

# Industry PROFILE



Adding value to NWT development

## CONSTRUCTION

The construction industry (including architects and engineers) accounted for 7 percent of the NWT's Gross Domestic Product in 2004 and 8% of territorial jobs in 2004, employing an average of more than 1,500 per month. Construction is also one of the last sectors offering the real possibility of advancing from unskilled, entry-level spots to highly paid senior positions paying \$100,000-plus – beginning with only a Grade 10 education.

### CONSTRUCTION INDUSTRY TODAY

According to Industry Canada, approximately 94% of the construction industry is Canadian-owned – a far higher percentage than any other large industry in the country. The vast majority of those firms are small: more than 90% have fewer than 20 employees, and approximately 75% report annual revenues of less than \$250,000.

Despite the relatively small firm size, according to Statistics Canada, the national construction industry has a larger impact on the economy than most other industries by virtue of its greater multiplier effect. In other words, the fact that the industry employs a relatively large number of domestic goods and labour means that it generates better-than-average spin-off effects.

A recent study by the Market Research Corporation found that every new Canadian construction job creates another three in the national economy.

Informetrica estimates that every \$1-million invested in nonresidential construction, alone,

generates 15 to 20 person-years of employment. The NWT Statistics Bureau's input-output model estimates that every construction job creates as many as 1.44 jobs overall in the territorial economy, and every dollar contributed to GDP generates a total of up to \$1.38.

The NWT Construction Association confirms that the degree of Canadian, and indeed territorial, ownership is also very

high here. Moreover, the percentage of small companies, if anything, is much higher than the national average, although several that started out with little more than a tool box and a pickup truck years ago are now well-established construction businesses employing dozens of workers on jobs throughout the NWT and, in many cases, Nunavut.



Source: ITI - GNWT, Housing Construction

In fact, a few have even set up shops abroad. In the early 1990s, for example, Clark Builders erected an entire village in Yakutsk, Siberia based on plans developed by FSC of Yellowknife. This included more than 40 houses, a school, nursing station and power plant – all of them fashioned after existing facilities in the NWT. Clark has also constructed an airport, a hotel and housing of various kinds in Russia, Japan and China. Adco North has applied its experience in the NWT to install power stations in places like Chile and the Grand Cayman Islands.

Conversely, economic prospects are now attracting some major southern Canadian construction firms, such as Ledcor and SNC-Lavalin, to the north – joining Canada’s largest construction firm, PCL Constructors, which first ventured north in the 1940s.

Looking ahead, with the expected construction of several precious and base metal mines, and continuing transportation infrastructure investments, the NWT construction industry appears destined to continue booming for several more years, especially if the \$7-billion Mackenzie Valley Pipeline proceeds before the end of the decade.



Source: ITI - GNWT, Construction Worker

## CANADA

Nationally, the industry's rapid growth in 2000-2004 slowed somewhat in 2005, with a slight reduction in residential only partially offset by strengthening nonresidential and engineering construction.

Construction's contribution to real GDP grew by only 2.9% in 2005, and is expected to dwindle to 1.2% in 2006 and 0.9% next year, with the petroleum and hydroelectric sectors remaining strong, and the mine and transportation infrastructure sectors likely to expand.

Construction has led the economy in job creation, averaging nearly 5% per year since 1999, but with the shift from residential to more capital-intensive forms of construction, Infometrica anticipates employment will slow to a little less than 1% annually beginning this year. However, construction accounts for 6.2% of total employment, or one in every 16 Canadian jobs.

Construction GDP grew in all provinces except New Brunswick and Saskatchewan in 2000-2004, with central Canada (reflecting a strong residential sector), Alberta, B.C. and the Territories experiencing the greatest expansion. Growth in western Canada will be strongest in the medium term, while nonresidential construction will likely support steady central Canadian growth, and relatively slow growth in Maritime households indicate downturns or slow growth in the region.

The accuracy of these projections assume some commencement of some major capital projects, including development of transportation and B.C. Olympics infrastructure; they contain no allowance for two major contending pipeline and gas development projects in the Arctic.

Construction employment will likely be concentrated in Ontario, Quebec, B.C. and Alberta – which collectively account for 89% of all Canadian construction jobs – for the second half of the decade.

## EXPORT OPPORTUNITIES

Most construction companies still rely on the local or national market. Rather than exporting design and construction expertise, prefabricated systems and construction components, Canada exports raw materials.

However, this is changing, both in Canada and the NWT. Construction companies have developed efficient, innovative and reliable designs with extraordinary depth that could be emphasized in international marketing efforts, including:

- Wood-frame construction;
- Cold-weather construction and energy efficiency;
- Design and construction of hydroelectric power projects, mines, petroleum installations, etc;
- Energy-efficient residential construction;
- Design and construction of intelligent building systems;
- Sustainable demolition and drywall recycling;
- Repair and renovation of salt-damaged structures;
- Environmental cleanup of hazardous waste, lead paint disposal, etc. and;
- Public-Private Partnership approach to infrastructure needs.

## NORTHWEST TERRITORIES

Beginning in the 1960s, the territorial and federal governments embarked on a massive expenditure program that lasted some 30 years. During this period, they invested billions of dollars in new and refurbished community infrastructure, including houses, schools, health and recreational facilities, as well as airports, roads and communications systems.

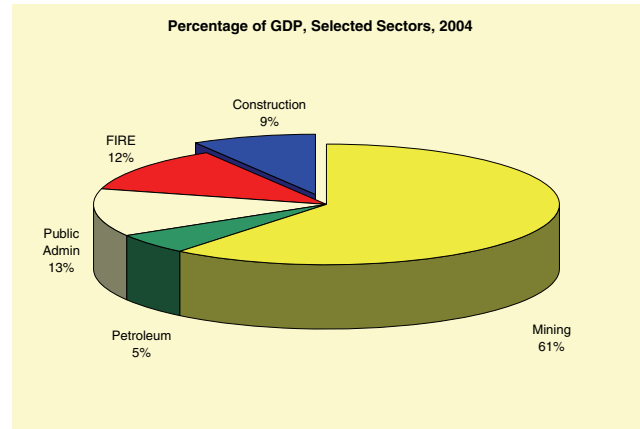
Over the 1960s to 1990s the mineral industry went through some significant investment cycles. During the late 1970s, for example, millions were being invested in oil and gas exploration. The same period saw the development of Pine Point Mines, the extension of the rail line into the NWT, the Norman Wells/Zama Lake oil pipeline and development of the Colomac Mine.

With the impending division of the NWT, and depressed commodity prices, investment took a downturn during the late 1980s. Fortunately, this downturn was relatively short-lived. Mineral exploration and eventual mine development rose sharply following the discovery of diamonds at Lac de Gras north of Yellowknife in 1991. Later in the decade, rising petroleum prices attracted renewed interest in oil and gas exploration near Fort Liard and farther north in the Sahtu and Mackenzie Delta areas. Private nonresidential construction as a percentage of GDP rose by 228%, to \$551-million in 1998 from \$168-million in 1992, and the value of all construction activity reached almost a third of GDP in 1998, as compared to 16% in 1992.

In 2004, the construction industry contributed \$259.7-million, or 7.0% to the NWT's GDP. Adding architectural and engineering services would make construction the territory's third largest private industry, behind mining.

## Employment

The construction industry employed about 1,800 workers in 2005 (about 8% of the total workforce) and paid average weekly wages in excess of \$900.



Source: NWT Bureau of Statistics



Source: NWT Bureau of Statistics

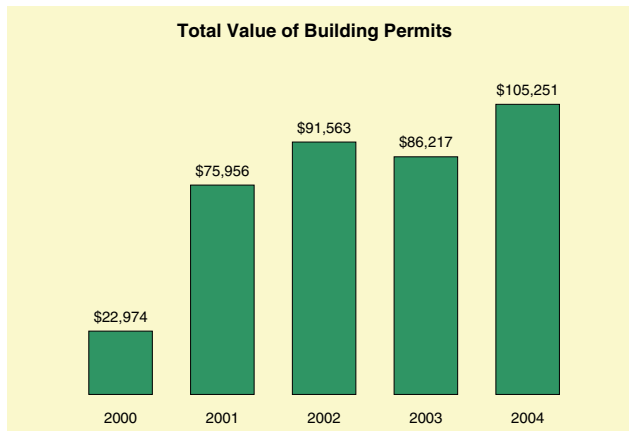
### Building Permits

The total value of all building permits climbed by 22.1% in 2004 to \$105.2-million from \$86.2-million in 2003. The value of permits for commercial buildings more than doubled to \$4.6-million from \$2.25-million the previous year.

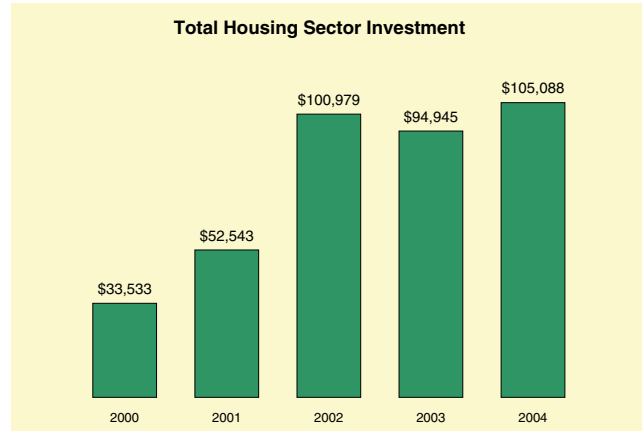
Total housing investment rose by 10.7% in 2004, to \$105-million from \$95-million in 2003, with investment in single-family dwellings up by 5.5% to \$32.4-million from \$30.7-million in 2003.

### Total Investment

Capital expenditure intentions indicate that private and public investment in construction will grow by 11% in 2006 to \$1.7-billion, versus \$1.5-billion preliminary actual figures for 2005. The anticipated increase for 2006 reflects a 13.3% rise in private investment and a 6.6% decline in public investment.



Source: NWT Bureau of Statistics



Source: NWT Bureau of Statistics

Private and Public Construction Investment (\$million)				
		2005		
	2006	Preliminary	2004	2003
Investment	Intentions	Actuals	Actuals	Actuals
Total Construction	1,380	1,184	918	678
Private Construction	1,247	1,038	796	565
Public Construction	133	146	122	114
% Annual Change:				
Total Construction	16.5%	28.9%	35.4%	
Private Construction	20.1%	30.4%	41.0%	
Public Construction	-9.0%	19.7%	7.5%	

Source: NWT Bureau of Statistics

## FUTURE PROSPECTS

Several major projects are expected to bolster the construction sector in the near and medium-term future.

The Gahcho Kué diamond mine, a joint venture between De Beers, Mountain Province Diamonds, and Camphor Ventures approximately 300 km northeast of Yellowknife at Kennady Lake is under assessment by the Mackenzie Valley Environmental Impact Review Board, and is expected to begin construction within a year.

Canadian Zinc is considering reestablishing the winter road or building a new all-weather access to its Prairie Creek mine in the south Mackenzie Mountains near Nahanni Butte.

Gold projects by Tyhee NWT Corporation at Yellowknife and Seabridge Gold at Courageous Lake also appear promising, as does Fortune Minerals' Nico gold-cobalt-bismuth deposit 160 kilometres northwest of Yellowknife near the Snare hydro complex.

Upgrading and improvements to NWT highways are expected to add new opportunities.

In 2002, the GNWT's Corridors for Canada proposal secured \$130-million from the federal Strategic Infrastructure Fund. A second proposal, Corridors for Canada II calls for another \$162-million to improve road and air transport infrastructure throughout the territory. In addition,

the GNWT has developed a proposal which calls for \$700-million to extend the Mackenzie Highway from Wrigley to Tuktoyaktuk – which the federal government proposed to do in 1958 but abandoned the plan in 1977, when the Berger inquiry recommended 10-year moratorium on oil and gas development in the North. Called Connecting Canada, this proposal has been endorsed by the Council of the Federation and the Canadian Construction Association (at the behest of the NWT Construction Association).

Another possible major development is hydropower. The NWT hydroelectric generation potential is massive, with as much as 11,000 megawatts in undeveloped sites. Preliminary studies show that the NWT has the potential to generate more electricity than James Bay or Churchill Falls using modern run-of-the-river technology that eliminates the need for large dams and massive flooding. Future hydro development prospects include Upper Snare River, Taltson, Great Bear River and Lac La Martre River.

Construction of the \$7-billion-plus Mackenzie Valley Pipeline is expected to be complete by 2010. Construction of the pipeline itself will be done mainly by imported specialty crews, but there will be spin-off opportunities for local contractors. The pipeline will also stimulate additional field development (at an estimated cost of \$4.3-billion).



Source: Adobe

## INGREDIENTS FOR SUCCESS

The construction sector will be examined in terms of six key ingredients for success:

- Natural Resources
- Human Resource Development
- Capital and Investment
- Infrastructure
- Markets
- Regulations and Taxation

By identifying opportunities and constraints for each of these ingredients and developing a common understanding of the sector, government, industry and communities can address key factors to facilitate development of the sector.



Source: Adobe

## NATURAL RESOURCES

Mining has surpassed governments as the main source of business for the NWT construction sector, which has three main segments: industrial (mines, power plants, etc.), commercial (office buildings, schools, etc.) and residential. All of these can be subdivided into initial construction versus maintenance and renovation.

The development and final building of a typical diamond or gold mine not only creates hundreds of industrial construction jobs initially, but also spawns numerous ongoing commercial and residential jobs over its life-span. In the first place, the mines themselves require continual maintenance and periodic upgrading. Second, remote mine sites are akin to small towns and require much the same kinds of construction related services.

New mines also stimulate further business activity in neighbouring communities, and hence a greater need for more commercial office space while their employees increase demand for housing, recreational facilities and myriad of other consumer goods and services.

Finally, increased employment and the population growth in impacted communities creating new demand for goods and services, and expanded business investment.

## HUMAN RESOURCE DEVELOPMENT

Generally speaking, in the current booming economy, most NWT general contractors and major subcontractors are desperate for certified tradespeople – especially carpenters, electricians, plumbers and gas fitters – to the point where they are having to turn away more work for lack of human resources.

The biggest problem for many smaller companies – like individual homebuilders and renovators – is securing reliable unskilled or semiskilled help.

The problem for both is often exacerbated by the fact that all of these companies can't compete with mine or government wages and/or benefits.

The construction industry typically consists of general contractors who compile bids for work based on plans and specifications prepared for owners (e.g. mining companies or governments) by architects and engineers (collectively known as “consultants”). The generals, in turn, base their bids on “prices” they receive from subcontractors (also known as trade contractors).

The general contractors are responsible to the owners for completion of the jobs they win. In commercial construction, the generals provide the carpenters and others equipment required to erect the project's main structure, then oversee the work

of subcontractors who install the electrical and mechanical (plumbing and heating, etc.) systems. The generals also employ or subcontract drywallers, painters and flooring specialists, etc.

By its very nature, construction is a “stop-and-go” industry, often with significant gaps between completing one job and starting the next.

Consequently, the level and type of demand for labour varies constantly with the volume and type of work at hand. This cyclical phenomenon is smoothed considerably in major Canadian centres by the fact that workers can move easily among employers, and the fact that firms can move more easily to other towns to secure work, while using the same employees.

This occurs to a lesser extent in the NWT, and most generals and subcontractors make every conceivable effort to keep their best workers on the payroll even during periodic lulls so they'll be available as soon as work resumes.

Ultimately, however, virtually all NWT firms have no choice but to lay off many employees at the end of each project and hire or rehire for the next.



Source: ITI - GNWT, Batching Concrete in Behchokò

Given the reality of our small population and relatively tighter supply of skilled workers, contractors frequently recruit from places of high unemployment in southern Canada, notably the Maritimes, parts of Quebec and some Prairie regions. (Many, if not most, of the advertisements for skilled workers appearing in local papers are intended not to attract skilled people from out of town, but to lure them away from local competitors.)

The construction industry has tremendous potential career opportunities, especially in the NWT, where education levels are relatively very low.

Some 3700 territorial young people aged 10 to 14 will be looking for work over the next five years, plus another 3500 aged 5 to 9 will enter the labour force after them. The chances of their finding steady, well-paying and meaningful jobs will be improved with the anticipated growth in the NWT's industrial economy in the medium and long term, but only if they have the skills necessary to take advantage of the attendant job opportunities.

Construction is one of the last sectors to afford young people, especially, the real possibility of advancing from unskilled, entry-level jobs to highly

paid senior positions without the need for a college education. Under the apprenticeship system, teenagers with as little as Grade 10 education can go directly from school to a reasonably well-paying job and sign on as apprentices in one of about 30 construction trades. For four years, usually, they work at progressively higher wages under the supervision of fellow workers certified in their chosen trades, and attend school for several weeks each year. Once they become certified or "ticketed" journeymen or women, they are well-placed to move up to senior positions paying in the order of \$120,000 a year. They can also start their own businesses – which many of the NWT's most successful contractors have done.

Training was not long ago a routine requirement of many tenders over a certain size. In the 1990s, the Government of the NWT devoted approximately 1% of total project costs to finance a combination of on-the-job and on-site classroom pre-employment and pre-trades instruction throughout the construction project. To meet this tender requirement, contractors used the Construction Worker Training Program to import a wide range of skills, from entry-level employment requirements for the modern economy to basic skills in carpentry, plumbing, electricity, painting and other building trades. In the end, the Construction Association's program gave some 1500 pre-division NWT young adults – most of whom would otherwise have been unemployable – the minimum education and skills they needed to land that all-important first job.

Another advantage of the program was that Association members were a ready source of employers for program graduates.



Source: ITI - GNWT, A Home from Local Logs

## CAPITAL AND INVESTMENT

It does not require substantial capital investment to enter the NWT construction industry. Anyone with the requisite skills and tools can open a small contracting business with little more than a vehicle and a phone, and many carpenters, plumbers and electricians, for example, have been doing precisely that recently in response to growing residential demand for their services.

Limited financing is available from government sources including the NWT Business Development and Investment Corporation (BDIC), the Business Development Bank of Canada (BDC) and some other sources.

For larger construction firms, access to working capital is a key ingredient for success. It is commonplace for general or major subcontractors to front, say, \$2-million in materials and wages at the start of a project, and not be able to bill that amount until a month or more later – and even then they are typically subject to a 10% holdback. Needless to say, good relations with a bank are important in this sector, as are prevailing interest rates.

Contract security poses a Catch-22 for all but the most established contractors, especially now that insurance rates are at all-time highs and brokers are particularly nervous in the wake of several recent massive claims worldwide.

Construction companies routinely need both performance and materials bonding to bid on larger projects, but brokers are reluctant to underwrite companies with a limited track record of successfully completing large contracts. Contractors with limited bonding history have to gradually secure smaller

contracts consecutively and/or simultaneously, until they win their broker's confidence.

The NWT Business Development and Investment Corporation provides contract security to NWT contractors bidding on GNWT and NWT Housing Corporation tenders.

Profit margins in the construction industry here and elsewhere are generally in the 3-5% range, but can fluctuate significantly, especially when in a “seller's market”.

### ***NWT Power Support Program***

The GNWT subsidizes the cost of power for construction businesses with annual revenues below \$2-million in all NWT communities outside Yellowknife by covering the difference between their full regular rate and the Yellowknife rate, for the first 1000-kilowatt hours, maximum, per month.

Business owners must apply for the subsidy (which is not automatically factored into regular utility bills) and they can claim subsidies retroactively for up to five years. Credits may not be transferred from one month to the next. The subsidy is issued once a year, and utility bills must be submitted annually for review and reimbursement, along with financial statements for the period.

## INFRASTRUCTURE

The NWT is a large area of Canada with a relatively small population. Its infrastructure is limited and further expansion costly. Challenges include:

- Limited road access to most communities during part of the year, forces companies that have not planned for this to fly-in supplies at added expense.
- Limited commercial accommodation can increase project costs or impede a contractor's ability to secure needed staff.
- Most communities do not have public Internet access. This adds to planning and communications costs.
- Inspection services are limited. There are only a few NWT electrical, structural and gas inspectors.
- Cell phone access is limited to a few major communities - there is very limited access outside community boundaries.
- There are only a few building supply companies and lumberyards in the NWT. Most contractors in most of the smaller communities are on their own.

## MARKETS

The downturn in the construction industry in the late 1980s reflected, in part, the cyclical nature of the construction industry, but this normal volatility was intensified by the NWT's comparatively very small market size. In most of southern Canada and the U.S. contractors can, in effect, expand their markets by fairly easily finding work in nearby towns or regions – a tactic that small populations and high transportation costs preclude in the north.

One inescapable consequence of the NWT's small construction market is that it's difficult for small contractors to operate outside larger, tax-based centres. Existing general and major subcontractors need access to the entire NWT market. Some also still rely, post division, on securing work in Nunavut.

In this regard, the NWT Construction Association is concerned that limited market size poses similar concerns over memoranda of understandings that set aside a certain volume or percentage of available contracts for land-claims groups in a region or community.



Source: ITI - GNWT, Building the Road to Behchokò

## REGULATIONS AND TAXATION

The GNWT's Business Incentive Policy (BIP) has had a tremendous beneficial impact on the territorial economy by giving resident contractors a preferential bid adjustment to promote their development.

BIP allows for a maximum of 15% bid adjustment, or 20% if the contractor is located in community where the work is to occur. This does not mean an automatic increase in tender prices to BIP-approved firms. Competition among northern contractors and between north and south work to keep actual adjustments to a minimum. In 2004/05, BIP premiums amounted to \$270,000 on \$200 million in GNWT contracting activity; well under 1%.

On taxation, the NWT Construction Association applauded the reduction in territorial corporate tax rate to 11.5% in the latest territorial budget. However, it remains concerned about previous increases in personal and payroll taxes because they exacerbate the problem of attracting and retaining highly skilled, highly mobile employees to the north in an already fiercely competitive national labour market. The added tax burden therefore also

adversely affects employers' ability to train Northerners, since the skilled imports are the ones doing most of the training.

The Construction Association is also concerned about the probable long-term negative repercussions of overregulation, noting that the Conference Board of Canada and others have ranked the NWT as one of North America's most promising jurisdictions for resource development, but one of the worst in which to invest due to the complex, inconsistent and unduly expensive regulatory process confronting developers. In this regard, the Association questions the purpose and wisdom of forcing small mining exploration companies to undergo full-blown environmental assessments based on questionable concerns expressed by some communities and groups.

The NWT Construction Association has expressed concern that contractors are also wary of the apparent growing influence of anti-development groups that ignore northern economic and social realities, and wield their substantial political and financial clout to oppose virtually any development in the NWT.



Source: Diavik, Shop Construction

## CONCLUSIONS

Governments *historically* have played a far greater role in the NWT economy than is the case nationally. Nonetheless, the private sector is becoming increasingly prominent in the NWT and will continue to be a major source of construction opportunities, for probably the next 20 years at least.

In the medium term, capital expenditures by existing and new mine operators are forecast to exceed \$600-million a year over the next five years. This will mean more work in building camps, mines, winter and all-season roads, airstrips, diesel plants and perhaps hydro development, as well as the supply of building materials.

However, the degree to which NWT firms will capitalize on these opportunities will depend primarily on their ability to market their existing capacity and acquire

the skilled workers needed to complete the work. Given that there is a shortage of skilled manpower throughout most of Canada, it will be important for industry and government to bolster their efforts to train local men and women.

Elementary literacy and numeracy are basic prerequisites for any kind of meaningful employment, even in construction, yet many of our youth are leaving school without these basic and crucial skills.

In recent years there has been increased emphasis on trades training and education. This trend, coupled with the advent of institutions like the Career and Technical Centre and the Akaitcho Trade Centre, which encourage teens and young adults to explore the trades, is cause for optimism that the shortage of skilled

workers in the NWT will ease over the next few years.

The north is now on the verge of making a substantial net contribution to the Canadian economy, based on its natural resources. Construction of related facilities will offer major employment and income opportunities to all Northerners.

But opportunities are not guarantees, and it will take foresight, diligence and, most of all, goodwill among all concerned to realize our full potential.



Source: Adobe



Source: Diavik

# NOTES

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