



NORTHERN INFRASTRUCTURE & SOCIAL FACTORS

Transportation

Access to modern infrastructure is a critical factor in the location decisions of investors. Cost efficiencies gained in the transportation of supplies or goods directly impact the bottom line. Improvements to Northern Ontario's infrastructure will therefore enhance not only the competitive position of northern businesses and industries but also provide an incentive to new or expanding businesses.

Transportation linkages are essential to moving goods and people between communities in the North as well as between Northern Ontario and the rest of the world. Well-maintained road and rail networks and air, marine and port facilities help attract business investment to the region, strengthening the ability of northern industry to compete on global markets. Winter road, rail, air and marine linkages are also lifelines to essential services in remote communities of the North.

Road

Northern Ontario's highway network consists of close to 11,000 kilometres of highways including two major Trans-Canada highways (11 and 17).

Up to 90 percent of inter-city passenger travel in Ontario is by road. Highway transportation is especially important in the North where sparse population and long distances reduce the viability of other modes of passenger transportation and where most of the population in the North lives close to the two major highways, 11 and 17, which cross the region. In many communities, northerners rely on highways to access essential services provided in urban centres such as health care. A network of winter roads, spanning 2,800 kilometres, also provides access to 31 remote First Nations communities accessible only by air or water during the summer months.

In Canada, 75 percent of freight (by value) moves by truck. Truck traffic is approximately 10 to 15 percent of traffic volumes in the Highway 11/69 corridors. An efficient highway system allows the trucking sector to meet the strict "just-in-time" delivery standards of shippers, which in turn improves the competitiveness of Ontario industry. The manufacturing sector in Northeastern Ontario is especially dependent on this linkage.

Highway improvements also create economic spin-offs such as jobs in the engineering and construction industries and increase demand for aggregates, concrete and structural steel. The Ontario Ministry of Transportation estimates that 17 direct and indirect jobs are created in the construction industry for every million dollars spent on highway construction.

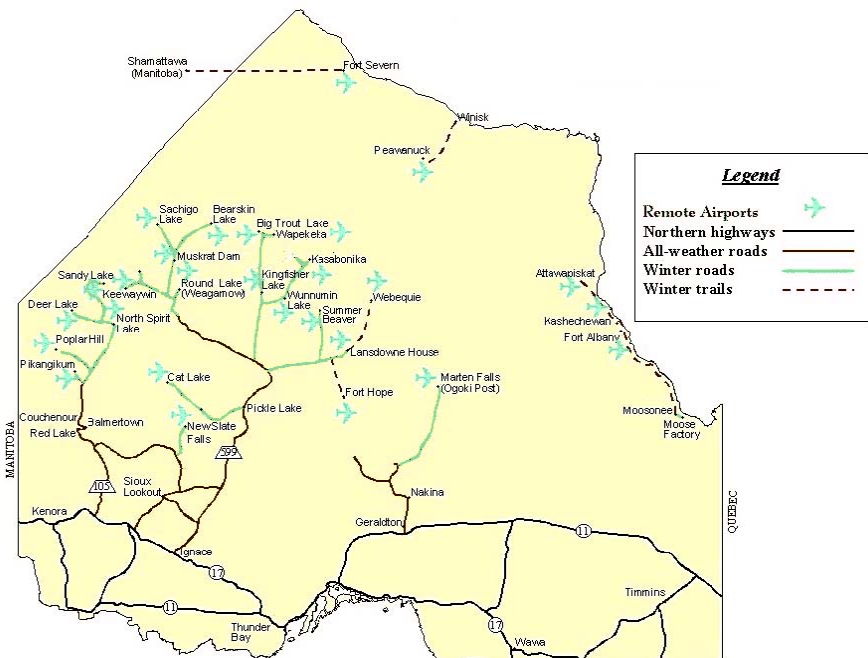
Rail

Northern Ontario's rail network consists of 7,000 kilometres of rail line with two transcontinental (CN and CP) and two regional railways (Ontario Northland Transportation Commission (ONTC) and Algoma Central Railway (ACR)). The ONTC network plays an important role since it provides access to communities where year-round road access is not available.

Rail travel also provides unique northern experiences including: the Algoma Central Railway offering tours to Agawa Canyon and a Snow Train excursion; and the Little Bear and Polar Bear excursions, serving communities between Cochrane and Moosonee.

Air

Air transportation plays an integral role for many remote northern communities that do not have year-round road or rail access. There are 52 municipal and remote airports in Northern Ontario, more than in the rest of Ontario combined. Thunder Bay and Sudbury are the main regional airports, with Thunder Bay's international airport being the third busiest in Ontario. However, for most of these airports, their main role in the North is the movement of essential goods and services to remote communities that do not have year-round, or any, surface transportation. Sioux Lookout also provides an important hub for travel to the more remote areas of Northwestern Ontario.



Marine

While marine cargo has decreased over the last fifteen to twenty years, the Port of Thunder Bay and the Port of Sault Ste. Marie continue to be among the busiest in the province and are connected to the Atlantic Ocean by the St. Lawrence Seaway.

The Port of Thunder Bay is at the head of the Great Lakes-St. Lawrence Seaway System, and serves as the gateway to the 3,700 kilometre waterway for the prairie provinces and the midwestern United States. The international port (designated a Canada Ports Authority) is one of the largest grain-handling ports in the world and handles western grain for export overseas, in addition to other bulk goods, such as coal and potash, for consumption throughout the Great Lakes.

Approximately 440 km downstream are the ports of Sault Ste. Marie, which handle petroleum and other liquid bulk products, and dry cargo including 2.5 million tonnes of inbound ore for Algoma Steel.

Northern Ontario also has a network of smaller private, commercial ports, public marina facilities and waterways that serve forestry and industrial minerals producers as well as the Northern tourism industry.

Border Crossings

There are four main Canada-USA border crossings in Northern Ontario, which provide important linkages to markets within the USA. These crossings include the Sault Ste. Marie Bridge, the Pigeon River Bridge, the Fort Frances-International Falls Bridge and the Baudette-Rainy River Bridge.

In terms of total border crossings into Ontario, these crossings handle a small but significant percentage of Canada-USA traffic, with the border crossing at Sault Ste. Marie being the busiest northern crossing in terms of passenger and freight.

Telecommunications

A state-of-the-art telecommunications infrastructure provides the foundation for the North to harness emerging opportunities in the "knowledge economy". It strengthens the competitive position of northern business and industry and helps to overcome the geographic challenges of this region.

Northern Ontario's telecommunications infrastructure and industry (including secondary services such as Internet service providers, call centres, Web site developers and on-line businesses) has grown dramatically. For example, the North's call centre industry created 8,000 new jobs in two and a half years, in North Bay, Sudbury, Sault Ste. Marie, Thunder Bay and Timmins.

Establishment of broadband telecommunications networks in North Bay, Sault Ste. Marie, Sudbury, Timmins and Thunder Bay and the expanding network of northern communities connected with fibre optics is laying the foundation for northern businesses to expand to new markets.

While limited telecommunications service remains a challenge in remote areas of the region, major northern urban centres are aggressively pursuing "information age" ventures and businesses associated with the telecommunications industry. This has spurred strong job creation, primarily with the attraction of both inbound and outbound call centres to the region.

Education & Training

Training is key to being competitive in a global economy. Employers constantly require new and higher levels of skills because of continuing technological change in the workplace. Strong literacy and basic skills are needed for success in any labour market. Northern Ontario's capacity to attract investment depends in part on having a skilled workforce and training institutions that can provide customised training that will meet the needs of new technologies and new businesses.

Northern Ontario's training infrastructure includes the following:

- Three **universities** in Northern Ontario provide a broad range of undergraduate and graduate programs in French & English.
- Six **Colleges of Applied Arts and Technology** provide students with the opportunity to develop career-related skills in business, applied arts, technology, and health sciences.
- Forty-six **school boards** in Northern Ontario, in addition to providing education for Ontario's youth, offer continuing education services to adults.
- **Private training institutions** offer courses in a variety of disciplines, including business, heavy equipment operation, information technology, management, mining, safety, technical & trades, and transportation.
- Many northern companies provide **employer-based training**, whereby staff or consultants provide customised training programs to staff. Employers also play the primary role in providing apprenticeship training for workers in the skilled trades

Local Training Boards have been established to direct the planning and delivery of federal and provincial training programs to make job and skills training more accessible, effective, and responsive to local needs. Five boards in Northern Ontario bring together representatives from local business, labour organizations, training institutions and other partner groups to work with their communities (including government partners) on finding and implementing local solutions to local labour force development issues.

The North enjoys an excellent network of distance education sites and programs. Distance education is a valuable means to market the North's expertise in key sectors globally and also to increase educational opportunities in remote areas of the North. *Contact North*, a distance education network, operates access sites in 90 northern communities.

Positive academic and industry partnerships are often fostered through research initiatives. Research currently underway in Northern Ontario includes the following:

- Forest management and silviculture research at the Great Lakes Forestry Centre, the Ontario Forest Research Institute and Lakehead University;
- Mining research and product development through Cambrian College's Northern Centre for Advanced Technology; Laurentian University's Mining Innovation, Rehabilitation and Applied Research Corporation; and the Canadian Mining Industry Research Organization;

- Geophysical and geochemical research with Laurentian University and the Ministry of Northern Development and Mines' Ontario Geological Survey;
- Technology development and commercialization at the Northwestern Ontario Technology Centre – a partnership of Lakehead University and Confederation College;
- Fundamentals of basic physics at the Sudbury Neutrino Observatory operating underground at the 6800-foot level of INCO's Creighton Mine with the world's first heavy water neutrino detector;
- DNA research at Lakehead University's Paleo-DNA Laboratory;
- Clinical and molecular biology research through the Northeastern and Northwestern Regional Cancer Centres; and
- Agriculture research programs undertaken by the Thunder Bay Agricultural Research Consortium and at the New Liskeard and Emo Agriculture Research Stations.

Health Care Infrastructure

Quality of life is an important factor in attracting new businesses to northern communities. The availability of cultural, social, health facilities and programs helps make northern communities attractive places to live and work.

On September 13, 2005, the Northern Ontario School of Medicine (NOSM), the first medical school to open in Canada in almost forty years, welcomed its charter class. NOSM is a joint effort between Laurentian, Sudbury and Lakehead Universities, Thunder Bay, with the aim of educating doctors who will be better equipped to address the unique needs of Northern Ontario residents. The multidisciplinary learning model of NOSM will also focus on training rural physicians who will be more likely to practice in the North.

A study conducted by the Centre for Rural and Northern Health Research found that health care institutions have a dramatic effect on the economy. In 1999-2000, health care institutions contributed over \$490 million and 13,800 full-time equivalent jobs to the local economy in the Sudbury region. These figures indicate unmistakable business opportunities in this sector.

Northern Ontario has 38 hospitals, 329 long-term care facilities and agencies and two regional cancer centres. In addition, 5 Community Health Centres (CHCs), operated by non-profit incorporated organizations funded through the Ministry of Health and Long-term Care, provide primary health care and health promotion programs and services. Also, 6 Aboriginal Health Access Centres operate in communities across the North. The Centres offer culturally appropriate primary care to Aboriginal families and individuals. Programs may include: family medicine and nurse practitioner sources, nutrition counseling, health education, disease prevention, mental health counseling, and Traditional Healing, etc.

The Ontario Telehealth Network (*formerly NORTH Network*), a telemedicine initiative, provides medical consultations, continuing medical education, and patient education via two-way television and electronic medical instruments to rural and remote communities in Northern Ontario. The Network currently links 70 sites in 50 communities across the North. Ensuring all Ontarians have access to quality healthcare, regardless of where they live, is a priority of the provincial government. Outreach programs, visiting specialists, regional clinical education networks, mobile diagnostic equipment and innovative use of telecommunications technology are some of the many innovative strategies employed to improve access to quality health care in the North. The research, development and assessment of these strategies also present economic growth opportunities for the region.

In response to physician supply and geographic/distance challenges, northern health facilities have embraced innovative approaches in telemedicine and the delivery of health care such as integrated teleradiology/digital imaging; mobile screening and diagnostic equipment; and pan-northern telemedicine initiatives.

These areas present significant partnership opportunities among the North's hospitals, telecommunications industry and post-secondary institutions with the Northern Ontario School of Medicine playing a central role.

Energy Supply

A safe, reliable, and environmentally-sustainable supply of energy, combined with competitive energy prices for consumers, contributes to the creation of jobs and expanded opportunities for economic development and investment in Ontario.

Northern Ontario possesses vast resources that can be utilized in the production of energy, and approximately 43 percent of the power generating plants in Ontario are located in the North. Over 60 percent of these northern

power-generating plants are hydroelectric. There is also a small amount of energy generated through biomass conversion – burning leftovers from forestry industry activities. Northern Ontario also presents the potential for wind power in certain areas along the north of Lake Superior, and in some remotely populated communities along Hudson Bay.

Approximately 13 percent of the energy consumed in the province is consumed in Northern Ontario where energy consumption is generally driven by industrial activity. The resource-based sector includes several high energy consuming industries. Industrial consumption is affected by industry conditions, i.e. domestic and global economies, energy efficiency, energy costs, etc. Energy costs also influence the price of products and, therefore, the ability of northern companies to compete and create jobs.

Environmental Factors

Clean air, water, land, and healthy ecosystems are the foundation of prosperous communities and thriving economies. A direct beneficiary of a cleaner environment in Northern Ontario is the tourism industry which attracts visitors wishing to experience the region's extensive lakes and rivers, vast undeveloped forests, and rugged terrain. Significant natural features include the Canadian Shield, the Great Lakes Heritage Coast, the Great Lakes-St. Lawrence Forest, the Boreal Forest, and the Far North Hudson Bay/James Bay coastal area.

The North benefits from the operation of over 90 provincial parks including Algonquin Park, Quetico Park and Woodland Caribou Park. These parks serve as tourist attractions, but also as a means of preserving Ontario's natural heritage. Perhaps the most significant natural feature of Northern Ontario is the extensive presence of water. Water features include the coastlines of Lake Huron, Lake Superior, James Bay and Hudson Bay, large inland lakes such as Lake Nipigon and Lake of the Woods, and thousands of other lakes and rivers.

Along with its many pristine natural wilderness areas, Northern Ontario also has an active industrial sector. Like other North American urban centres, communities like Sudbury, Thunder Bay and Sault Ste. Marie face the environmental challenges stemming from industrial, transboundary, transportation, and residential pollution.

The Ontario government sets clear policies, standards and rules to protect the environment and to encourage conservation activities. Along with monitoring the environment and enforcing these rules, the Ministry of Environment and Energy looks for innovative approaches to complement legislation and regulations. These include working with communities, industries and organizations towards finding flexible, practical, cost-effective ways to strengthen environmental protection and conservation efforts.

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