



# CANADA'S TERRITORIES

HIGHLIGHTS  
2017–2026

## CONSTRUCTION TRADES OUTLOOK FOR MAJOR PROJECTS IN CANADA'S TERRITORIES

Construction has been a leading source of employment growth in Canada for more than a decade. Rising construction requirements – driven by an extended resource expansion – alongside steady population growth and significant infrastructure investments, has added half a million construction jobs over the past 15 years. The pace of growth slowed after 2013, as a sharp decline in the price of oil and other commodities slowed resource development expansion, cancelling or delaying plans for numerous oil and gas and mining-sector projects across Canada, including the territories.

Looking forward, activity is expected to soften across most provinces, as a projected decline in new residential activity coincides with the winding down of various major projects. Total projected construction employment in Canada is mostly unchanged across the 2017–2026 scenario period; down 2 percent in 2026 compared to 2016, with larger declines anticipated in residential (down 7 percent) that are partially offset by moderate gains in non-residential (up 3 percent).

Despite slower employment growth, national demographic trends may add recruiting challenges for northern regions, which often rely heavily on workers from other provinces to meet peak major project labour requirements. As population growth slows, fewer youth are available to enter the workforce as construction retirements increase over the long term. An estimated 248,000 construction workers, or 21 percent of the 2016 workforce, are expected to retire over the next decade and this represents a significant loss of skilled workers.

The BuildForce labour market information (LMI) system has been tracking these developments and assessing the impacts on labour markets for 34 construction trades and occupations in each province. Large construction projects regularly drive up labour requirements, creating peak demands and recruiting challenges for skilled trades and occupations.

While BuildForce 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 a number of 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. The purpose of this document is to identify key projects and provide estimates of construction trades requirements for these projects.

The next section of this report provides some background on the economies in the three territories. The third section identifies the major projects currently being tracked. The fourth section provides estimates of the trades requirements for the projects.

## BACKGROUND

The Northwest Territories has the largest economy in the North and fared reasonably well over the last three years. While the Yukon economy contracted rather sharply in 2015, following a modest decline in the previous year, Nunavut's economy, which has a history of volatility, was relatively stable over the last two years.

Table 1 shows the level and percent change in real gross domestic product by region for the period 2009 to 2015.

**Table 1: Real GDP of the territories (millions of 2007 dollars\*)**

	2009	2010	2011	2012	2013	2014	2015
<b>Yukon</b>	<b>\$ 2,127</b>	<b>\$ 2,213</b>	<b>\$ 2,318</b>	<b>\$ 2,407</b>	<b>\$ 2,442</b>	<b>\$ 2,438</b>	<b>\$ 2,291</b>
		4.0%	4.7%	3.8%	1.5%	-0.2%	-6.0%
<b>Northwest Territories</b>	<b>\$ 3,775</b>	<b>\$ 3,867</b>	<b>\$ 3,524</b>	<b>\$ 3,511</b>	<b>\$ 3,612</b>	<b>\$ 3,803</b>	<b>\$ 3,854</b>
		2.4%	-8.9%	-0.4%	2.9%	5.3%	1.3%
<b>Nunavut</b>	<b>\$ 1,407</b>	<b>\$ 1,656</b>	<b>\$ 1,745</b>	<b>\$ 1,784</b>	<b>\$ 1,969</b>	<b>\$ 1,936</b>	<b>\$ 1,961</b>
		17.7%	5.4%	2.2%	10.4%	-1.7%	1.3%

Source: Statistics Canada

\* \$2007 millions indicates that the investment values are in year 2007 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 value) due to increases in prices.

These divergent patterns are primarily due to the differing development paths of the mining industry across the territories. In the Northwest Territories, the diamond mining sector has reached maturity and production declines can be expected in the future. The Diavik and Ekati mines are expected to be shut down over the next decade, but production from the new Gahcho Kué mine, which will begin soon, will not be a sufficient offset. In the Yukon and Nunavut, several proposed mine projects have been postponed, as current market conditions have delayed final approvals.

## PLANNED MAJOR CONSTRUCTION PROJECTS IN THE TERRITORIES

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

Two major construction projects were recently completed: the Gahcho Kué Diamond Mine in the Northwest Territories,

which is on track to reach full commercial operation in the first quarter of 2017, and construction of a 140-kilometre-long highway linking the Town of Inuvik with the Hamlet of Tuktoyaktuk (completed in April 2016).

Table 2 lists the major projects for the territories, including the estimated capital costs associated with the construction phase, as well as the anticipated start and end dates, if available. The construction capital cost is used to estimate trades requirements. Under current market conditions with lower commodity prices and uncertain global demands, a number of known projects being tracked have been postponed, including Nechalacho (Thor Lake) Project, Prairie Creek, Yellowknife City Gold Project, NICO Project, Pine Point Mine, Whitehorse Copper, Victoria Gold, Brewery Creek, Carmacks Copper, Mary River project and Meliadine Gold mine. Pending final development approvals, the start and end dates for these projects are unknown.

**Table 2: Major projects and capital costs**

	PROJECTS	CONSTRUCTION		
		Start year	End year	Cost (millions)
<b>Northwest Territories</b>	Giant Mine Remediation Project	2020	2030	\$ 900
	Nechalacho (Thor Lake) Project	---	---	\$ 902
	Prairie Creek	---	---	\$ 244
	NICO Project	---	---	\$ 210
	Yellowknife City Gold Project	---	---	\$ 193
	Pine Point Mine	---	---	\$ 140
	<b>Total</b>			<b>\$ 2,589</b>
<b>Yukon</b>	Casino Mine	2020	2023	\$ 1,718
	Eagle Gold	2018	2019	\$ 370
	Coffee Gold	2018	2019	\$ 317
	Victoria Gold	---	---	\$ 400
	Carmacks Copper	---	---	\$ 264
	Brewery Creek	---	---	\$ 200
	Whitehorse Copper	---	---	\$ 5
	<b>Total</b>			<b>\$ 3,274</b>
<b>Nunavut</b>	Meliadine Gold mine	---	---	\$ 911
	Mary River project	---	---	\$ 740
	<b>Total</b>			<b>\$ 1,651</b>

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

## Giant Mine Remediation Project, Northwest Territories

The Giant Mine was a large gold mine located on the Ingraham Trail just outside of Yellowknife. Remediation work will remove material contaminated with arsenic and asbestos. The remediation plan requires regulatory approval, with construction activity work not likely to commence before 2020. Estimated capital costs are \$900 million.

## Nechalacho (Thor Lake) Project, Northwest Territories

The Nechalacho Rare Earth Elements Deposit, located about 100 kilometres southeast of Yellowknife at Thor Lake, is now inactive due to significantly reduced investor interest for new rare earths development projects. The company is completing the permit process under the Mackenzie Valley Resource Management Act. Estimated capital costs are \$902 million. Under current market conditions the project has been postponed.

## Prairie Creek Mine, Northwest Territories

A new technical report on the Prairie Creek Mine updated the average annual production projection to approximately 60,000 tonnes of zinc concentrate and 55,000 tonnes of lead concentrate with an initial mine life of 17 years. Capital costs are estimated at \$244 million, but the project is currently postponed.

## NICO Project, Northwest Territories

The NICO deposit, located 150 kilometres northwest of Yellowknife, contains open-pit and underground proven and probable mineral reserves totalling 33 million tonnes that will support mining for a minimum 21-year mine life. Estimated capital costs are \$210 million, but the project is currently postponed.

## Yellowknife City Gold Project, Northwest Territories

The Yellowknife City Gold Project is located in the South Mackenzie Mining District near Yellowknife. The company is conducting a 27,000 metre drill program that is expected to continue through 2017. The project is estimated at \$193 million with a two-year mine construction period once approved. The mine is expected to process approximately 857,000 to 1,225,000 tonnes of ore per year. This project is currently postponed.

## Pine Point Mine, Northwest Territories

The Pine Point Mine is located west of Fort Resolution on the south shore of Great Slave Lake. The zinc project was purchased in late 2016 by Darnley Bay Resources Ltd. The company is expected to undertake a new Preliminary Economic Assessment. Project capital costs are estimated at \$140 million. This project is currently on hold pending a new economic assessment.

## Casino mine, Yukon Territories

The Casino Mining Corporation, a wholly-owned subsidiary of Western Copper and Gold, is planning to build what would be the Yukon's biggest mine about 400 kilometres northwest of Whitehorse. Once in operation, the mine is expected to produce more than 400,000 ounces of gold annually and more than 200 million pounds of copper with a mine life of about 22 years. The construction of an open-pit mine is estimated at \$1.7 billion with an expected start date of 2020. The project is currently under review by the Yukon Environmental and Socio-economic Assessment Board.

## Eagle Gold Project, Yukon Territories

Victoria Gold Corp. owns the Eagle Gold Project, an open-pit mine that will employ cyanide heap leaching techniques to extract gold. The company is currently updating its feasibility study and is continuing an exploration program. Estimated capital costs for construction are \$370 million. The project has a qualified feasibility study and is fully permitted with mining and water licenses. The 18-month construction period is expected to start in 2018.

## Coffee Gold Project, Yukon Territories

Goldcorp Inc. owns the Coffee Gold Project, approximately 130 kilometres south of Dawson City. Coffee Gold is a proposed open-pit, heap leach gold mine. A Preliminary Economic Assessment was conducted in 2014 and the company is currently completing Feasibility and Environmental Baseline studies. Goldcorp hopes to begin construction in 2018. Capital costs are estimated at \$317 million.

## Victoria Gold, Yukon Territories

Victoria's Eagle Gold Project is located 375 kilometres north of Whitehorse. Eagle is an open-pit mine and will operate as a drill, blast, shovel and haul operation, with a nominal rate of 29,500 tonnes per day of ore and mine life of nine years. The project is expected to produce 200,000 ounces of gold annually once in operation. Initial capital costs are estimated at \$400 million. This project is currently postponed.

## Carmacks Copper, Yukon Territories

Copper North Mining Corp. holds the Carmacks Copper project, located 198 kilometres north of Whitehorse. The Project is progressing to a feasibility study for the early production of copper, gold and silver from proposed leach operations. A recently completed Preliminary Economic Assessment put capital costs at \$264 million, with construction to extend over a two-year period. The mine is expected to have an operating life of seven years. This project is currently postponed until overall market conditions improve.

## Brewery Creek, Yukon Territories

Golden Predator Mining Corp. holds the Brewery Creek project, a past-producing heap leach gold mine. The company has conducted a Preliminary Economic Assessment and the next steps are advancing the project through feasibility and permitting. Construction costs are estimated at \$200 million and will extend over a two-year period, but the project is postponed.

## Whitehorse Copper Project, Yukon Territories

The Whitehorse Copper mine closed in 1982 and left behind 10 million tonnes of tailings. Eagle Whitehorse plans to truck ore from the mine to the port of Skagway to be shipped to market. The world price for magnetite has fallen sharply, however, and the project is postponed until market conditions improve. Capital construction costs are estimated at \$5 million, with an expected six-to-seven-month construction period.

## Meliadine mine, Nunavut Territory

The Meliadine gold project is located 25 kilometres northwest of Rankin Inlet. Earlier in 2015 the Nunavut Impact Review Board gave Agnico Eagle a Project Certificate. Initial capital costs are estimated at \$911 million and sustaining capital costs at \$357 million. The mine is expected to have a production life of nine years, but the project is currently postponed.

## Mary River project, Nunavut Territory

The Mary River project, located on North Baffin Island, is one of the largest and richest undeveloped iron ore projects in the world. The proposed project involves conventional open-pit mining of iron ore with a projected 21-year lifespan. Recently the company proposed building a railway to transport ore from the mine to Milne Inlet, and this has delayed the submission of its Phase 2 environmental impact statements. Construction costs are estimated at \$740 million, but a construction schedule is unknown at this time.

## 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 and this problem is being accentuated by an aging workforce and a wave of retirements from the industry.

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 in other industries and provinces. The demand for these construction trades has grown dramatically and steadily for at least a decade and, while 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
- construction estimators
- construction managers
- contractors and supervisors
- drillers and blasters
- electricians
- heavy equipment operators
- heavy-duty equipment mechanics
- ironworkers and structural metal and plate fabricators and fitters
- plumbers, steamfitters and pipefitters
- trade helpers and general labourers
- truck drivers
- welders

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

Tables 3 and 4 provide estimates of trades requirements that are generated by the construction of the various projects over the next few years. The total number of workers required for all projects by territory is shown in Table 3. The time pattern for the projects in the territories as a whole is shown in Table 4.

The total number of trades tracked by BuildForce<sup>1</sup> required for the projects as a whole is 2,719 workers. The largest number of requirements is for heavy equipment operators at 1,188, followed by 425 trades helpers and labourers and 230 truck drivers.

<sup>1</sup> The BuildForce LMI system tracks labour market conditions for 34 trades and occupations. This group includes on-site workers and accounts for approximately 75 percent of the full construction workforce. Excluded from this group are office workers, engineers, office managers, etc.

**Table 3: Construction trades demand by territory**

	Northwest Territories	Yukon	Nunavut	Total
Boilermakers	13	34	0	46
Construction estimators	24	65	0	90
Construction managers	15	41	0	57
Construction millwrights and industrial mechanics	4	10	0	14
Contractors and supervisors	31	82	0	113
Crane operators	38	102	0	140
Drillers and blasters	36	96	0	132
Electricians	4	10	0	14
Heavy equipment operators (except crane)	323	864	0	1,188
Heavy-duty equipment mechanics	22	59	0	81
Ironworkers and structural metal fabricators	19	51	0	70
Sheet metal workers	1	3	0	4
Steamfitters, pipefitters and sprinkler system installers	4	10	0	14
Trade helpers and labourers	116	309	0	425
Truck drivers	63	168	0	230
Welders and related machine operators	28	74	0	101
<b>Total</b>	<b>740</b>	<b>1,979</b>	<b>0</b>	<b>2,719</b>

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

**Table 4: Construction trades demand (all projects)**

All projects	2017	2018	2019	2020	2021	2022-26	Total
Boilermakers	0	5	5	8	8	21	46
Construction estimators	0	9	9	15	15	41	90
Construction managers	0	6	6	10	10	26	57
Construction millwrights and industrial mechanics	0	1	1	2	2	6	14
Contractors and supervisors	0	12	12	19	19	51	113
Crane operators	0	15	15	24	24	64	140
Drillers and blasters	0	14	14	22	22	60	132
Electricians	0	1	1	2	2	6	14
Heavy equipment operators (except crane)	0	123	123	201	201	540	1,188
Heavy-duty equipment mechanics	0	8	8	14	14	37	81
Ironworkers and structural metal fabricators	0	7	7	12	12	32	70
Sheet metal workers	0	0	0	1	1	2	4

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**Table 4: Construction trades demand (all projects; continued)**

All projects	2017	2018	2019	2020	2021	2022–26	Total
Steamfitters, pipefitters and sprinkler system installers	0	1	1	2	2	6	14
Trade helpers and labourers	0	44	44	72	72	193	425
Truck drivers	0	24	24	39	39	105	230
Welders and related machine operators	0	10	10	17	17	46	101
<b>Total</b>	<b>0</b>	<b>283</b>	<b>283</b>	<b>459</b>	<b>459</b>	<b>1,236</b>	<b>2,719</b>

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

## CONCLUSIONS – LABOUR REQUIREMENTS IN THE NATIONAL CONTEXT

Following about two decades of almost uninterrupted expansion, employment across most regions has declined from recent peak levels, with slower growth expected over the long term. The 2017–2026 outlook scenario reveals several common themes:

- Commercial building construction continues to rise, but the pace of growth slows.
- Institutional building investment is modest or lower from 2017 to 2026, as government spending is restrained.
- Industrial buildings cycle up and down with moderate changes across the scenario period in most provinces.
- Maintenance work (heavy industrial and non-residential buildings) is on a steady, but moderate, increase across the decade.
- The timing of new major projects is varied and irregular, and these changes drive most of the regional volatility in non-residential employment:
  - Across the territories, several resource development projects have been postponed as current market conditions have delayed final approvals.
  - The completion of projects in Newfoundland and Labrador return employment requirements to the pre-expansion levels of the early 2000s.
  - In Alberta, major industrial and engineering-related employment remains on a downward trend, but the pace of declines slows over the near term. Growth resumes across all sectors after 2023 with renewed oil sands investment.
  - In British Columbia, proposed LNG (liquefied natural gas) facilities, pipelines and mining projects drive labour demands up 33 percent to an expected peak in 2021.

- A smaller rise is expected in Saskatchewan, with fluctuations across the scenario period as some projects wind down and new projects start. Employment is sustained near current levels across most of the decade.
- Utilities, public transportation and other infrastructure projects add to employment opportunities across most provinces, with an added boost by federal government's long-term infrastructure plan.
- Sustaining capital<sup>2</sup> and industrial maintenance<sup>3</sup> expenditures are expected to rise steadily across the period, becoming a more prominent source of construction jobs later in the decade.

The expected changing mobility patterns across provinces to meet major project requirements and the challenges of an aging workforce continue to be key themes emerging from the outlook scenario:

- **Slower Growth:** The slowdown in the pace of resource expansion has resulted in significant employment declines in some provinces. Although the largest losses have already occurred, near-term growth in both non-residential and residential markets is likely to remain weak.
- **Next wave of non-residential major projects:** While the long-term outlook weakens, the anticipated start of major non-residential projects suggests increased demands in some provinces over the near term to 2021, with worker mobility needed to meet peak requirements.
- **Demographics conundrum:** The coming wave of retirements prognosticated for decades has materialized and only intensifies over the next decade, with annual year-to-year increases in expected workforce retirements raising recruiting needs, even in provinces where economic growth and construction activity have slowed. Age demographic trends under slower population growth limit the pool of youth available to enter the workforce. The task of attracting new young workers to construction is likely to become increasingly more difficult as many industries face similar challenges related to replacing an aging workforce.

<sup>2</sup> **Sustaining capital** refers to the periodic addition (or replacement) of capital, which is required to maintain operations at existing levels.

<sup>3</sup> **Maintenance** refers to the process of maintaining equipment, including routine or on-stream work and turnaround/shutdown work, where an operating unit may be temporarily taken out of production.

The labour requirements for projects in the Northwest Territories, Yukon and Nunavut add to the complexity of demand requirements for construction trades and occupations. Meeting labour demands for ongoing resource projects and replacing an aging workforce mean that industry needs to continue monitoring and investing in the recruiting and training of new workers. These are skilled jobs with high qualifications and compensation that will be attractive to young Canadians, but this workforce is limited. Some new workers can be drawn from the populations of the Northwest Territories, the Yukon and Nunavut, while others will have to be drawn to the territories from outside the local construction industry.

While many of the known resource development projects have been postponed, meeting labour demands will still require a mix

of short- and long-term mobility options that include both the movement of workers into remote northern locations and more long-term additions of young and permanent workers to address an aging workforce.

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 demand requirements reflect the current long-term economic outlook and industry major project assumptions. Any changes to these assumptions presents risks and potentially alters anticipated market conditions.

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