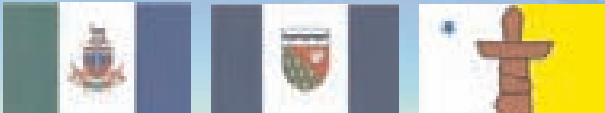




# NORTHERN CONNECTIONS



**A Multi-Modal Transportation  
Blueprint for the North** FEBRUARY 2008



**Government of Yukon**

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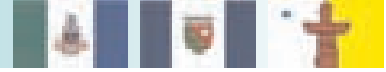
Government of Yukon

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## MESSAGE FROM MINISTERS



It is our pleasure to present *Northern Connections: A Multi-Modal Transportation Blueprint for the North*, a pan-territorial perspective on the transportation needs of Northern Canada. This paper discusses a vision for the development of northern transportation infrastructure in the context of a current massive infrastructure deficit.

Research has proven that modern transportation infrastructure brings immense benefits. The northern transportation system of the future must support economic development, connect northern communities to each other and to the south, and provide for enhanced sovereignty and security in Canada's north.

This document complements a comprehensive national transportation strategy – *Looking to the Future: A Plan for Investing in Canada's Transportation System* – released under the auspices of the Council of the Federation in December 2005.

The three territories support the details contained in *Looking to the Future* that call for a secure, long-term funding framework for transportation infrastructure that will benefit all Canadians. Equally important, northern territories stress that this national strategy – and any subsequent funding mechanisms that follow – must account for unique northern needs and priorities, which would be largely overlooked using nation-wide criteria only.

This paper is also consistent with *A Northern Vision: A Stronger North and a Better Canada*, the May 2007 release of a pan-territorial vision for the north. A central theme of *A Northern Vision* is that we invest in our infrastructure in a manner that will respond to the social concerns and economic opportunities of northern people.

It is our perspective that the North's time is now. Within this context, we believe that immediate action is required on our transportation systems. We feel that this paper is a solid starting point for future investment. We look forward to our ongoing dialogue with other governments in this regard.



**Honourable  
Archie Lang**

*Minister of Highways  
and Public Works*



**Honourable  
Norman Yakeleya**

*Minister of Transportation*



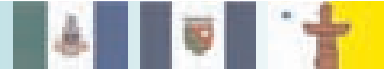
**Honourable  
Patterk Netser**

*Minister of Economic  
Development and Transportation*





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## I. INTRODUCTION

Canada's North – Yukon, Northwest Territories and Nunavut – comprises 40 per cent of Canada's land mass, contains two-thirds of Canada's marine coastline, shares 14 per cent of the total U.S./Canada border and interfaces with European interests in the Eastern Arctic. Despite this broad geographic reach, historically there has been limited Canadian political interest in the North.

Time has changed this. Yukon has successfully negotiated a devolution agreement for administration and control of its lands and resources. Most NWT and Yukon First Nations have settled Land Claims Agreements and the entirety of Nunavut was created from the largest Land Claim Agreement in the history of Canada. Territorial and aboriginal governments have matured and have growing confidence in their ability to contribute to the Canadian way of life.

The North is now recognized as a treasure chest of non-renewable and renewable resources that will benefit all Canadians. Diamond, precious gem/metal and base metal mines in production, being constructed or proposed in the territories have created the momentum for vibrant and healthy economics. The energy sector is also the focus of intense activity and great potential in the North. Potentially two new pipelines could see natural gas flowing from the Mackenzie Delta and from Alaska's North Slope to southern markets within a decade. And the hydroelectric potential is world class, rivaling that of James Bay or Churchill Falls without the need for large dams or flooding.

This resource potential offers an unprecedented opportunity for the North to become a key contributor to the Canadian and world economy.

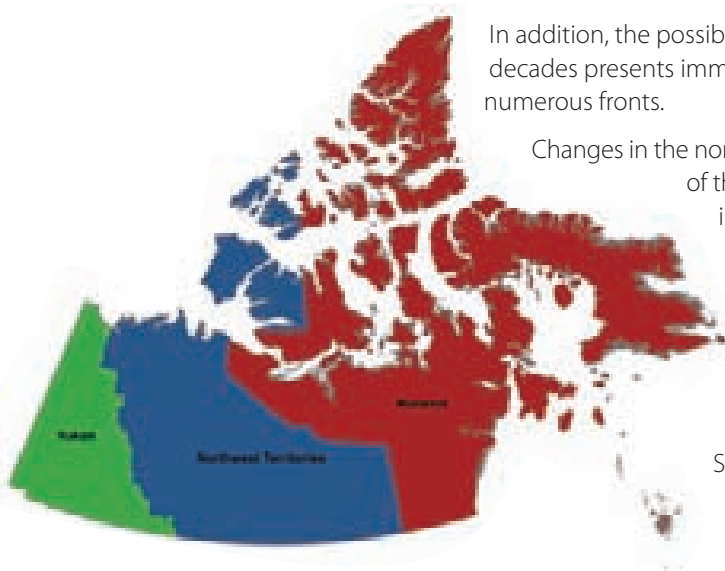
Time has also changed a long held perception that the North is geographically distant from large markets. In the current global economic context, the North is now being considered as a gateway to both Asia and Europe. The perspective on the North needs to be modernized, simultaneously focused on both the traditional 'north-south' corridors and incorporating a new 'east-west' viewpoint in order to fully capture all the possible benefits that the north may offer in the future.

Several northern infrastructure projects, for example, currently in the early stages of study and/or development, support this claim – that a modernized view of the north is needed – and offer economic advantages that should be explored further. These include potential development of the Port of Skagway, the Alaska-Canada Rail Link, the Mackenzie Valley Highway, an "over-the-top" marine delivery route and the Nunavut-Manitoba Highway. Each of these offers potential to provide strategic links across the north, from the north to the south, and between Canada and important global markets.

In addition, the possibility of an ice-free Northwest Passage over the coming decades presents immeasurable opportunities for Canada's polar region along numerous fronts.

Changes in the north go beyond economics. As the geopolitical landscape of the 21<sup>st</sup> century world continues to evolve, so too does the importance of the northern regions of nation states, such as Canada. The safety, sovereignty and security of our land are contingent on our ability to access our northernmost regions in an efficient and effective manner. And this access must be two-way. Northern inhabitants require that same efficiency and effectiveness in their access to the rest of the country.

Simply put, the north's importance as a Canadian region is emerging.



And this ever-changing context has highlighted concerns of accessibility in the north. Whether for support of economic development, the enhancement of Canadian sovereignty or the simple matter of equality of northern citizens with those of other areas of Canada, access to and within these regions is integral. Northern transportation infrastructure, where it exists, is ageing and in need of significant re-investment.

In sum, immediate financial investment in northern transportation is critical.

As is the case in all regions of the country, the transportation network in the north is a key part of the social and economic fabric. It links northern communities to the resources on which their economies are based, to each other and to the outside world. As such, it plays a vital role in the economic health of communities, regions and territories. While the primary mode may differ across territories, transportation is the lifeline that supports communities.

Northern governments are well aware that transportation investment competes daily with other key investment opportunities in our region. We are also cognizant of the fact that key funding mechanisms exist in the north, such as the Canadian Strategic Infrastructure Fund (CSIF) and the Airports Capital Assistance Program (ACAP) and the Building Canada Infrastructure Fund.

But more needs to be done. The northern world is changing rapidly. And current northern infrastructure is not equipped to deal with this change.

Northern governments, as has been articulated at recent meetings with government officials from across Canada – at the federal, provincial and territorial levels – are supportive of investment that targets these specific northern needs. As such, a Strategic Northern Infrastructure Fund is required in Canada.

The purpose of this paper is to provide a vision for the future development of the northern transportation system. This will be done by highlighting current deficiencies in the system, the challenges and opportunities faced by transportation, and options for future action.

## II. BACKGROUND AND CONTEXT

A national transportation strategy, developed under the auspices of the Council of the Federation, was released on December 8, 2005. This initiative – *Looking to the Future: A Plan for Investing in Canada's Transportation System*<sup>1</sup> – encourages the development of a national multi-modal<sup>2</sup> transportation system that supports economic growth, provides a high quality of life for Canadians and sustains a healthy environment. Principles from this strategy that support Northern Connections include the following:

- encourages economic growth, competitiveness and productivity;
- encompasses all modes of transportation in a balanced and integrated way;
- includes all provinces and territories and recognizes differing infrastructure needs;
- improves safety, security and efficiency on corridors serving strategic gateways and key economic nodes;
- facilitates interprovincial/territorial and international trade and tourist traffic;
- improves access to strategic transportation components that currently have ageing, congested or absent highway connections;
- promotes innovation and efficiency;
- is environmentally responsible;
- protects Canadian sovereignty; and
- connects Canada from coast to coast to coast.

The result of extensive provincial and territorial dialogue, this national strategy articulates that a massive transportation infrastructure deficit exists in Canada and outlines a need for

<sup>1</sup> The Council of the Federation, *Looking to the Future: A Plan for Investing in Canada's Transportation System* (December 2005). This paper can be found at [www.councilofthefederation.ca/ntsstrategy/nts.html](http://www.councilofthefederation.ca/ntsstrategy/nts.html).

<sup>2</sup> A multi-modal system is one that supports all modes of transportation, including air, road, sea and rail.

some \$97 billion in capital investment over the next 10 years. The strategy paper proposes that a portion of the funds required for this important investment in transportation should come from federal fuel tax revenues. Allocation of fuel taxes in this manner, under the banner of a new Strategic Transportation Infrastructure Fund, will improve the current ad hoc method of federal investment in transportation and provide the framework for long-term, sustainable planning.<sup>3</sup>

As a follow-up to the release of *Looking to the Future*, provinces and territories agreed to develop separate strategies unique to the needs of their relevant jurisdictions, along all modes of transportation – air, marine, rail and road. In the case of British Columbia, Alberta, Saskatchewan and Manitoba, a joint ‘Western Canada’ strategy – entitled *A Call to Action* – was released in July 2005. Quebec has also followed suit. Strategies are forthcoming from Ontario, as well as a joint release from the Atlantic Provinces.



In a similar fashion, Canada’s three northern territories – Yukon, Northwest Territories and Nunavut – have agreed jointly to develop a northern transportation blueprint. Although the territories’ priorities were included in *A Call to Action*, this inclusion did not involve the kind of detail required for a true northern perspective. Given the unique needs of the north, provinces and territories agree that a separate paper on northern transportation is needed.<sup>4</sup>

For example, while the criteria laid out in the western document were appropriate for certain portions of the northern transportation infrastructure (i.e. those portions either in capital cities, or with a north-south ‘connector’ focus), much of the north will be missed in this ongoing federal-provincial dialogue. What is required are transportation priorities for the region based on a set of criteria specific to the north.

This northern transportation blueprint captures the priorities of each territory – via each transportation mode – and also articulates a joint northern transportation vision.

Along this vein, the three territories state the following:

- The three territories support the National Transportation Strategy (NTS), endorsed by the Council of the Federation (CoF), which calls for a secure, long-term funding framework for transportation infrastructure rehabilitation and development that will benefit all Canadians.
- The NTS, and all related funding mechanisms, must account for unique northern needs and priorities, which would be largely overlooked using nation-wide criteria only.

### III. NORTHERN CHALLENGES<sup>5</sup>

As noted in the introduction to this paper, the opportunities – both economic and otherwise – in the north are immense. There are, however, challenges to overcome to realize these opportunities.

First and foremost, the north has transportation systems and corridors that are under-developed and, in the case of Nunavut highways, non-existent. Where this infrastructure does exist, much of it was built decades ago, well below the standards required for large-scale development. Where infrastructure was originally built to standard, significant rehabilitation is now required.<sup>6</sup>

<sup>3</sup> For more details, please see *Looking to the Future*, op.cit.

<sup>4</sup> Separate/stand-alone Yukon, Northwest Territories and Nunavut transportation strategies will also be published, in a manner consistent with the messages of this ‘northern’ approach.

<sup>5</sup> Some of the subject matter in this section comes from *Looking to the Future*, op.cit., p. 14-5

<sup>6</sup> There are exceptions, portions of the the Alaska Highway, for example.



Second, resource development is stretching this infrastructure to its limit. The lack of an effective and reliable multi-modal transportation system could eventually discourage investment by companies in future resource development and transportation gateway proposals.

Other challenges are also emerging. In these times of shifting geopolitical landscapes, globalization, climate change and energy concerns, the focus on Canada's North and issues around northern safety, security and sovereignty is greater than it has ever been.

Many northern communities – such as those along the coastline of Nunavut – were originally located for sovereignty purposes and the convenience of federal administrators, rather than for economic opportunity or transportation efficiencies. While the sovereignty role of these communities remains important, lack of infrastructure development has not afforded them opportunity to benefit from adjacent maritime or land-based resources.

The push for globalization has seen the Government of Canada sign new air liberalization agreements with other nations, resulting in increased polar and high latitude air traffic. Many of these new flights will use polar and high latitude routes through Canadian airspace and, if required, will use major airports in the North for emergency or technical stops. The use of these airports raises major infrastructure, operating and liability issues. Canada, as a signatory, has a responsibility to ensure the infrastructure and services are available to meet our obligations under these international agreements.

Closely related is the impact an increasingly burdensome regulatory environment is having on northern jurisdictions. Air travel is a classic example of this challenge. Given an ongoing, and essential, focus on traveler safety, air carrier regulations continue to escalate within Canada. As Transport Canada officials work to harmonize air carrier regulations with their American and European counterparts, agreements may not take into account the impact the resulting regulations have on small service providers in the remote regions of the country, particularly the North. All three northern territories have communities where the primary access is by air. Changing federal regulations in air travel can have a major impact on these communities.

Climate change is also a significant issue in the North, a region with a proven sensitive ecology. With significant reductions in the Arctic ice pack now occurring and having a major impact on coastal conditions, the Northwest Passage is coming under increased international pressure for use as a viable alternative to the southern marine routes. Use of these sea routes will require increased capability in emergency response and national security patrols.

As well, permafrost decline across the North is leading to significant infrastructure degradation. Variable weather conditions are affecting shipping seasons, as winter roads and ice bridges are no longer as reliable as in the past for trucking operations. In sum, while climate change represents a significant challenge for northern ecosystems, it also raises opportunities, such as increased access via the Northwest Passage.

Northern safety, security, and environmental integrity are dependant upon transportation infrastructure. Currently this infrastructure is completely inadequate to respond to environmental emergencies, natural disasters, non-environmental accidents, and increasing threats to Canada's sovereignty. In the three northern territories, only one road, the Dempster Highway, crosses the Arctic Circle. It does not however connect to the Arctic Ocean on a year-round basis. No reliable access to Canada's northern coast currently exists.

Greater recognition of the strategic importance of northern communities and people to the nation's identity, economy, security and sovereignty is required. All Canadians will benefit from a North that is connected to the rest of Canada by an effective and efficient multi-modal transportation system. As such, all Canadians must accept some responsibility for the costs associated with providing this system.

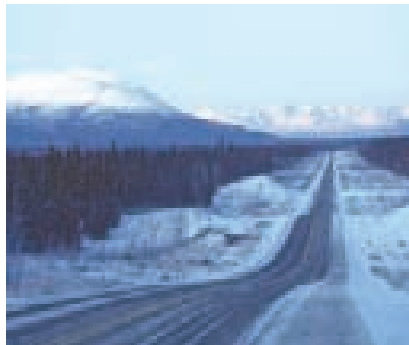
This illustrates a final, and key, challenge faced by the northern territories. While the geographic area covered by Yukon, Northwest Territories and Nunavut is vast, at nearly 40 per cent of Canada's total land mass, the territories represent only 0.3 per cent of total population in the country. As such, limited ability exists in the North to assume the tremendous financial burden posed by the transportation system, particularly if funding programs are based primarily on per capita calculations. The fiscal capability to provide transportation systems in the North is seriously constrained and represents a major impediment to much-needed investment.

## IV. THE CURRENT SYSTEM

In light of this rapidly changing context and the demands it brings, the three northern territories have significant transportation priorities that must be addressed. While the three territories face similar challenges, the mistake should not be made of categorizing Canada's northern territories as one single entity. Each of the territories is at different stages of its development. Each, due to its unique geography and history of investment, has distinct transportation needs to address the challenges it faces today, and the expected challenges of tomorrow.

Each of the territories also relies on a distinctly different transportation system to connect communities to adjacent resources, to each other, to southern Canada, or to markets in

the rest of the world. For Yukon, roads and airports are integral to increased sustainability. The transportation system in the NWT depends on all modes including highways, winter roads, rail, air and marine services. Nunavut currently relies solely on air and marine infrastructure, though neither mode can provide access to its resource base. In each of these systems the infrastructure is underdeveloped, ageing and in need of investment.



### A. YUKON TRANSPORTATION<sup>7</sup>

Yukon transportation is largely focused on road and air access, in providing service to its 31,000 residents spread out over 483,000 square kilometres and 17 communities.

#### 1. Yukon Roads

Yukon maintains 4,800 kilometres of road, making it the third smallest in the country ahead of only NWT and Nunavut. Within this highway system, 250 kilometres are paved and 1,900 kilometres surfaced with bituminous surface treatment (BST), a thin asphalt membrane. The remainder is gravel. The Yukon highway system contains 129 bridges.

All Yukon communities, except one, are connected by this system (Old Crow, Yukon's most northerly community is accessible only by air). Given its small population base, Yukon has the highest per capita road network in the country with more than 155 kilometres of road for every 1,000 residents.

The busiest section of Yukon highways, in and around the capital city of Whitehorse, sees about 3,700 vehicles per day. The stretch of the Alaska Highway from Whitehorse south-east to Watson Lake carries about 700 vehicles per day. Most other Yukon highways see traffic in the 100-150 vehicles per day range. Traffic patterns throughout the territory are largely seasonal.

<sup>7</sup> This section is adapted from Yukon Highways and Public Works, *Prospecting Corridors to Growth – A Transportation Vision for Yukon*, Spring 2006.

**Current Challenge:** While Yukon has reasonably modern road infrastructure for a small, northern territory, there are gaps. The current highway system is ageing in some areas and incomplete in others. Modern highways are required to support economic development, particularly in the resource sector and tourism industry, and as a means of increasing Canadian sovereignty and security in the north. The Klondike and Dempster Highways, for example, can be used to support the development of the Mackenzie Valley Pipeline, as well as for emergency access in the event of disasters in the Beaufort Sea. The Robert Campbell Highway provides access to a mineral rich area of Yukon. Certain sections of the Alaska Highway, particularly those in northern British Columbia, have fallen below modern highway standards and require upgrading before traffic levels can rise significantly. Finally, roads required to access Yukon resources, those connecting to the primary highway system, are either non-existent or in need of major re-investment.

## 2. Yukon Airports

The Yukon airport system contains one national, two regional and 10 community airports, as well as 16 aerodromes. These facilities are exclusively operated by the Government of Yukon.

Yukon is serviced by three scheduled carriers – Air Canada, Air North and First Air – as well as several local and international charter companies.

Some 200,000 passengers travel through Whitehorse International Airport each year, making its size comparable to that of the airport serving Saint John, New Brunswick.

**Current Challenge:** Yukon airport infrastructure is ageing and/or inadequate. Changing federal regulatory standards are placing increased stress on Yukon airports. Upgrades are required, particularly at the Whitehorse Airport, to enable it to respond to federal commitments around polar over-flights and airport security, and to prepare for future development as an international port of entry. Other airports require modernization to support resource development, tourism-related activities and security/sovereignty concerns.



## 3. Yukon Marine

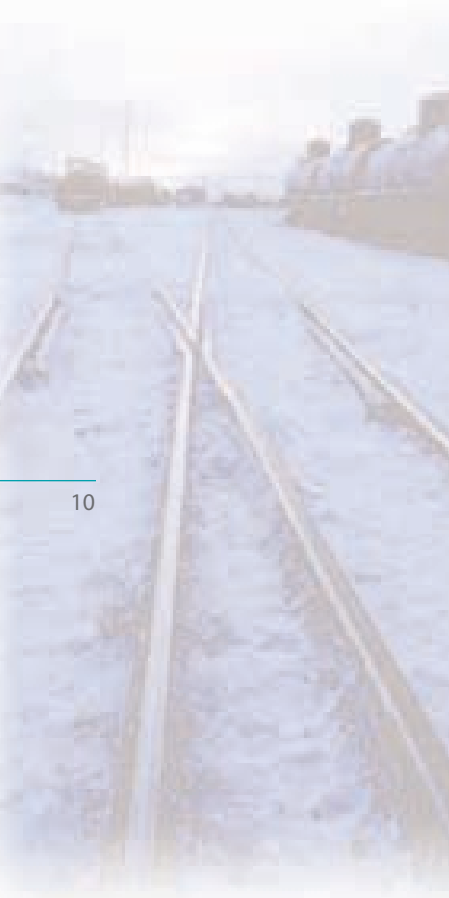
While the northern tip of Yukon touches the Beaufort Sea, there are no communities on this coast-line. Yukon has no existing marine infrastructure, although there are strong reasons to believe port infrastructure in north Yukon – an arctic port – will be required sooner rather than later. As the possibility of an ‘opened-up’ Northwest Passage becomes more real each day, the importance of such an arctic port grows.

Yukon has strong historic links to the marine transportation network via Alaska, its neighbour to the west, through ports such as Skagway and Haines. Both are easily accessible along Yukon and Alaska highways and have long been used by industry in Yukon, particularly the mining and tourism industries. Alaskan ports are an integral part of the Yukon transportation system and should be considered as a strategic link in any such assessment of this system.

A major study assessing various port option scenarios for Yukon was released in June 2007.<sup>8</sup>

**Current Challenge:** While Yukon has the potential for significant North Slope economic activity that could benefit from access to the Arctic Ocean for shipping purposes, there is no secure coastal marine facility available. Significant Canadian sovereignty concerns will be revealed with the opening up of the Northwest Passage. Northern port infrastructure will help address these concerns.

<sup>8</sup> These results are available at [www.economicdevelopment.gov.yk.ca/](http://www.economicdevelopment.gov.yk.ca/).



#### 4. Yukon Rail

Historically, the White Pass and Yukon Route (WP&YR) provided passenger and freight rail service from Skagway, Alaska to Whitehorse, Yukon. This service ended in 1982.

With the rebirth of WP&YR as a popular tourist attraction in 1988, trains are running once again from Skagway to Fraser, British Columbia on a daily basis during the summer months and, less frequently, to Bennett, British Columbia and Carcross, Yukon.

The WP&YR now carries over 400,000 passengers annually from Skagway to Fraser, the first 40 miles of the original 110 mile line. Now that service has been extended into Carcross, WP&YR is the only operating rail line in Yukon.<sup>9</sup>

A study has recently been completed investigating a possible rail link from Alaska and Yukon to the broader North American rail grid.<sup>10</sup>

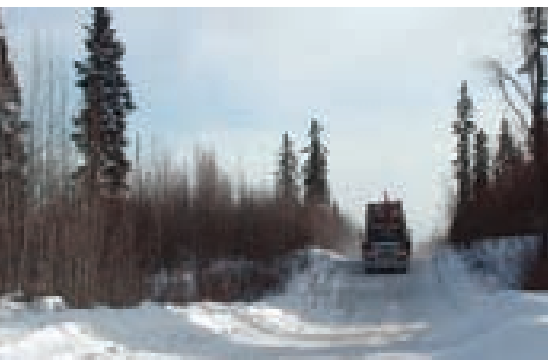
**Current Challenge:** The current challenge involves initiation of any transportation developments based on the results of the Alaska-Canada Rail Link Study. It is believed such development will enable further resource development in the north by accessing mineral and oil & gas properties once thought uneconomic due to transportation constraints. It would also provide an alternative North American gateway to the Pacific Rim, via northern British Columbian and Alaskan ports. An example would be that the Port of Skagway is approximately two sailing days closer to China than Vancouver.

### B. NORTHWEST TERRITORIES TRANSPORTATION<sup>11</sup>

With a land mass of almost 1.2 million square kilometres – over 10 per cent of Canada's land mass – the Northwest Territories has considerable transportation needs. Access and mobility among the 41,000 residents spread out over 34 dispersed small communities is restricted. The transportation system which connects these communities is underdeveloped and in need of new investment to sustain resource development, increase mobility and intercommunity travel, provide better access to essential services and lower the cost of living.

#### 1. NWT Roads

NWT has approximately 2,200 kilometres of all-weather roads and an additional 1,450 kilometres of publicly-constructed winter roads. In addition, there are several privately-constructed winter roads throughout the territory for oil and gas development and mine re-supply, including the 570-kilometre winter road that provides access to the diamond mines north of Yellowknife. The highway system also includes five vehicle ferries that operate in the summer months and are replaced by ice crossings in the winter months.



Land based transportation in the NWT is very limited. Currently, only one-third of the land area of the Northwest Territories is within 100 kilometres of an all-weather road and only 19 per cent of residents have year-round highway access. Sixty-five per cent of NWT residents, including those in the territory's capital city, Yellowknife, do not have any highway access for one or two months of the year during the seasonal transition between ferry service and ice crossing construction. Thirteen

per cent of NWT residents only have land access via winter road and the remaining three per cent do not have any land transportation access at all.

<sup>9</sup> See [www.whitepassrailroad.com](http://www.whitepassrailroad.com)

<sup>10</sup> For details [www.economicdevelopment.gov.yk.ca](http://www.economicdevelopment.gov.yk.ca)

<sup>11</sup> Most NWT information found in *Moving Forward*, Department of Transportation, Government of Northwest Territories, 2003.

**Current Challenge:** The NWT highway system was built to minimum surface and geometric standards. With the exception of the southern route that connects Yellowknife and Hay River to northern Alberta and the sections that have been reconstructed through the recent federal funding, NWT roads are not up to the standards required to sustain existing, or facilitate future, industrial development. Increasing industrial traffic, mainly attributed to diamond mine and oil and gas activity, has accelerated the deterioration of the highway system, resulting in the need for massive reconstruction and increased maintenance efforts. Compounding these challenges, the NWT government does not yet receive resource royalties from this development to address the corresponding increasing costs associated with maintaining a safe and effective highway system.

Most communities in the NWT do not have all season road access. Community access roads and winter roads must be improved to increase mobility, facilitate economic diversification, lower the cost of living and improve the quality of life for residents. Shorter and warmer winters, with increased snow precipitation in recent years, have also resulted in increased effort to construct and maintain winter roads. Many ice crossings have been replaced by permanent bridge structures on the Mackenzie Valley Winter Road and more are required. In some cases, such as in the Tlicho region, winter road realignment or conversion to all-weather standard may be required.

## 2. NWT Airports

Because of its limited road infrastructure, NWT relies heavily on its air system for mobility and re-supply. The Government of NWT operates 27 community-based airports. In addition there are numerous privately operated air strips for resource development, such as the Diavik and Ekati diamond mines.

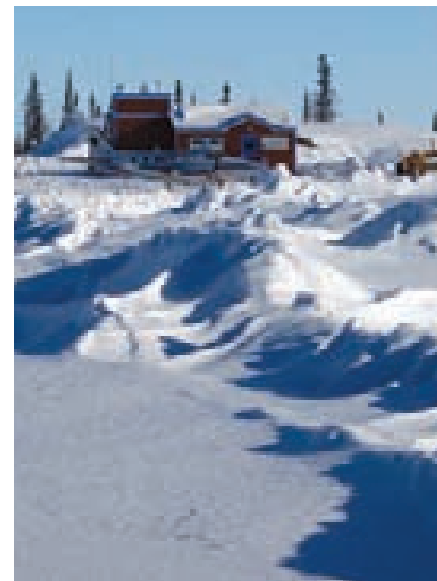
Air services are provided by three major carriers, Canadian North, First Air and most recently Air Canada – and by several regional carriers, including Air Tindi, Northwestern Air Lease, Buffalo Air, Northwright Air and Aklak Air, to name a few. The main hub in the NWT is Yellowknife with regional hubs in Inuvik and Norman Wells and community airports in most other communities.

Approximately 500,000 passengers pass through NWT airports each year. In recent years air traffic has grown at an approximate rate of seven per cent per year due to industrial expansion.

**Current Challenge:** The NWT has a fairly well developed air system, however, resource development, regulatory changes, the opening of polar routes and the lifespan of infrastructure have required, and will continue to require, upgrades of air terminal buildings, airstrip resurfacing and/or extension and in some cases the construction of new community airports altogether. The NWT has commissioned two studies to examine the current impacts of development on the air system and to identify the future air system infrastructure upgrades that will be required.

## 3. NWT Marine

The marine and rail systems in the NWT are primarily used to transport bulk commodities – mainly fuel – for industrial and community use. The marine re-supply system in the NWT extends from the rail/truck to barge facilities in Hay River and truck to barge facilities in Fort Simpson through Great Slave Lake, up the Mackenzie Valley and into the high Arctic. This system also extends south through the Athabasca system and through to the Alberta oil sands. NWT marine transportation infrastructure is privately owned. NTCL is the largest barge shipping company, based out of Hay River. Other companies exist outside of Hay River including Cooper Barging in Fort Simpson and a new operator, Horizon North. Four communities depend exclusively on this marine re-supply of bulk commodities (Lutsel'ke, Paulatuk, Sachs Harbour and Ulukhaktok). Eleven communities are served by both marine and all-weather/winter road access.





**Current Challenge:** With increasing activity in the oil and gas sector and the opening up of Arctic passages, “over-the-top” shipping routes and marine shipping technological advances, the NWT marine route will gain increasing importance. This route will be an integral part of the supply chain for the proposed Mackenzie Gas Pipeline and is gaining the interest of Alberta oil companies for “over-the-top” re-supply. Upgrades may be required to sustain the expected levels of activity on this re-supply route.

Given the considerable interest in this supply route, the Government of NWT is currently undertaking a study of a northern marine transportation route into the Alberta oil sands and the role of Tuktoyaktuk as a marine service centre. This study at a high level will examine what opportunities this route presents to the NWT in terms of direct employment, value added employment, marine competition and backhaul opportunities. It will also consider the initial environmental impacts of this route.

Some community re-supply sites also need upgrading. Many NWT arctic coastal communities have little or no marine infrastructure, such as in Sachs Harbour where the beach serves as the docking face and re-supply receiving area.

#### 4. NWT Rail

There is one rail line in NWT, the Mackenzie Northern Railway, used primarily in the transport of bulk commodities from Alberta into Enterprise and Hay River, where they are transferred to truck or barge. This rail link is important for community and mine re-supply. Approximately 50 per cent of all surface freight to enter NWT comes in via this rail line and

it is an important link that helps alleviate the high cost of living in the North. This line, including 121 kilometres of track in NWT, is owned and operated by CN. It connects into the larger North American grid in Alberta.

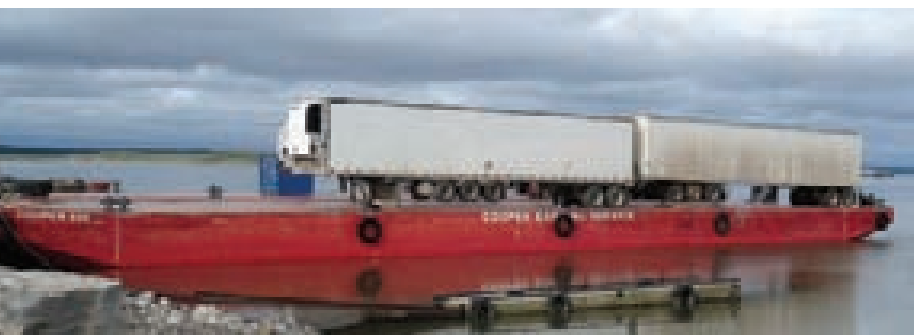
**Current Challenge:** The Government of the Northwest Territories is concerned about the long-term viability of the territory’s only rail link, which is set to come under increased pressure as the Mackenzie Gas Project and other resource development moves forward. Currently there are weight restrictions on

the northernmost most part of the rail link, from High Level to Hay River. The current weight restriction is 220,000 pounds, while the national standard is 286,000 pounds. The Mackenzie Northern Railway requires capital investment to rehabilitate its track structure, including the 310.5 kilometre section from High Level to Hay River. CN has already begun improvements, however, further investment will be required.

#### C. NUNAVUT TRANSPORTATION

Nunavut is the only jurisdiction in North America that remains entirely isolated from the National Highway System and the North American Trade Corridor. The cost of living in Nunavut is the highest in North America, and the cost of development has so far discouraged serious investment in the territory’s abundant wealth. That cost of development is largely due to Nunavut’s limited transportation options.

The Nunavut transportation system is restricted to accessing the 26 communities spaced along 40 per cent of Canada’s coastline. There are no roads outside the communities, and only the most rudimentary beach landing sites for marine re-supply or sea-lift. Building supplies and fuel are brought in by ship, while most food and consumables are transported to destination by air.



There has been almost no investment in transportation infrastructure in Nunavut since the 1970's, when the community airports were constructed. Many of these airports are now inadequate for the needs of the growing population, or for modern, efficient aircraft.

## 1. Nunavut Roads

Nunavut's border spans three time zones, and encompasses a full 20 per cent of Canada's land mass. Ninety seven per cent of that land, and its physical resource base, is currently stranded over 100 kilometers from transportation infrastructure of any description.

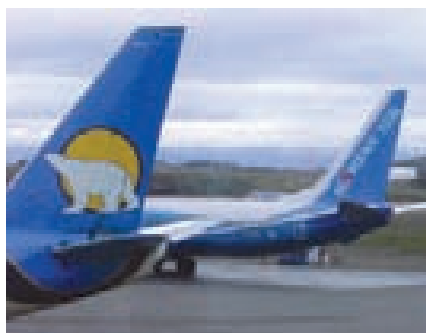
Nunavut has no road infrastructure between its 26 communities, of which 17 are above the Arctic Circle. The 30,500 inhabitants of this territory rely on air for their essential needs, but the air transportation system provides no access beyond the coastline. The only surface transportation options are snowmobile and all-terrain vehicle which, in practical terms, are safely used by only the most experienced harvesters and travellers.

**Current Challenge:** Accessing the wealth of Nunavut's land will require significant construction of inland and inter-community roads. The known mineral resources of the territory are largely contained in the Slave and Churchill Geological Provinces, and hydro-electric potential exists in the rivers draining into Hudson Bay. Corridors from Bathurst Inlet, and through the Kivalliq from Manitoba to Rankin Inlet, are needed to bring these deposits into viability. Both these corridors will also provide competitive options for community re-supply, and will reduce costs in nearby communities.

## 2. Nunavut Airports

All 26 communities in Nunavut contain an airport, of which only two have paved runways, with the remainder gravel. Six scheduled carriers service the territory. About 250,000 annual passengers pass through these airports, with nearly half utilizing Iqaluit, the territorial capital.

The most modern of these airports were last improved in the 1970s, and the design aircraft of the time have since been phased out of service. Equivalent sized modern aircraft are unable to access several of the airports with economic payloads. Other



communities cannot be accessed by these aircraft at all, leaving anomalies in the system, where aircraft are maintained for use on a single destination route.

The cost of a return trip from a remote community to Ottawa is approximately \$5,000 and the Government of Nunavut spends more on travel and transportation than it allocates for capital across all departments.

Because there are no other options for year round transportation, air freight into Nunavut equates to one thousand kilograms per person per year. Costs of general freight to a community from its southern departure vary, but can be as much as \$18 per kilogram.

**Current Challenge:** Nunavut airports are stressed by safety and capacity issues. Much of the air infrastructure is outdated and some of it is inadequate. The most serious inadequacies threaten Nunavut's ability to ensure essential services are available in all communities. Given Nunavut's size, three gateways are required. None of the three gateway airports were planned or constructed for current demand, and the lack of gateway capacity impacts all upstream costs.

Several growing communities in the territory are accessible only by Short Take Off & Landing (STOL) aircraft. These communities cannot be integrated into an efficient system of properly sized aircraft and logical routing, and limit the carriers from considering competitive alternatives. The limited capacity of STOL aircraft cannot accommodate present demand in these communities, and discourages economic growth.

### 3. Nunavut Marine

All 26 Nunavut communities have tidewater access, although the only port in the territory – at Nanisivik – is not associated with a community. With a short shipping season of from one to five months, Nunavut's primitive landing locations are used for an annual re-supply of fuel, oil and bulk goods.

Nunavummiut are maritime people, and boats are commonly used for intercommunity travel and transport. Until recently, boats outnumbered private vehicles in most communities. Despite this reliance on, and connection to the sea, there are not even basic breakwaters or marshalling areas in most Nunavut communities.

**Current Challenge:** The marine system contains no ports, no up-to-date charts, few navigational and primitive landing options for ships, resulting in damage to these vessels and the transported goods. Unimproved beach landing sites do not provide predictable access. Iqaluit, notably, has experienced times when cargo ships can not offload, and had to remain anchored until ice cleared from the sealift beach.

The waters surrounding Nunavut contain the only growth fishery in Canada, and quotas for Nunavummiut have been increasing in recent years. The potential of the inshore fishery cannot be realized without adequate harbours. And the offshore fishery quotas will continue to be landed in other jurisdictions and other countries until marine infrastructure is in place.

### 4. Nunavut Rail

There are currently no rail lines in Nunavut.

## V. THE FUTURE: NORTHERN TRANSPORTATION VISION

The northern transportation system of the future will support economic development and diversification, connect northern communities to each other and to the south, and provide for enhanced sovereignty and security in Canada's North. An improved northern transportation system will facilitate a prosperous and sustainable future for northerners.

There are currently a number of northern transportation projects being considered – with significant national implications – that support these goals, including the Alaska-Canada Rail Link, Mackenzie Valley Highway and Manitoba-Nunavut Highway.

As presented in *Looking to the Future*, bringing the transportation systems of Yukon, Northwest Territories and Nunavut up to the required modern standard requires a \$2.5 billion investment over the next decade.

Specifically, the three territories support the vision of the national transportation strategy, which identifies criteria for a strategic system.<sup>12</sup> Using these criteria as a base would see future northern investment in:

- (i) **Airports** – both National Airport System (NAS) and others as defined – including airport facilities in Cambridge Bay, Dawson City, Inuvik, Iqaluit, Norman Wells, Rankin Inlet, Whitehorse and Yellowknife.

<sup>12</sup> Criteria under *Looking to the Future* are articulated under all modes and include categories such as airports, marine ports, freight rail, intercity passenger rail, highways, Canada-US border crossings, urban road, urban transit and ferries. Those that capture northern infrastructure are listed above. For further details, please see *Looking to the Future*.





(ii) **Marine Ports**

– existing Canadian Port Authorities (CPA) ports and others as defined – including Bathurst Inlet, Hay River, Iqaluit, Rankin Inlet and Skagway.

(iii) **Rail Lines** – current core and non-core lines as defined – including further study on the proposed Alaska-Canada Rail Link and the Mackenzie Northern Railway.

(iv) **Highways** – all National Highway System (NHS) routes and inter-modal linkages – including the Alaska Highway, Klondike Highway, Dempster Highway, Ingraham Trail, Mackenzie Highway and Yellowknife Highway, as well as the proposed Nunavut-Manitoba Highway, Mackenzie Valley Highway from Wrigley to Tuktoyaktuk and road connection, through the Slave Geologic Region, with or from Bathurst Inlet.



As stated, the three territories support the criteria used in the establishment of the national transportation strategy, and the inclusion of infrastructure noted above (see Exhibit 1: Strategic Northern Transportation Network.)

However, this list is incomplete. Due to the complexities in establishing nation-wide criteria that can be equally applied to all jurisdictions, significant northern transportation infrastructure, strategic to northern territories, was missed by this analysis. And while this infrastructure does not experience the volumes of traffic as those in southern Canada, it is equally important, but for different reasons (as outlined throughout this paper).

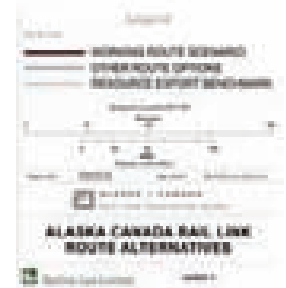
As such, the three northern territories also put forward the following list of strategic infrastructure that, like those listed under the national transportation strategy, require modernization. This list will be further assessed in stand-alone transportation strategies forthcoming from each northern jurisdiction, but will be listed here for illustrative purposes:

a. Yukon:

- Watson Lake, Old Crow and Community Airports
- Robert Campbell Highway
- Regional Access Road and Mining Road Programs
- Yukon River Bridge at Dawson City
- Port Access for Yukon (Skagway, Haines or Arctic Port)

b. NWT<sup>13</sup> :

- Deh Cho Bridge on Highway 3
- Improvements on Fort Smith Highway (No. 5), Fort Resolution Highway (No. 6), Liard Highway (No. 7) and Dempster Highway (No. 8)
- Mackenzie Valley Winter Road, Tlicho Winter Road, Tuktoyaktuk Gravel Access Road and other community access road improvements
- Airport improvements in small communities such as Colville Lake.
- Facilities to support “over-the-top” marine shipping



<sup>13</sup> Based on *The DOT Highway Strategy, Investing in Roads for People and the Economy 2000, Corridors for Canada: An Investment in Canada's Future 2002, Corridors for Canada II: Building on Our Success 2005 and Connecting Canada: Coast to Coast to Coast 2005.*

c. Nunavut:

- Pangnirtung and Kimmirut Airport relocations
- Intercommunity Access Road and Resource Road Programs
- Harbour, breakwater, and Marshalling Area Program

## VI. INFRASTRUCTURE INVESTMENT

Addressing the massive transportation infrastructure deficit in the north will require an investment of some \$2.5 billion. The three northern territories support the concepts presented in *Looking to the Future*, pertaining to the assignment of federal fuel tax revenues to transportation investment. Given that these taxes are, in fact, a tax on transportation, they should be used in a manner that supports the construction, rehabilitation and maintenance of transportation infrastructure.

The provinces and territories believe that the unallocated funds from the federal fuel excise taxes must be committed to a **Strategic Transportation Infrastructure Fund** and distributed on an equitable basis, to provide a stable and adequate core funding source for capital infrastructure investments. The funding formula must respect jurisdictions and allow for flexibility and autonomy in investment decisions that provinces and territories will make to prioritize projects based on their individual needs.<sup>14</sup>

The unallocated portion of the federal fuel tax will not meet all the needs over the coming decade, but it will form a positive step in the right direction. In partnership with provinces, territories, municipalities and the private sector, additional funds can be secured to bridge the gap between the demonstrated need and the federal fuel tax funds available.

While northern territories fully support this concept, one further step should be considered from a northern perspective. The three northern territories support a special northern component of the Strategic Transportation Infrastructure Fund reflecting unique northern needs – and the strategic importance of northern infrastructure – that will likely be missed using investment criteria for larger, southern jurisdictions.

It should be noted that provinces across Canada agree that northern infrastructure is of strategic national importance and recognize that federal funding specific to northern needs is required. *Looking to the Future* states that:

Greater recognition of the strategic importance of northern transportation infrastructure to the Nation's economy, security and sovereignty is required. All Canadians will benefit from a North that is connected to the rest of Canada by an effective and efficient multi-modal transportation system. As such Canadians must accept some responsibility for the costs associated with this system. With limited resources, the territories cannot realistically assume the financial burden of increased infrastructure alone.<sup>15</sup>

Given these concerns, it is the position of 'The North' that the design and delivery of any new federal transportation funding programs should be the impetus for a Strategic Northern Infrastructure Fund, or related program, that considers northern needs and perspectives on program architecture, eligibility criteria and flexibility.

Investment programs, such as a Strategic Northern Infrastructure Fund, will ensure that true 'northern connections' are established, maintained and improved for current and future generations and that all Canadians are connected from coast to coast to coast.

<sup>14</sup> *Looking to the Future*, op.cit., p. 8

<sup>15</sup> *Ibid.*, p. 15

# EXHIBIT 1: STRATEGIC NORTHERN TRANSPORTATION NETWORK

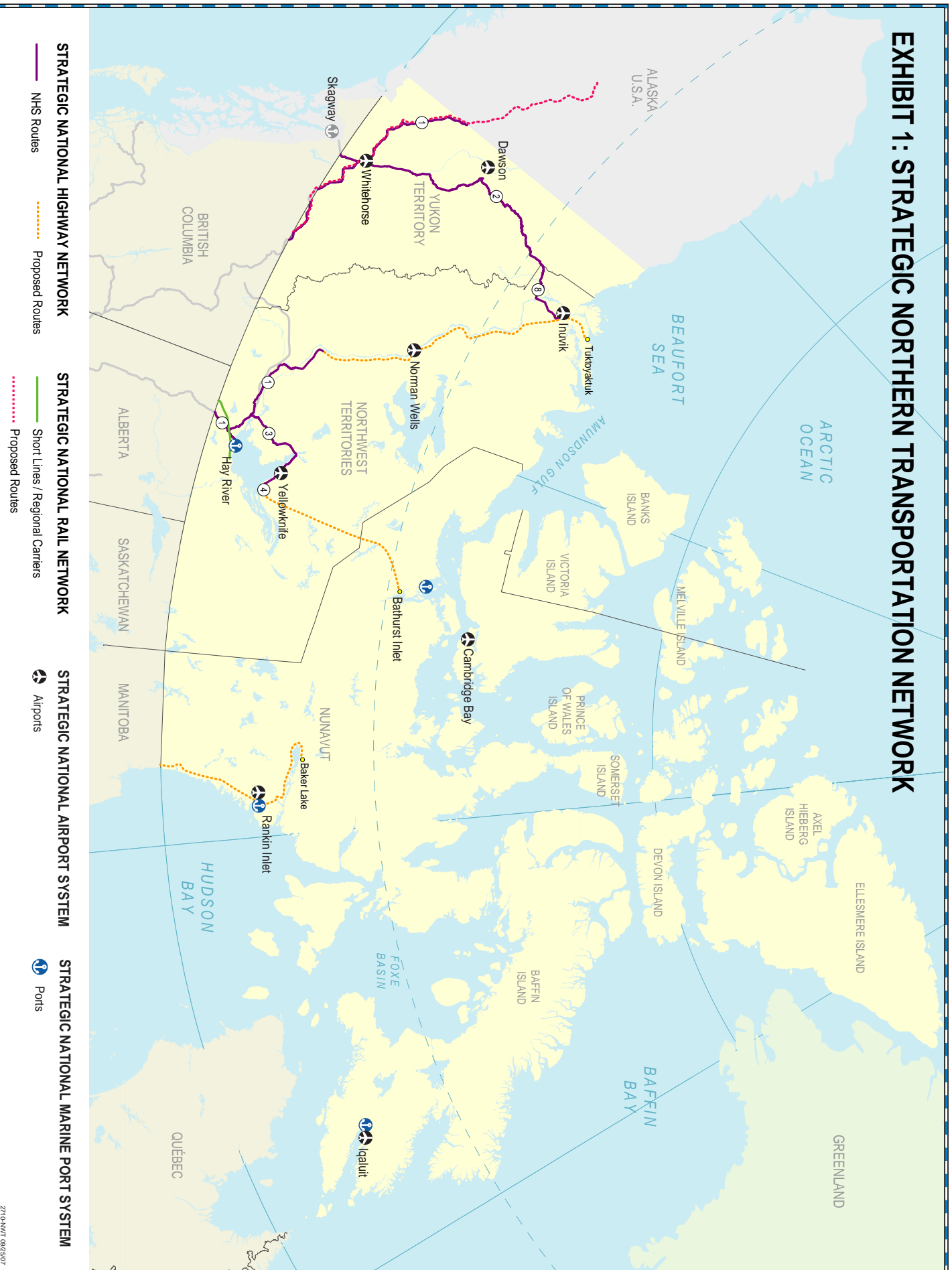


Exhibit 1: Strategic Northern Transportation Network

