



Industry  
Canada

Industrie  
Canada

FedNor



# State of the Aerospace Sector in Northern Ontario

Executive Brief



*March 2010*

Canada

FedNor

# **State of the Aerospace Sector in Northern Ontario**

## **Executive Brief**

**Submitted to**

**FedNor**

**By**

**Jacobs Consultancy Canada Inc.**

**March 2010**

***Note: This report, originally submitted by Jacobs Consultancy Canada Inc, has been edited to meet Industry Canada's publication standards.***

This publication is available in multiple formats, including print, upon request from FedNor. Please contact:

FedNor  
19 Lisgar St., Suite 307  
Sudbury ON P3E 3L4  
Tel.: (705) 671-0711  
Toll-free: 1 877 333-6673  
Fax: (705) 670-5331  
E-mail: [publicationsfednor@ic.gc.ca](mailto:publicationsfednor@ic.gc.ca)

This publication is also available electronically in HTML format at <http://ic.gc.ca/FedNor>

### **Permission to Reproduce**

Except as otherwise specifically noted, the information in this publication may be reproduced, in part or in whole and by any means, without charge or further permission from Industry Canada, provided that due diligence is exercised in ensuring the accuracy of the information reproduced; that Industry Canada is identified as the source institution; and that the reproduction is not represented as an official version of the information reproduced, nor as having been made in affiliation with, or without the endorsement of Industry Canada.

Cat. No. lu91-4/18-2011E-PDF  
ISBN: 978-1-100-18495-1  
IC: 60883

For permission to reproduce the information in this publication for commercial redistribution, send a request by e-mail to [droitdauteur.copyright@tpsgc-pwgsc.gc.ca](mailto:droitdauteur.copyright@tpsgc-pwgsc.gc.ca).

## EXECUTIVE BRIEF: STATE OF THE AEROSPACE SECTOR IN NORTHERN ONTARIO

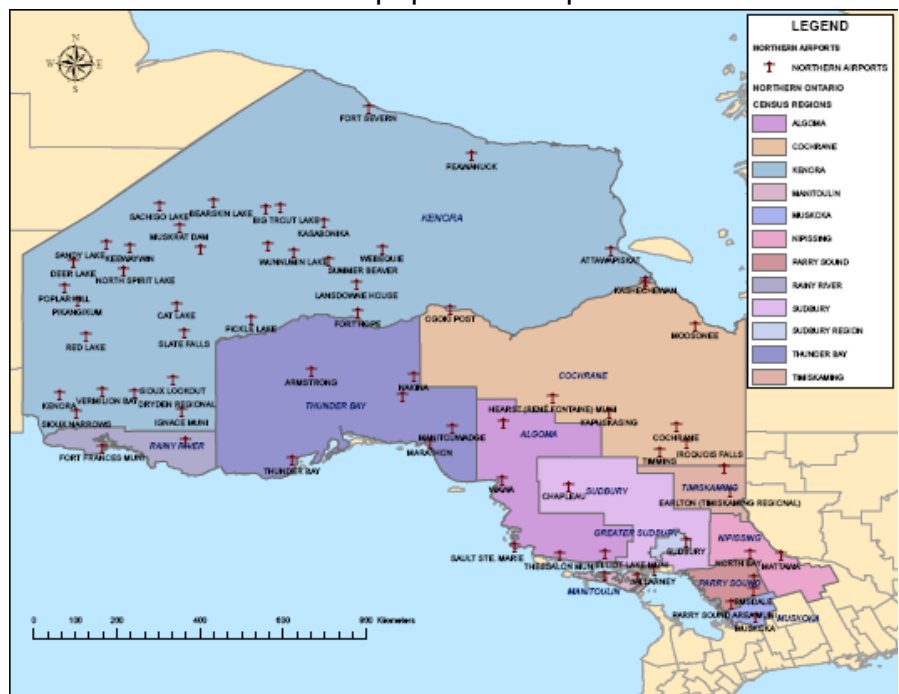
The aerospace industry encompasses a wide range of products and services, including airport operations, aircraft maintenance, repair and overhaul, flight simulation, scheduled passenger services, charter services (including bush planes), and air cargo and freight transport. It is highly competitive, requires significant capital, and generates high tech, well-paying jobs.

Northern Ontario represents nearly 90% of the province's land area, but only 6% of the provincial population. Northern Ontario's rural population comprises more than one third of the total population. The remaining two thirds reside in urban areas, with the majority living in the five major cities of Thunder Bay, Sault Ste. Marie, Timmins, Sudbury, and North Bay.

Northern Ontario is defined by FedNor as including the Ontario census divisions of Muskoka, Nipissing, Parry Sound, Muskoka, Sudbury, Greater Sudbury, Timiskaming, Cochrane, Algoma, Thunder Bay, Rainy River, and Kenora. Kenora is by far the largest district, representing 51% of the total Northern Ontario land area, and is the furthest north.

Many Northern Ontario communities remain reliant on primary industry sectors such as mining and forestry, as well as tourism. With the North's population expected to stabilize in the next 25 years, the Government of Ontario released in October 2009 its proposed growth plan for Northern Ontario. The plan includes developing an inter-regional transportation network, creating regional economic zones, and encouraging the development and use of green technologies.

Two recent studies<sup>1</sup> have identified aerospace services as a primary investment target for Northern Ontario. They conclude that the range of investment opportunities could be extended to



<sup>1</sup> Pan-Northern Ontario Investment Attraction Strategy. March 2006. Urbanmetrics Inc. Pp 8-103; and Northern Ontario Investment Attraction Study. Final Report. Deloitte. August 2005.

businesses that enhance emerging or existing clusters in Northern Ontario, such as aerospace. To assist FedNor as well as other local economic development agencies, more information regarding the state of the aerospace sector in Northern Ontario was required.

## **Study Objective**

The purpose of the study was to determine the state of the aerospace sector in Northern Ontario. The intent of the final report is to provide FedNor, communities and businesses in Northern Ontario with a resource as they develop aerospace strategies for trade and investment attraction.

## **Approach**

This study focuses on aerospace businesses, educational and training institutions, and public airports in the 12 census districts in Northern Ontario.

Data collection included the review of publicly available documentation (in print and online), surveys, and telephone interviews. The response rate to the surveys and requests for Canadian Companies Capabilities (CCC) registration was poor; therefore, the analysis in this study is limited to the best information available at the time.

The study was guided by a Steering Committee composed of representatives from FedNor, Sault College, Sault Ste. Marie Economic Development Corporation, and the Ontario Ministry of Northern Development, Mines and Forestry.

Results are presented in the aggregate and by Census Division and/or type of aerospace activity (based on NAICS code), as appropriate.

## **Profile of Aerospace Businesses in Northern Ontario**

Northern Ontario's aerospace has a long and proud history, and is a strong contributor to Ontario's economy. There are more than 200 individual aerospace firms in Northern Ontario (excluding airports and passenger service firms at airport that are not directly involved in aerospace activities [e.g. car rental and food service]). Some of these 205 firms operate from multiple locations, resulting in 281 based operations.

The aerospace products and services of these 281 based operations were identified by North American Industry Classification System (NAICS) code. As many organizations provide more than one product or service, the results are not mutually exclusive. Air charter is overall the largest aerospace service group in Northern Ontario, with 151 based operations (not necessarily individual companies), followed by hunting and fishing camps with 68 based operations. This is not surprising given that most fly-in hunting and fishing camps operate their own small fleet of aircraft (considered a charter service). The next largest service group is aviation maintenance with 57 based operations, followed by scheduled air transportation (34) and aircraft fuelling services (31).

## Sample of Aerospace Businesses in Northern Ontario

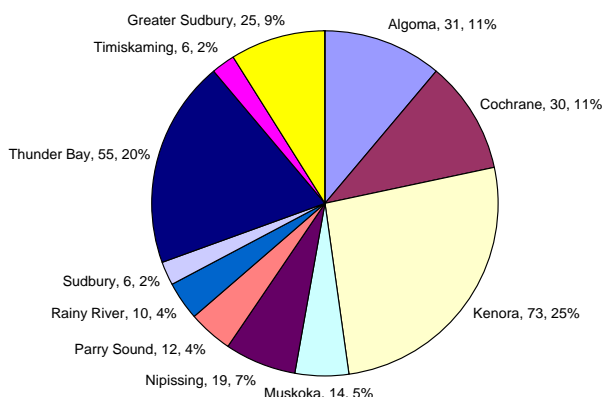
Category	Organization/Business	Head Office Location
<b>Aircraft Manufacturing, Assembly and Sales</b>	<b>Aerovate</b> designs and manufactures passive variable pitch propeller hub systems as well as unmanned aerial vehicles	Thunder Bay
	<b>Aztec Nomad Inc.</b> manufactures the Aztec Nomad floatplane and amphibian	Muskoka
	<b>Bombardier Aerospace / Vector Aerospace</b> assembles CL415 waterbombers	North Bay
	<b>Canadian Home Rotors</b> manufactures a two-person helicopter	Ear Falls
	<b>Found Aircraft</b> manufactures light utility aircraft	Parry Sound
	<b>Sleeping Giant Enterprises</b> is a Canadian distributor for Boschung AG, manufacturer of airport heavy equipment	Thunder Bay
	<b>Trinity Aerospace</b> manufactures aircraft parts and component assemblies	Muskoka
	<b>V. Kellner Pilatus Centre Inc.</b> is a Canadian distributor for Swiss-based Pilatus PC-12 aircraft	Thunder Bay
<b>Aircraft Maintenance</b>	<b>JD Aero Maintenance</b> provides a broad range of maintenance, inspection, and management services, specializing in DHC-8 and CRJ aircraft maintenance and technical support	Sault Ste. Marie
	<b>Muskoka Aircraft Refinishing</b> does regional and fleet aircraft refinishing	Muskoka
	<b>Recon Air</b> specializes in rebuilding and resale of Beavers, Otters and turbo-conversions	Thunder Bay
	<b>Skyservices</b> does complete overhauls, heavy maintenance, regular inspection, interiors, paint, avionics and modifications, specializing in De Havilland, Cessna and Beechcraft King Air aircraft	Echo Bay
	<b>Voyageur Airways</b> does MRO, specializing in Bombardier/De Havilland regional turbo-prop and Bombardier/Canadair regional jet aircraft	North Bay
	<b>Wood Group TurboPower</b> does MRO	North Bay

Category	Organization/Business	Head Office Location
<b>Air Carriers Headquartered in Northern</b>	<b>Voyageur Airways</b> provides air ambulance, charter services	North Bay
	<b>Wasaya Airways</b> provides scheduled passenger service	Thunder Bay

<b>Ontario</b>	<b>Bearskin Airlines</b> provides scheduled passenger service	Sioux Lookout
	<b>Thunder Airlines</b> provides scheduled passenger service	Thunder Bay and Timmins
<b>Aviation Education Centres of Excellence (post-secondary)</b>	<b>Canadore College</b> offers programs in aircraft structural repair, aircraft maintenance, avionics, aviation pilot fixed wing—Aboriginal program, helicopter flight training	North Bay
	<b>Confederation College</b> offers programs in aerospace manufacturing, aircraft maintenance, aviation flight management	Thunder Bay
	<b>Sault College</b> offers programs in aviation technology flight	Sault Ste. Marie
<b>Provincial Public Services</b>	<b>Ontario Ministry of Natural Resources</b> maintains year-round fire bases in Sault Ste. Marie, Dryden, Timmins, Sudbury, Muskoka, and Thunder Bay	Sault Ste. Marie
	<b>Ornge</b> , an air ambulance service, maintains northern bases in Thunder Bay, Moosonee, Kenora, Sudbury, Muskoka (summer), and at private contractor locations	Toronto

The Census District (CD) of Kenora has the largest share of aerospace businesses in Northern Ontario, followed closely by Thunder Bay CD, then the districts of Algoma, Cochrane, and Greater Sudbury.

In terms of geographic niches within the sector:



→ Air charter is the aerospace service most provided in all districts except Muskoka, where the focus is on aircraft maintenance, and Manitoulin, where there are no known aerospace businesses. This is reasonable as fly-in hunting and fishing is in the top three niches in half of the districts;

→ Approximately half of the air charter services are provided in the districts of Kenora and Thunder Bay, as is aircraft maintenance activity;

- Nipissing has the most training facilities (post-secondary and flight training);
- Muskoka is the only district having aerospace products and parts manufacturing in its top 3 activities; and
- Cochrane is the only district having scheduled air transportation and air ambulance services in its top 3.

Supporting aerospace businesses are many provincial and federal incentive programs, ranging from tax incentives to grant funding. Those that are most targeted toward the sector (excluding R&D, which is discussed later) are the Advanced Manufacturing Investment Strategy (AMIS), the Industrial and Regional Benefits (IRB) Policy, and the Community Adjustment Fund (CAF). Overall however, funding for aerospace activities that are neither R&D nor infrastructure related is difficult to attain. That said, there are many programs targeted toward investment in the North, sponsored mostly by FedNor and the Northern Ontario Heritage Fund Corporation (NOHFC).

Overall, the aerospace sector in Northern Ontario is diverse, active, and a going concern. Smaller charter operators, however, have been challenged by recent policy and regulatory changes, that although not related directly to aviation, could have a significant impact on the level of charter and fly-in hunt and fish camp activity in the North.

Companies involved in aerospace manufacturing and aircraft maintenance in the North are both large and small. Northern Ontario is also home to several large airlines and charter companies (100–200+ employees) headquartered in the North, as well as many small charter operations (< 5 employees), which are often in support of fly-in hunting and fishing camps.



Conclusions regarding the size and economic contribution cannot be drawn from the inputs received during this study. It is clear, however, that the aerospace industry in Northern Ontario is mature, and is a going concern.

The types of aerospace activities in Northern Ontario are consistent with those provided in the southern part of the province and in the rest of Canada, albeit on a lesser scale. Northern Ontario's niche areas are:

- manufacture and sales of smaller utility aircraft and helicopters;
- assembly of the CL-415 water bombers;
- scheduled air transport to remote northern communities;
- air charter in support of fly-in hunting and fishing camps;
- air ambulance;
- aerial firefighting; and
- college diploma programs in aerospace.

## **State of the Public Airport Infrastructure in Northern Ontario**

There are 69 public airports in Northern Ontario including 1 National Airport System (NAS) airport, 37 municipal airports, 29 provincial airports, and 2 abandoned airfields (available for emergency use). Kenora CD has the largest concentration of public airports in the North (52% of the 69), which is not surprising given the size of the district and that most of the North's provincially owned and operated remote airports are in the district.

The majority of the active public airports (72% of the 67) are "certified" by Transport Canada. Certification is an important requirement in attracting scheduled passenger service and receiving federal ACAP funding. There are 48 certified airports in Northern Ontario, of which 31 are in Kenora. Of the 48, 81% are eligible for federal ACAP funding; this high percentage is largely due to the ACAP eligibility of 27 of the 29 provincial airports.

Thirty-four airports in Northern Ontario have paved runways; at least one in each District. The shortest runway (2600 ft.) is located in Fort Frances, and the longest runway (10 000 ft.) is in North Bay. All Districts have at least one runway of at least 4000 feet, which can accommodate a 19-seat turbo-prop aircraft.

Airport managers who responded to the survey self-assessed the quality of their infrastructure. On average, the infrastructure at non-provincial owned airports is much higher than that at provincial airports.

Some airports own hangars that are available for lease, while others lease out land for tenant-owned hangars. The situation varies from airport to airport, depending on demand.

Customs services and ground transportation are two key public facilities at airports. Customs services are available at 21% of Northern Ontario airports; the services are available in at least one airport in each district, except Parry Sound and Sudbury. Car rentals are also available at 21% of the airports, but only 7 of the 12 districts have this service.

The availability of repair services as well as fuel services are two key services provided to aircraft owners and operators. The districts of Rainy River and Timiskaming are the only two that do not have aircraft maintenance services. All districts have at least one airport with jet fuel; however, Kenora and Parry Sound districts have the lowest percentage of airports carrying jet fuel.

There are eight airlines providing scheduled service in/out of 38 airports in the North. Seventy-five percent of these airports are located in Kenora CD, the site of many remote, far north communities that require air service as their only year-round transportation access. The primary passenger hubs are linked to the five major cities.

Northern airports play a very important socio-economic role. They provide year-round transportation access to remote communities; provide a base for the province's aerial forest firefighting and search and rescue activities; and provide a base for air ambulance services.

Several infrastructure and equipment funding sources are available to airport owners. The ACAP program is well-known and understood, and well-used. ACAP, however, is only available to airports with scheduled passenger service, and funding is provided primarily for airside safety projects. The federal and provincial governments have also recently introduced several infrastructure programs to stimulate the economy and rebuild critical infrastructure. There are many examples of how airports have accessed these funding programs for hangars, fencing, equipment sheds, site servicing, air terminal buildings, etc.

## **Industry Outlook**

The complexity and regulated nature of the industry create significant barriers to entry for many businesses. With changes in the regulatory landscape, potential compliance issues will need to be addressed to ensure continuity of service, particularly at the larger airports in the region.

Aerospace opportunities are constrained by some of those barriers to entry, but some specialist areas can still be accessed, as described in subsequent sections. Overall, the prospects for medium-term recovery are good, and those companies with established links in to the aerospace supply chain will benefit when that recovery gets under way. With the increasing emphasis on environmentally friendly solutions for the aerospace industry, Northern Ontario companies with expertise in this area could be involved in developing solutions.

The aerospace sector, like much of the rest of the economy, has taken a beating during the current recession, and users of air transportation, particularly within the tourism sector, have reduced demand. However, within the Northern communities there are essential needs that can only be met by aerospace services, be they passenger, cargo or social-service oriented.

Regional passenger and cargo carriers will play an important role as feeders into the major carriers. There is evidence of increasing competition in at least the larger centres (with the advent of Porter airlines), which will benefit those communities and aerospace-related businesses alike.

## **Aerospace R&D**

Some of the most active and large companies pursuing aerospace R&D in Ontario are Bombardier Inc., CAE Inc., and Pratt & Whitney Canada Corp., all of which have facilities in the southern part of the province.

There are, however, smaller companies in Northern Ontario that are pursuing R&D, including Aerovate in Thunder Bay, Found Aircraft in Parry Sound, and Aviation Intertech in Thunder Bay. These three companies received IRAP funding in 2008 and 2009.

Ontario offers one of the most generous R&D tax incentive programs in the world, and the provincial and federal governments offer several key incentive programs available to foster R&D activity within the sector. These include the Strategic Aerospace and Defence Initiative (SADI), the Ontario R&D Tax Credit (SR&ED), FedNor's Applied R&D Program, the National Research Centre (NRC)'s Industrial Research Assistance Program (IRAP), and the Advanced Manufacturing Investment Strategy Program (AMIS).

Given the level of existing R&D activity in southern Ontario, which is predicated on the concentration of aerospace activity in that part of the province, it is unlikely that there will be an influx of new R&D activity in the North.

## **Aerospace Education and Training**

Northern Ontario is well served in the area of aerospace education training, from technical diploma programs including aircraft maintenance, aircraft structural repair, and avionics maintenance, to fixed and rotary-wing pilot training, as well as specialized training.

Northern Ontario has three world class post-secondary aviation training facilities offering college diplomas: Canadore College in North Bay; Confederation College in Thunder Bay; and Sault College in Sault Ste. Marie. The programs at these three colleges are located at the airports in their respective facilities, providing students with a real-life operating environment.

All three colleges have strong ties to industry through advisory councils. Most students come from all over the province, but it is not uncommon to find students from other parts of the country, or other countries. These three colleges graduate approximately 150 aviation students each year, providing industry with a steady stream of well-trained workers. Graduates are in high demand throughout the province and country.

University degree (i.e. undergraduate, Masters and PhD) programs in aerospace engineering, as well as college diploma programs in airport management, are not currently offered in Northern Ontario, as there is a strong supply in the southern part of the province.

Industry members have advised aircraft maintenance program suppliers that they continue to look to the colleges to fill an ongoing gap in avionics technicians (there is an industry-wide shortage). They also advise that new graduates have a general lack of advanced electronics, and a general lack of maturity. The industry is now hiring for attitude as well as marks. Northern Ontario colleges are adjusting their programs as required, to continually meet industry requirements.

The post-secondary programs offered in Northern Ontario are generally one to two years in length. As parents often budget for three to four years of post-secondary education, students tend to enrol in multiple aviation programs, resulting in cross-trained graduates.

There has been an emphasis recently on offering flight training with business management in an effort to enhance student's marketability in the long term, and even provide skills should students eventually wish to open their own small business. The challenge is to get young students who have a passion for aerospace (versus business) to think long term.

In 2009, the provincial government recognized the aerospace industry in the Specialist High School Majors program. This demonstrates the Province's interest in growing the sector in the long term. Two known high schools in Northern Ontario (both in North Bay) deliver aerospace programs.

There are seven fixed-wing private flight schools in Northern Ontario. Geographic gaps exist in the districts of Kenora, Manitoulin, Rainy River, and Timiskaming. There are two private-sector rotary-wing training facilities, both in Nipissing. Several businesses interviewed believe that there is limited room for new entrants in this market. Given the small population base in many communities, this is quite possible. Although northern airspace is less congested than in the south and provides an ideal flight training environment, as fuel prices and concern about greenhouse gases increases, and technology advances, the use of flight simulators is likely to increase for flight training.

Northern Ontario is also home to several organizations providing specialty training in the areas of crash fire and rescue training, aircraft ownership, flight planning, etc. Industry associations also provide training both online and at conferences and seminars.

## **Funding and Incentives**

There are many incentives available to aerospace businesses and airports in Northern Ontario, including repayable contributions, grants, and tax credits. Information on most programs is readily available through simple Internet searches (including on the Invest in Ontario website). There is, however, no comprehensive database targeting the aerospace sector.

Although most incentive programs are open to many types of businesses and sectors, there are several that target the aerospace sector, or include them as an eligible sector.

Programs for R&D activities are the Strategic Aerospace and Defence Initiative (SADI), the Advanced Manufacturing Investment Strategy Program (AMIS), NRC's Industrial Research Assistance Program (IRAP), FedNor's Applied R&D Program, and the Ontario Scientific Research and Experimental Development (SR&ED) Tax Credit. Although details on R&D funding from some of these programs is not available, there is evidence that eligible Northern Ontario companies do take advantage of the programs.

For infrastructure (primarily airports) projects, there are the Airports Capital Assistance Program (ACAP), Communities Adjustment Fund, the Infrastructure Stimulus Fund, and NOHFC's Infrastructure and Community Development Program. Airport owners in the North appear familiar with these infrastructure programs, and have benefited from them. Examples of types of airport projects funded in part through these infrastructure programs include construction of a new air terminal building, expansion of a general aviation and commercial apron, airside pavement rehabilitation, site servicing upgrades,

hangar development, construction of a new aviation centre of excellence (training facility), and purchase of new airside equipment.

## Investment Attraction Outlook

A two-part investment attraction template was developed jointly by the Consultant and FedNor:

- Asset Evaluation: an assessment of a community's existing strengths in the aerospace sector; and
- Investment Attraction: based on Ontario's Local Economies in Transition Initiative (LETI) model, this is a template that rates the importance of individual criteria for various types of aerospace investment opportunities.

Based on the information collected during the course of this study, the Part 1 Asset Evaluation template was completed. The top six communities in ranked order are Thunder Bay, Algoma, Nipissing, Kenora, Greater Sudbury, and Muskoka.

The following potential opportunities were identified during the course of this study. They can be further assessed by local economic development agencies through the use of the investment attraction template (Part 2):

- aerospace product and parts manufacturing;
- maintenance, repair and overhaul (MRO) services (including aircraft conversions, interiors, painting, etc.);
- technical training;
- flight training (including simulation);
- firefighting technology development and training;
- cold weather testing;
- development of training (including computer-based training);
- manufacturing of cargo handling and ramp equipment;
- fixed base operations (including aircraft fuelling);
- scheduled air service; and
- commercial air charter (including non-scheduled specialty flying and aerial photography).

## Conclusions

Overall Northern Ontario hosts more than 200 aerospace companies, providing similar services to those provided elsewhere in the province, although on a different scale. Northern Ontario's niche areas are:

- manufacture and sales of smaller utility aircraft and helicopters;
- assembly of the CL-415 water bombers;

- scheduled air transport to remote Northern communities;
- air charter in support of fly-in hunting and fishing camps;
- air ambulance;
- aerial firefighting; and
- world-class college diploma programs in aerospace.

The concentration of these businesses is tied directly to the five major cities in Northern Ontario.

Supporting these businesses are incentive programs ranging from tax incentives to grant funding; some are industry targeted, while many are generic to all sectors.

The sector in Northern Ontario has many strengths. It is a suitable location for aerospace manufacturing, testing and evaluation programs with access to incentive programs, and it has infrastructure that can support a variety of activities. Some of these strengths are that Northern Ontario has:

- runways that can accommodate most aircraft types;
- airport operational schedules that can accommodate extended periods of runway use;
- ground facilities and land available for development;
- seasonal weather conditions that can represent conditions at airports in cold and hot climates;
- uncongested air space that is conducive for a flight training environment;
- world-class post-secondary education facilities with specialty aerospace programs that supply industry with a steady stream of well-trained workers;
- specialty services and suppliers;
- successful Northern-based businesses, ranging in size and service;
- bases for critical public support services such as air ambulance and aerial firefighting; and
- the ability to provide support to northern economic development in tourism, mining and other industries.

Aerospace, like much of the rest of the economy, has taken a beating during the current recession, and users of air transportation, particularly within the tourism sector, have reduced demand. However, within Northern communities, there are essential needs that can only be met by aerospace services, be they passenger, cargo or social-service oriented.

In summary, the aerospace sector in the North is diverse, active, a going concern, and mainly serves aviation activity within the Region. Northern Ontario aerospace companies do, however, have a somewhat limited growth potential, based on their relative strength vis-à-vis firms established in other regions.

Based on the research collected during the course of this study, the following recommendations are provided for government agencies, industry groups, companies, and education/training suppliers:

- ➔ Maintain the superior technical aerospace and education programs.
- ➔ Ensure participation in northern development strategies, particularly as they relate to transportation infrastructure.
- ➔ Governments and economic development organizations/agencies should reach out to the businesses identified in this study to inform them of the incentive programs available in support of their R&D and business expansion, including agencies that can assist them with developing their proposals or applications.
- ➔ Investigate the potential benefits of a coordinating industry association to capture all elements of this sector in Northern Ontario, similar to organizations found in other parts of the country (e.g. Aviation Alberta).
- ➔ Encourage local economic development agencies to confirm the sector strengths, and to use the investment readiness template to assess specific opportunities.