's Coffee Gold Project is a proposed open-pit gold mine, located approximately 130 kilometres south of Dawson City. It is expected to produce roughly 200,000 ounces of gold per year for about 10 years, followed by an 11-year closure period. Construction of the mine is expected to take 30 months. In early 2022, federal and territorial governments issued a decision to allow the project to proceed.

Kudz Ze Kayah Project

The Kudz Ze Kayah Project is a predominantly open-pit operation in southeast Yukon within the traditional territory of the Kaska First Nation. The project owner, BMC Minerals, reports a mine life of nine years, with annual average production of 14,400 tonnes of copper, 106,800 tonnes of zinc, and 25,300 tonnes of lead. Development costs are expected to total \$321 million, with construction taking place between 2025 and 2028.

MacMillan Pass Project

Fireweed's MacMillan Pass Project, regarded to be the world's most significant zinc resource, includes the large Tom and Jason zinc-lead-silver deposits. Significant mineral deposits have been proven on the site for decades, and exploration is ongoing. The project benefits from having established road access. The appreciation in zinc prices since mid-2020 is positive for the development outlook of this mine.

Resource Gateway Project

The Government of Canada, the Government of Yukon, and the mining industry have committed to contributing more than \$468 million in infrastructure investment for the Resource Gateway Project. The aim is to increase access to the resource-rich territory and promote private investment. The project is broken up into 11 components, some of which have already begun construction.

NUNAVUT

Back River Project

The Back River Project is owned by Sabina Gold & Silver Corp. and holds proven resources of 1.34 million ounces of gold. Sabina will employ both shovel-and-truck open-pit and underground mining methods. The expected mine life is nearly 12 years, with average production estimated at 198,000 ounces of gold. Pre-production capital expenditures are expected to total \$610 million, \$55 million of which was spent in 2018 on port construction, pre-development, earthworks, and the purchase of heavy equipment. Construction is expected to start in 2023, with first gold in 2025. Further exploration in other areas of the Black River Gold Project is ongoing.

Back River Renewable Energy Centre

The proposed project would allow Sabina Gold & Silver Corp. to install 13 wind turbines, solar panels, and a battery storage system. The project would reduce the amount of fuel required at the mine and cut emissions at the Black River project by 50%.

Grays Bay Road and Port Project

The Grays Bay Road and Port Project consists of a 227-kilometre, all-season road that links the northern terminus of the Tibbitt-Contwoyto winter road to a deep-water port at Grays Bay on the Northwest Passage. The road will encourage development of resource projects by increasing the ease with which companies can export products from remote locations in the territory. Previous funding received through Transport Canada's National Corridor Fund, along with a recently agreed upon loan from Nunavut Tunngavik Inc., will allow the Kitikmeot Inuit Association to carry out pre-construction work and get the project shovel ready. Capital expenditures, which were initially estimated at \$500 million, have increased to \$550 million over the last two years.

Mary River Expansion Project (phases 2 and 3)

The expansion proposal of phases 2 and 3 of the Mary River Mine, which currently produces six million tonnes of iron ore annually, looks to raise production to 18 million tonnes. Phase 2 of the project originally called for the construction of a railway from the Mary River Mine Site to the Port Site, along with a second ore dock at the port. After that proposal was rejected by the federal government on environmental grounds in late 2022, project owner Baffinland Iron Mines announced it would revive a previously approved, and more expensive, plan to build a railway south of the mine to Steensby port.

TRADE REQUIREMENTS

The construction and operation of a mine often faces challenges in attracting and training skilled workers. This is especially problematic for mines located in remote locations. Companies are reporting that skilled workers are becoming increasingly difficult to find. This problem is being accentuated by an aging workforce and a wave of retirements.

The development of the mining sector in Canada's territories will require key construction trades and occupations that are common to engineering and industrial work, and which are in high demand in other industries and provinces. The demand for these construction trades has grown dramatically and steadily for at least a decade. Although growth is expected to slow with some projects postponed, industry groups and governments will need to remain focused on recruiting and training plans.

The BuildForce LMI tracking system is limited to broad occupational classifications. The requirements of mine construction and related resource projects have traditionally focused on the following trades and occupations:

- boilermakers
- carpenters
- drillers and blasters
- electricians
- heavy equipment operators
- heavy-duty equipment mechanics
- ironworkers and structural metal platework fabricators and fitters
- pipefitters
- trades helpers and labourers
- truck drivers
- welders
- construction estimators
- construction managers
- contractors and supervisors

The estimated capital cost for each project and additional information on occupation requirements associated with heavy construction inform our estimate of trades requirements. Importantly, it is assumed that all announced projects will proceed as scheduled.

Tables 3 and 4 provide estimates of trades requirements that are generated by the construction of the various projects from 2023 to 2027. The total number of workers required for all projects by territory is shown in Table 3. The timeframes for construction of the projects in the territories as a whole are shown in Table 4.

The total number of trades tracked by BuildForce required for the projects as a whole in this time period is estimated at 4,027 workers. The largest number of requirements is for heavy equipment operators at 1,357; trades helpers and labourers follow at 955.

Table 3: Construction trades demand by territory, 2023–2027

	Northwest Territories	Yukon	Nunavut	Total
Boilermakers	20	7	20	47
Construction millwrights	7	4	6	17
Crane operators	57	16	60	133
Drillers and blasters	62	30	57	149
Electricians	30	47	6	83
Heavy-duty equipment mechanics	58	57	35	150
Heavy equipment operators (except crane)	564	282	511	1,357
Ironworkers, structural metal and platework fabricators and fitters	38	26	30	94
Sheet metal workers	2	0	2	4
Steamfitters, pipefitters, and sprinkler system installers	6	3	6	15
Trades helpers and labourers	365	407	183	955
Truck drivers	98	34	99	231
Welders	41	11	44	96
Construction managers	112	173	24	309
Construction estimators	51	38	39	128
Contractors and supervisors	99	111	49	259
Total	1,610	1,246	1,171	4,027

Source: Yukon Economic Development, NWT Bureau of Statistics, Nunavut Bureau of Statistics, company websites, and BuildForce Canada

Table 4: Construction trades demand (all projects), 2023–2027

All Projects	2023	2024	2025	2026	2027
Boilermakers	11	13	12	5	6
Construction millwrights	4	5	4	2	2
Crane operators	30	36	35	13	19
Drillers and blasters	34	42	39	16	18
Electricians	21	27	20	12	3
Heavy-duty equipment mechanics	36	45	38	19	12
Heavy equipment operators (except crane)	310	381	357	145	164
Ironworkers, structural metal and platework fabricators and fitters	22	27	24	11	10
Sheet metal workers	1	1	1	0	1
Steamfitters, pipefitters, and sprinkler system installers	3	4	4	2	2
Trades helpers and labourers	231	293	239	124	68
Truck drivers	52	63	62	23	31

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Table 4: Construction trades demand (all projects), 2023–2027 (continued)

All Projects	2023	2024	2025	2026	2027
Welders	21	26	26	9	14
Construction managers	77	100	75	44	13
Construction estimators	30	37	33	15	13
Contractors and supervisors	62	80	65	34	18
Total	945	1,180	1,034	474	394

Source: Yukon Economic Development, NWT Bureau of Statistics, Nunavut Bureau of Statistics, company websites, and BuildForce Canada

CONCLUSIONS

The labour requirements for projects in the Northwest Territories, Yukon, and Nunavut add to the complexity of demand requirements for construction trades and occupations across Canada.

While some of the proposed resource-development projects in the territories have been postponed or are pending final investment decisions, meeting labour demands for ongoing resource projects and replacing an aging workforce will require a mix of short- and long-term mobility options. These include both the movement of workers into remote locations, and more long-term additions of young and permanent workers to address an aging workforce. In the short to medium term, the industry will need to increase the recruitment and training of new workers drawn from the populations

of the Northwest Territories, Yukon, and Nunavut to meet anticipated future labour force requirements. The use of skilled workers from neighbouring provinces or from other industries can aid as a supplement. The development of additional major projects would increase labour demands and enhance the need for the territories to attract more 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 economic outlook and industry major-project assumptions. Any changes to these assumptions present risks and potentially alters anticipated market conditions.

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