

AIR CONNECTIVITY AND AIRPORT INFRASTRUCTURE IN NORTHERN CANADA

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EXECUTIVE SUMMARY

To analyze the existing air transportation services and infrastructure along the Canadian Northern Corridor, a list of remote communities was obtained and investigated. A total of 182 communities have been assessed by Transport Canada or the provinces and territories, of which 146 are located inside the notional Canadian Northern Corridor area. These communities are the focus of our study to answer the following questions:

1. What is the current level of air transportation infrastructure and services?
2. What are the existing federal and territorial policies regarding Northern and Arctic air connectivity?
3. What is the potential impact of climate change on air transportation systems in Northern Canada?

POLICIES AND LEGISLATION

In Canada, air transportation is regulated by the federal government. As such, there are no provincial or territorial policies regarding air transportation. Air transportation services in Canada are not subject to any economic regulations. Airlines and aircraft operators in general are free to set routes and fares as they wish — subject to operational safety regulations. As such, air services in the North are generally subject to supply and demand.

The Airport Transfer (Miscellaneous Matters) Act that created the National Airports System made no special provisions for airports in Northern Canada.

The Civil Air Navigation Services Commercialisation Act transferred the operation of air navigation services to a private, not-for-profit corporation named NAV Canada. The act includes provisions for the continuance of air navigation services in northern and remote communities, requiring NAV Canada to give advance notice of any changes in service that could affect those communities. If the communities affected reject the proposed change, it will require approval by the minister of transportation.

In 2016, the Government of Canada initiated discussions to set a framework for a specific policy for Canada's Arctic and Northern Region. The work on that framework has identified better airport facilities as one of the key infrastructure needs in the region. To the time of writing of this report, no specific policies had been set to address these needs.

ACCESSIBILITY OF REMOTE COMMUNITIES TO NEARBY AIRPORTS

One hundred and forty of the 146 remote communities in this study are each served by an airport nearby. Three communities are served by water aerodromes. Only three communities in BC were found not to have an airport or aerodrome nearby.

Most communities have paved and/or gravel road access to their airports. Communities with nearby airports have fair distances to their respective airports, ranging from 0 to 20 km. The exceptions are the remote communities of Keno, which is more than 50 km away from Mayo Airport in Yukon, and Iskut, located 86 km from Dease Lake Airport.

AIRPORT INFRASTRUCTURE

In general, the existing airport infrastructure provides adequate service to the remote communities in Northern Canada. Three of the 146 communities included in this study do not have access to a nearby airport, and three others can only be accessed by seaplanes. Two are accessible by road with distances between 50 and 90 km. All other 138 communities are served by an airport located within 20 km or less.

Improvements may be required to several airports to ensure year-round, all-weather accessibility and convenience. Forty-two per cent of the airports are not equipped for instrument flights and can only be used under visual flight conditions. It should be noted that the mere availability of instrument approach procedures does not guarantee service, as those procedures also require trained pilots and aircraft equipped with instruments. Only 85 per cent of the runways are not paved, which affects aircraft maintenance and durability. Thirty per cent of the airports do not offer winter maintenance, which can affect their availability during and after snow and ice storms. Twenty per cent of the airports do not feature a terminal building, leaving the processing of passengers and cargo subject to inclement weather. The costs and benefits of such improvements are likely to vary from airport to airport and should be evaluated in more detail on a case-by-case basis.

AIR CONNECTIVITY

Compared to other communities, the majority of the remote communities in the northern parts of the provinces are generally well connected, with scheduled services connecting them to regional and international airports. There are, however, several airports with limited or no commercial services. Eighteen per cent of the airports in this study have no commercial services that connect them regularly to other communities. Seven airports are only served by charter services. Even in the case of the 109 airports that do have regularly scheduled services, the flights are infrequent and costly — it should be noted, however, that this study did not include an assessment of the prices of air tickets serving the northern remote communities.

One other limitation of this study is the absence of information on cargo and ambulance services. For the latter, the existing runway infrastructure — in terms of length and surface — is sufficient to accommodate aircraft with sufficient ranges to connect them to a larger airport and/or community. Cargo, however, is severely limited by the size of the aircraft that can operate on the existing runways. Only 44 per cent of the airports can accommodate jet and larger turboprop aircraft. Once more, an economic analysis of cargo operations and the improvements required to improve them is beyond the scope of this study.

This study is also limited to an evaluation of air services in northern remote communities from a purely air-services perspective. Even though a large portion of the communities have adequate services from that point of view, it should be noted that this by no means implies that their transportation needs are being met. Even in large communities and urban settlements, the transportation of goods and people relies mostly on ground transportation, with air transportation providing faster connections for higher valued travel.

For future studies, we recommend a deeper comparison of the costs and benefits of implementing a northern corridor with the existing air services.

IMPACT OF CLIMATE CHANGE ON NORTHERN AIR OPERATIONS

A weather study conducted for twenty-one select airports, using cloud ceiling data — one of the critical factors in determining the ability of pilots to land at an airport — showed no evidence of impact of climate change in airport operational availability over the last seventeen years. At 60 per cent of the airports, the number of annual inoperative hours shows a slight negative trend. In the summer, 60 per cent of the airports have shown a slight increase in the number of inoperative hours, whereas in the winter the trend is mixed, with 50 per cent of the airports with a negative trend and the other 50 per cent showing a positive trend.

Flying an aircraft is a very complex operation that is affected by many factors. Climate change can affect not only cloud coverage but also runway visual range, precipitation (snow and rain), runway surface condition such as snow and ice, wind speed and direction, and other factors that can affect an aircraft's ability to operate at an airport. However, most of these conditions are correlated. Although a deeper investigation may find stronger evidence that climate change has impacted airport operations in other ways, the fact that cloud ceiling was not found to be affected does not indicate that climate change has significantly affected air access to the northern remote communities.