INTEGRATING RURAL, NORTHERN AND REMOTE REGIONS WITH CORE TRANSPORTATION NETWORKS

TASK FORCE REPORT
October 2014

Integrating Rural, Northern and Remote Regions in Canada with Provincial and Territorial Core Transportation Networks and Local, Domestic and International Markets

TASK FORCE REPORT

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EXECUTIVE SUMMARY

I. INTRODUCTION - CURRENT STATE

Rural, northern and remote regions in Canada have large, untapped areas of resources which could make a substantial contribution towards the economic growth and prosperity of Canada. To develop this wealth and to provide safe, reliable and equitable access for nearby communities, transportation infrastructure systems to resource rich regions need to be enhanced, expanded and integrated with core transportation networks leading to important trade networks.

An inter-ministry, inter-jurisdictional task force was established in 2013 to collaborate on access and connectivity issues affecting rural, northern and remote regions in their respective jurisdictions. All jurisdictions share a common vision for Canada's economic growth and prosperous communities - to maintain, promote and enhance safe, competitive, viable and sustainable transportation networks that enhance economic prosperity and quality of life towards 2030.

The task force:

- Identified deficiencies and challenges (the issues) which limited access to and connectivity between resource rich rural, northern and remote regions and core transportation infrastructure serving key domestic and international markets; and
- 2. Determined how transportation infrastructure and services, which was principally developed for commercial purposes, could be used or transitioned, to facilitate community resupply; to improve access to amenities; and to connect regions and communities that are rural, northern and remote, including First Nations and Inuit.

Jurisdictional Scan

In 2013/2014, nine provinces and three territories participated in a jurisdictional scan. This confirmed rural, northern and remote regions in all jurisdictions had transportation issues. The issues identified through the scan, fell into five themes: *Access and Connectivity, Infrastructure, Funding and Innovative Service Delivery, Environment* and *Development and Community Impact.* The issues, guiding principles and options are organized under these themes.

II. INTEGRATION OF COMMUNITY AND RESOURCE DEVELOPMENT

Overview of Current State

Unique geographical features create different access and connectivity issues in each province and territory. Profiles for each province/territory's current state are in Appendix A.

Generally, remote communities are small with low populations, little economic activity and few jobs. All-season roads may be lacking to communities and resource areas. Inter-community connections can be poor or non-existent and greater distances exist between communities and larger urban centres. Many communities have a single mode of access and rely on seasonal

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ferries/barges and ice roads for year-round access and resupply. Some are isolated as there are no over-land connections and some rely on the air and marine modes.

All provinces and territories have a number of best practices which showcase the work being done on an aspect of transportation infrastructure, including public use and transition of commercially developed infrastructure. (See Case Studies in Appendix A.)

Although these integration methods are being used with success, the integration of these regions still requires enhancement of existing and expansion and development of new transportation infrastructure and economic opportunity. For this growth and improvements in quality of life to occur, the roles of industry, government and communities, including First Nations and Inuit will need clarification. Deficiencies and challenges impacting transportation infrastructure and services will require solutions.

III. RURAL, NORTHERN AND REMOTE REGIONS ISSUES

Deficiencies and challenges were summarized under five themes.

1) Access and Connectivity

- a. Better connections are needed to northern transportation and provincial or territorial core networks and access to major markets is minimal or absent.
- b. Some communities, businesses, industries and resource areas are isolated.

2) Infrastructure

- a. Sustaining infrastructure competes with growth needs for limited financial resources.
- b. Defining service levels and long term planning will benefit industry resource extraction and community growth needs.
- c. Cost of building in northern and remote regions is escalating and affecting sustainability.

3) Funding and Innovative Service Delivery

- a. Infrastructure funding, especially joint federal-provincial programs and private sector investment are needed to fill the gaps.
- b. Sources of new sustainable funding to maintain, improve, develop and expand infrastructure and services is needed and new service delivery methods should be considered.
- c. Competing investment priorities among urban and rural, and northern and remote communities are impacting decision making processes and the ability to complete required maintenance, enhancements and improvements.

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4) Environment

- *a*. Major impacts, competing land-use, ecological footprints, unusual weather events, natural disasters, geographical differences and climate change, are creating pressures and complicating management of infrastructure.
- b. Environmental impacts are governed by a complex set of regulations and processes crossing all jurisdictions. Roles and responsibilities for managing impacts and balancing interests are unclear.
- c. Resources are strained for repairing and maintaining infrastructure disturbed by weather events, storms and thawing permafrost.

5) Development and Community Impact

a. Economic Development:

• There is a preference for economic development planning and formation of partnerships and economic plans before industry begins to operate.

b. Duty to Consult:

• Engagement and consultation efforts with Aboriginal people must be meaningful to meet legal and social requirements.

c. Public Safety:

- Many communities and industry may be at risk due to reliance on a single mode of transportation.
- Contingencies to manage emergencies and disasters need to be put in place therefore allowing communities to deal with these situations.

IV. GUIDING PRINCIPLES AND OPTIONS FOR CONSIDERATION

Guiding Principles

- 1. Continue federal, provincial, territorial cooperation, participation and coordination.
- 2. Work collectively and collaboratively in the integration of transportation infrastructure planning and land-use to achieve and maintain sustainability.
- 3. Improve access, support economic growth and encourage partnerships for both service delivery and infrastructure, where appropriate.
- 4. Support innovative technologies and practices:
 - o To achieve environmental goals and reduce impacts; and
 - o Respect differing priorities, mandates and jurisdictional authorities.

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5. Support economic development, ensure public safety (critical services) and meet engagement and consultation obligations.

Options

Review or establish:

- 1. Federal funding programs to ensure growth needs of rural, northern and remote regions are met for all provinces and territories in Canada.
- 2. Roles and responsibilities for public and private sector cooperation, public interest models or similar frameworks and partnerships.
- 3. Land-use principles to ensure integration of land-use with economic development and transportation planning.
- 4. Service levels by assessing communities at risk due to single point of access. (Determine impact on people, industry and economy.)
- 5. Methods for managing challenging terrain, climate change and the impact of shortened use of winter roads on community and industry resupply.

6. Strategies for:

- o Enhancing links to jobs, communities, resources and markets;
- Maintaining, enhancing and building multimodal transportation systems, especially air and marine;
- Restoring/rebuilding infrastructure disturbed by weather events, storms and thawing permafrost; and
- o Coordinating engagement and consultation efforts between levels of government, among jurisdictions and across ministries.

V. NEXT STEPS

The development of suggested guiding principles and options for rural, northern and remote regions is a key first step in a journey towards improving integration with core transportation networks. They are intended to provide a reference for policy makers in advancing Canada's long-term transportation vision by addressing the unique needs of rural, northern and remote regions.

The task force found the work to be valuable as it has identified common issues and challenges, areas for collaboration and focus for further work. In essence, the task force has gained a new appreciation for the complexity of the issues. A key next step is to continue the conversation among federal, provincial, and territorial officials around how the task force report can be used to advance a common understanding of the necessity to link these regions to core national transportation networks.

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Jurisdictions have their own priorities that define an understanding of "core transportation networks" and "key domestic and global markets." Since many jurisdictions have rural, northern and remote regions which are not fully connected, identifying a core network of potential routes to/from communities, and resource-rich areas linking them to key domestic and global markets can do much to assist in long term planning for these areas. While each jurisdiction will establish its own priorities, the general consensus is that more inter-jurisdictional collaboration will improve the integration of these regions.

In addition to identifying a core network, another avenue to pursue is identifying examples of current best practices where industry has worked with government and communities to improve access. The value in this work is the potential to develop a collaborative model that could be used or adapted by jurisdictions.

When taking these important next steps, it will be beneficial to integrate or leverage other work that has been done or is underway. The efforts will generate added value and elevate the importance of having the necessary transportation network connections that allow for the greatest economic and social returns.

The suggested next steps may provide the means by which policy makers are able to improve the quality of life for people in these regions and at the same time, support the economic growth and prosperity of provinces, territories and Canada as a whole.

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Introduction

Increased emphasis on globalization has produced a need to create, maintain or enhance multimodal transportation infrastructure systems. This expansion and development is critical to Canada's economic prosperity. Many rural, northern and remote regions have rich untapped veins of resources which have the capacity to make a substantial contribution to Canada's economic growth. To develop this wealth and to provide safe, reliable and equitable access for nearby communities, transportation infrastructure is needed to provide access to these resource rich regions and to connect these areas and communities to local, national and international markets and services. To meet these needs, the Council of Deputy Ministers responsible for Transportation and Highway Safety share:

A Vision for Canada's Economic Growth and Prosperous Communities: In 2030, Canada will continue to maintain, promote and enhance safe, competitive, viable and sustainable transportation networks that enhance economic prosperity and quality of life.¹

In accordance with this vision, federal, provincial and territorial transportation ministers (the Council of Ministers Responsible for Transportation and Highway Safety) established a national task force respecting the integration of rural, northern and remote regions with core transportation networks. The task force, struck in 2013, garnered much interest and support from federal, provincial and territorial ministries across Canada. All ten provinces, three territories and Transport Canada shared information and collaborated on the access and connectivity issues affecting rural, northern and remote regions in their respective jurisdictions. The task force was charged with:

- 1. Identifying deficiencies and challenges which limited access to, and connectivity between, resource rich rural, northern and remote regions and core transportation infrastructure serving key domestic and international markets.
- Determining how transportation infrastructure, which was principally developed for commercial purposes, could be used or transitioned to facilitate community resupply; to improve access to amenities; and, to connect regions and communities that are rural, northern and remote, including First Nations and Inuit.

This work culminated in a set of suggested guiding principles and options aimed at supporting the integration of rural, northern and remote regions with core transportation networks and global markets. Establishing and maintaining these important connections can be beneficial to communities in these regions, to provincial and territorial governments, and to Canada as a whole. The principles and options in this report provide reference for policy makers in advancing Canada's long-term transportation vision, economic growth and the enhancement of our quality of life.

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¹ Connecting Now to the Future: A Vision for Transportation in Canada – September 2013. (http://www.comt.ca/english/strategic-vision.pdf) Jan. 2, 2014

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Background

In 2013/2014, the task force conducted a jurisdictional scan to identify key issues, priorities and activities which were completed, in progress or planned in future. The scan confirmed that each province and territory is experiencing a variety of transportation issues in rural, northern and remote regions. Subsequently, profiles were developed for jurisdictions to document the current state. Based on the jurisdictional scan, identified issues were categorized into five general themes: *Access and Connectivity, Infrastructure, Funding and Innovative Service Delivery, Environment,* and *Development and Community Impact*. In addition, the themes were carried through to the guiding principles and options. Each jurisdiction provided best practice case studies under one or more of the themes to showcase progress across the country on an aspect of rural, northern and remote transportation issues.

Glossary

Rural, Northern and Remote – These terms are applied broadly, and in accordance with the general meaning used in each jurisdiction. Where one or more jurisdiction is also referenced, a more colloquial interpretation may be required.

Airports/Aerodromes – Definitions used by Transport Canada apply to the aerodromes, airports and air transportation infrastructure systems referenced. However, only those facilities which fall within the scope of responsibility and/or that would be of interest to provincial or territorial jurisdictions are included.

All Jurisdictions – This refers to the provinces and territories which are members of the task force. Depending on its use in the report, it may also include the federal government, and may or may not include Transport Canada.

Deficiency – Is primarily a characteristic of an existing system and can be something which already exists, is lacking, inefficient or problematic.

Challenge – Is an obstacle or something that prevents or impedes resolution of the deficiency. Deficiencies and challenges listed as issues are limited to those which affect a majority of jurisdictions or are significant, long-standing issues.

I. INTEGRATION OF COMMUNITIES AND RESOURCE DEVELOPMENT

Overview of Current State

Canada is a vast country with diverse topography and unique geographical features. These differences create access and connectivity issues which vary from one rural, northern and remote region to another. For this reason, provincial and territorial profiles were created to document the current state of access and connectivity in rural, northern and remote regions within respective jurisdictions. Provincial and territorial profiles are located in Appendix A. Through these profiles and the jurisdictional scan completed in 2013, it is apparent that all jurisdictions are dealing with access and connectivity issues in rural, northern and remote regions.

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Overall, the landscape of communities in rural, northern and remote regions is one of small settlements with low population density. There may be few inter-community connections and long distances between communities and even greater distances to larger urban centres. For some, there is no over land connection at all. Remote and isolated communities may rely on a single mode of transportation (usually air or marine) for access and resupply. Others may have one point of access or may use seasonal ice roads to make the connection. Communities lacking an all season over land transportation connection may be at risk due to limited access to key health, social and emergency services.

These communities, along with businesses, industries and areas with large, untapped resources may not be well connected to one another or to core transportation networks and key markets. In some cases, there may be no transportation infrastructure to access resource sites. In these circumstances, prospective employers may need to fly workers in and out. Typically there are fewer employment, business and economic opportunities.

Industry moving into these areas could add significantly to local economies and help alleviate many of the socio-economic and public safety concerns. Partnerships between government, impacted communities and industry could be useful. However, the roles of industry, government and communities in developing transportation infrastructure and in the economic and social development of these regions are unclear.

Some jurisdictions have policies and programs which ensure transportation infrastructure (which may have been developed principally for commercial purposes) can be used, or may be transitioned for use, by the public. In some jurisdictions, these policies and programs have become best practices. Although these practices can improve access and connectivity for nearby communities, it may not achieve a full connection. Many communities still lack inter-community connections, links to services hubs, major centres, a core network or key markets. These issues are created by challenges for which alternate policy options and solutions are required. For more information, the case studies listed below may be found in Appendix A.

Relevant Case Studies (See Appendix A):

British Columbia - Gateway Strategy, page 30.

British Columbia – The Oil and Gas Rural Roads Improvement Program (OGRRIP), page 32.

Manitoba – Churchill Gateway System Partnership, page 36.

Saskatchewan - Industry Access Road, page 63.

Yukon – Resource Access Roads Framework, page 68.

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II. ISSUES IDENTIFIED BY JURISDICTIONS

Transportation systems have always played a role in moving people and goods and in driving the economy. Beginning with railroads in the 1800's and from the building of a single road and 13 bridges in Ontario in the 1900's, Canada's transportation system has evolved into a complex network of road, rail, marine, air and pipeline systems. These networks link industries to markets and people to services and employment opportunities.

In rural, northern and remote regions, developing and maintaining these important linkages can be a challenge. Geography, terrain, climate and cost can present impediments to expansion, development and maintenance of existing systems. Based on the task force's jurisdictional scan and analysis, the most critical of these issues rests in the following themes: *Access and Connectivity, Infrastructure, Funding and Innovative Service Delivery, Environment* and *Community Development and Impact*. Following a description of these themes below are *Best Practice Case Studies*, which illustrate how jurisdictions are working to manage specific issues.

Theme 1: Access and Connectivity: The Role of Infrastructure

In rural, northern and remote regions, there are gaps in transportation infrastructure. Communities, business and industry may be isolated and connections to northern transportation and/or provincial or territorial core networks and access to important markets may also be absent. For example,

- There are limited choices, whether it is an all-season road, inter-community bus, rail or ferry services to connect to main corridors;
- Multi-modal interconnectivity (road, rail, marine and air) within jurisdictions and between provinces and territories can be improved to reduce the number of isolated and remote communities;
- Some jurisdictions' communities are not connected to each other or to the National Highway System. (e.g. - Nunavut and the Côte-Nord in Québec); and,
- Yukon requires integration through northern British Columbia, with the Alaskan transportation network as far south as Washington State.

Bringing our natural resources and agricultural, fisheries and other products to the market and improving the movement of goods and people serves the interests and needs of a broad spectrum of important stakeholders and potential beneficiaries. In rural, northern and remote regions, improved access is needed to develop the resource wealth and critical to continued economic growth and improved social conditions for all Canadians. Although over land modes are important, airports/aerodromes and marine modes will continue to play essential roles.

Airports/Aerodromes

In rural, northern and remote regions, airports/aerodromes are viewed as critical to the economic and social development of communities and industry, particularly those which are reliant upon them as the only source of year round access and resupply. Critical health, justice, social and essential emergency

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services: evacuation, repatriation, fire-fighting, disaster assistance and remediation services (i.e. – for oil spills, floods) can be delivered. Air services add value to the local economies through business and job opportunities on and off the airport and by facilitating exploration, geological surveys, tourism, local agriculture and banking. They bring workers and other experts to the area and may play a role in assisting Canada to assert its Sovereignty.

Long-term sustainability and future operability of airports and aerodromes is important as they are a vital external link to goods and services in the south. Where these facilities need to expand to accommodate future growth, many could be faced with challenges over the long term. Jurisdictions may continue to have limited capital investment and struggle to keep pace with minimum regulatory requirements. For example,

- Capital and operating budgets of airports/aerodromes are limited in some cases. This is particularly problematic where the airport is the only source of access and resupply, and where it is critical to have medevac and emergency service delivery;
- The impact of proposed federal regulatory changes on airport/aerodrome expansion projects will require a case by case assessment. In some instances, should grandfathering provisions be triggered, more capital funding may be required to meet new standards; and
- Eligibility criteria for the Airports Capital Assistance Program (ACAP) limit funding solutions for many remote airports.

Airports/aerodromes in rural, northern and remote regions will continue to struggle to meet mandatory regulatory requirements. They must also expand to meet growth opportunities and evolve into a competitive transportation market. These outcomes could be met when the following conditions are met:

- Secure capital funding to ensure mandatory regulatory requirements are met; and
- Adjustments are made to qualifying criteria under the ACAP so that:
 - o Non-certified aerodromes are included;
 - o The need for scheduled service and 1,000 passengers per year are eliminated;
 - o Funding available for grants is increased; and
 - o Inclusion of regularly scheduled charter service becomes a part of the service definition.

Marine

Hundreds of thousands of containers and millions of tonnes of cargo are handled annually in Canada's marine ports. The domestic movement of people and goods has increased substantially and combined with international trade and tourism, marine transportation contributes billions of dollars to the Canadian economy. Ferries, including inland river cable systems, are part of this mode. They move millions of people and commercial vehicles and goods annually. For communities where there is no land connection, ferries are critical for resupply and for access to essential goods and services. They also provide vital import/export links to global markets for many industries. In 2005, the value of

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Atlantic Canada's trade exports was \$22 billion and the value of imports, \$18 billion². These figures have grown substantially in recent years, with growth expected to continue well into the future. Ports and ferries need enhancements and expansion to meet these pressures. For example,

- > The presence of multi-modal connections for regions where there are geographic differences requires multiple modes to establish/maintain a connection to a core network. (i.e. The islands and peninsula in Atlantic Canada where there is heavy reliance on ferries or the land locked far north.);
- Reliable road or rail transportation must be available to link ports and ferries to provincial/territorial networks; and,
- Marine infrastructure and related technology, including river cable ferries are aging and nearing the end of their service life. Capital or a source of funding to maintain, upgrade or replace ferries and enhance ports is needed.

Current challenges include:

- Recognizing the role ferries play in connecting people and goods to trade networks and the national highway system;
- Obtaining long-term federal funding to ensure future sustainability, enhancement, expansion and replacement of aged ferries, marine infrastructure and ports, to ensure ferry services to northern and remote communities is sustainable;
- > Reducing costs associated with marine contracts used to facilitate community resupply;
- Recognizing ferries as strong catalysts to develop domestic and international tourism; and
- The higher cost of repair or replacement of river cable ferries located in land locked areas, where expertise, facilities, parts and vessels are not readily available.

Relevant Case Studies (See Appendix A):

Manitoba – East Side Road Authority, page 37.

Newfoundland and Labrador – Trans Labrador Highway/Year-Round Ferry Service, page 41.

Prince Edward Island - National Routes and Community Connectors Strategy, page 56.

Québec – The Route Blanche in Basse-Côte-Nord, page 60.

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² The Atlantic Canada Transportation Strategy, 2008-2018, p.5.

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Theme 2: Infrastructure: Growth Pressures and Sustainability

The cost of sustaining current infrastructure systems and meeting growth needs competes for limited financial resources. Although all jurisdictions are exploring options aimed at long-term sustainability and growth pressures, the following issues are of concern:

- Ensuring adequate resources for asset management programs and for sustaining infrastructure;
- Establishing defined service levels and ensuring sound planning to meet service demands for resource extraction, industry, economic and community expansion and development;
- Managing escalating costs, and the increasing demand for rehabilitation of aging bridges and infrastructure in other modes to ensure future sustainability;
- Managing the demand to build new road infrastructure while under pressure to maintain or rehabilitate existing infrastructure;
- Meeting growth demands for building, enhancing and rehabilitating multi-modal infrastructure systems;
- Maintaining service levels in all modes when the asset is being consumed faster resulting in shortened service life (i.e., to meet the demand for connectivity to resource-rich remote areas);
- > Building infrastructure in the far north, remote or isolated regions where obtaining domestic and industrial building materials is subject to higher shipping/cargo/freight costs:
 - Longer transport times;
 - Seasonal restrictions due to lack of all-season connectivity;
 - o Construction material delivery is sometimes dependent on a sealift operation to reduce costs;
 - o The construction season is shorter than in southern regions;
 - o There is a shortage of local, well trained and skilled workforce; and
 - Contractors are compelled to bring in outside workers and incur high accommodation costs and living expenses.

Relevant Case Studies (See Appendix A):

Alberta – Local Road Bridge Component, page 25.

Nova Scotia – 5-year Highway Improvement Plan, page 47.

Ontario – Rapid Bridge Replacement, page 53.

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Theme 3: Funding and Innovative Service Delivery: Long-term Sustainability

Managing pressures and demands during a period of fiscal restraint is difficult for all jurisdictions. Some jurisdictions struggle with debt load and slowed economic growth. All jurisdictions are working to address the financial requirement to meet existing pressures and growth demands.

Governments are looking for cost effective ways to ensure future sustainability. Current jurisdictional activities and priorities include: modernizing bus systems, using school buses to transport seniors and changing and adapting policies—like that used in the Yukon for rural road maintenance. These initiatives are making progress towards addressing long term sustainability deficiencies. In many jurisdictions, issues continue to pose a challenge:

- Competing investment priorities among urban and rural, and northern and remote communities;
- Adequate funding sources including joint federal-provincial programs and the New Building Canada Fund;
- The need for long-term sustainable federal funding to maintain, improve, develop and expand infrastructure in all modes;
- > Securing major source of private sector funding and/or limited funding for infrastructure projects;
- Policy decision making and budget allocations are impacted by economic and fiscal considerations;
- > Establishing equitable fares, fees and rates for cargo, freight and shipping;
- > Reducing costs associated with federal/provincial regulatory requirements; and
- Exploring economic partnerships with provincial, territorial and federal jurisdictions as well as with industry and other partners to ensure the safety and sustainability of airports, ferries, and intercity bus, short-line and passenger rail services and ports.

Relevant Case Studies (See Appendix A):

Saskatchewan – Rural Municipal Road Primary Weight Corridor/Clearing the Path Corridor Program (CTP), page 64.

Yukon – Rural Road Maintenance Program (RRMP), page 67.

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Theme 4: Environment: Competing Use, Weather Impacts and Footprints

Governments at all levels play a role in managing the environment. Competing land use, ecological footprints, unusual weather events, natural disasters, ecological differences and environmental changes can have major impacts. Other issues, from events which prematurely degrade and destroy infrastructure are compounded by environmental and climate changes. These can also affect permafrost, sea levels and the long-term viability of ice roads. Combined, these issues create new pressures and add complexity when managing the environment. For example,

- Environmental impacts governed by a complex variety of environmental assessment (EA) regulations and processes crossing all jurisdictions. Roles and responsibilities for managing regulations and process across jurisdictions and balancing demands and interests are unclear;
- Repairing and maintaining all modes of infrastructure disturbed by weather events and storms (flood/snow);
- Maintaining and expanding infrastructure where challenging terrain and climate, permafrost and muskeg and short construction season increase operational and construction costs;
- > Promoting integration of land use with economic development and transportation planning;
- Managing competing land use demands and identifying, developing and establishing appropriate land use principles;
- ➤ Identifying and establishing funding mechanisms for restoring and rebuilding infrastructure systems disturbed by weather events, storms and thawing permafrost;
- > Conducting research on managing challenging terrain and climate change; and
- Facilitating community and industry resupply with shortened use of winter roads impacts.

Relevant Case Studies (See Appendix A):

Ontario – Automated Weather Observation Systems at Remote Airports, page 54.

Québec – Stakeholder Engagement Prior to Implementation of a Permanent Multi-Resource Road, page 61.

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Theme 5: Development and Community Impact

Economic Development

For many communities, the main issues are high unemployment and few local economic activities or business opportunities. Industry moving into an area could provide much needed employment and add significantly to local economies. Areas of focus include:

- Forming partnerships between industry, communities, regional and local economic organizations and government to ensure economic development opportunities and social benefits are captured by neighboring communities;
- Building local workforce capacity and encouraging local supply of services.; and
- Establishing community and regional economic development plans before industry begins to operate.

Duty to Consult

First Nation, Metis and Inuit people living in rural, northern and remote regions may be impacted by industrial, commercial and economic or other activity, whether on their land or nearby. Depending on the activity, multiple levels of government, (federal/provincial/territorial), and multiple ministries and industry proponent(s) may be involved in these projects. Consultation with these groups is vital. For Aboriginal people, the *Crown* is legally obligated to meet *Duty to Consult* requirements and must ensure this obligation is fulfilled. Engagement and consultation processes are often complex and complicated by these issues. Keys to success include:

- Coordinating engagement and consultation efforts between levels of government, between ministries and across jurisdictions. (i.e. – Avoiding duplication of efforts);
- Clarifying industry's role and contribution in the engagement and consultation process; and
- Engaging and consulting meaningfully with Aboriginal people respecting activities that impact treaty rights, lands or traditional uses and practices.

Public Safety: Access and Distance

Delivering medevac and emergency services for natural disasters or contending with industrial disasters in these regions is difficult. Most communities lack local expertise, the equipment and supplies for emergency medical, disaster response and remediation, evacuation and repatriation. All levels of government, multiple ministries and external agencies like the Red Cross or the Canadian military can be involved and may incur costs. Where there is only one access point, managing these operations and delivering these services can be difficult and expensive.

Issues currently impacting communities include:

 Long distances to major centers, service hubs or core networks with key health, social and emergency services;

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- > Obtaining construction materials at reasonable costs for community and industry;
- Establishing minimum service level standards; and
- Regional and geographic differences impacting communities are not well defined and risks and impediments may not be identified. Contingencies and solutions to manage risks and impediments may not exist.

Relevant Case Studies (See Appendix A):

Alberta – Community Airport Component, page 26.

Northwest Territories – Mackenzie Valley Highway Project Description Reports, page 45.

III. GUIDING PRINCIPLES AND OPTIONS FOR CONSIDERATION

Transportation systems in rural, northern and remote regions in Canada face many challenges. To ensure economic expansion and future growth of these regions, a variety of integrated and well-planned solutions are needed. In accordance with the *Vision for Transportation in Canada*, the Task Force suggested a set of guiding principles and options for consideration to assist policy makers on the integration of rural, northern and remote regions with core transportation networks.

Themes appear in order of priority with guiding principles and options similarly ordered under each theme. The priorities were determined by the jurisdictional scan as well as the level of interest or discussion generated by an issue amongst task force members. It does not reflect current priorities for each jurisdiction. There is a desire to ensure each jurisdiction continues to establish their own priorities relevant to their situation. This was due to:

- > Differing modes and multi-modal needs arising from vast differences in terrain and geography;
- Current state of existing transportation infrastructure and service levels differing within and between jurisdictions;
- Current state of access and connectivity from one community to the next, to/from one region to the next and from within and between provinces and territories; and,
- Current priorities of individual jurisdictions.

Another significant factor is the lack of an identifiable rural, northern and remote core network. At a minimum, there is a need for a common understanding of this term and of "key domestic and global markets".

The recent availability of the information indicates more thought and consideration by each jurisdiction and at some point, further inter-jurisdictional collaboration is warranted.

Theme 1: Access and Connectivity

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Principle: Continue to co-ordinate, co-operate and participate in work to establish connections between people and jobs and services and resource rich regions in rural, northern and remote regions and core transportation networks which lead to key markets.

Options:

- Identify solutions and establish a strategy for maintaining marine and air infrastructure and services which are essential to community resupply and which may also have the potential to resupply business and industry.
- Identify and implement solutions for establishing and maintaining links to main corridors via all modes. (For example, maintaining inter-community bus or rail service; expanding road access points, and upgrading to all-season roads.)
- Encourage development of multimodal transportation systems in these areas to address deficiencies and challenges.

Theme 2: Infrastructure

Principle: Collaborate and work collectively with private sector and communities to ensure transportation infrastructure is sustainable in the future. Integrate transportation and landuse planning to establish transportation systems that meet the growth needs of people, resource industries and communities in rural, northern and remote regions.

Options:

- Establish a strategy to manage escalating costs and ensure future sustainability of aging and prematurely degraded infrastructure.
- Examine and adopt collaborative models to establish standards and promote regional transportation planning. (i.e. – Alberta's Oilsands Area Transportation Planning Committee).

Theme 3: Funding and Innovative Service Delivery

Principle: Support economic growth and the establishment of seamless transportation systems and effective links in rural, northern and remote regions by improving access to services and encouraging private sector investment to achieve industry and community needs.

Options:

- Review federal infrastructure funding programs to ensure they meet growth needs of rural, northern and remote communities. (For example: ACAP and programs under the new Building Canada Plan).
- Promote partnerships to fund infrastructure, where practicable. (For example: Saskatchewan's Provincial Interest Model, Manitoba's Churchill Gateway Partnership and Yukon's Resource Access Roads Framework).

Theme 4: Environment

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Principle: Support the use of innovative technologies and practices which achieve environmental goals, reduce environmental impacts and respect differing priorities, mandates and jurisdictional authorities.

Options:

- Develop adaptation strategy for managing the restoration and rebuilding of infrastructure disturbed by weather events, storms and thawing permafrost.
- Promote integration of land use with economic development and transportation planning by developing and establishing appropriate land use principles.
- Encourage research on managing challenging terrain and permafrost, climate change, ecological differences and the impact of shortened use of winter roads on community and industry resupply.

Theme 5: Community Development and Impact

Principle: Manage development and infrastructure issues including impacts of land-use and natural and weather disasters in a manner that supports economic development, ensures public safety (access to emergency services) while meeting obligations for meaningful engagement and consultation.

Options:

- Encourage establishment of community and regional economic development plans and the formation of partnerships between industry, communities and government at the beginning of the planning process, before industry begins to operate.
- Develop a strategy to coordinate engagement and consultation efforts between levels of government, among jurisdictions and across ministries.
- Assess and identify communities that may be at risk due to single point of access.
 Develop strategies for managing risks and contingencies for delivering emergency (disaster response) and essential health services.

IV. NEXT STEPS

The development of guiding principles as options for rural, northern and remote regions is a key first step in a journey towards improving integration with core transportation networks. They are intended to provide a reference for policy makers in advancing Canada's long-term transportation vision by addressing the unique needs of rural, northern and remote regions. The principles and options reflect the range of interests jurisdictions identified through the task force work. While the listing may reflect importance at this time, the order is not intended to get in the way of each jurisdiction establishing priorities that best meet their needs. In fact, most jurisdictions expressed they need time to reflect upon this information and that further collaboration will eventually be needed for all options.

Each of the themes, principles and options are important to the integration of rural, northern and remote regions with core transportation networks. The question is 'which ones should be reviewed

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first'? The task force found the work to be valuable as it has identified common issues and challenges, areas for collaboration and focus for further work. In essence, the task force has gained a new appreciation for the complexity of the issues. A key next step is to continue the conversation among federal, provincial, and territorial officials around how the task force report can be used to advance a common understanding of the necessity to link these regions to core national transportation networks.

Jurisdictions have their own priorities that define an understanding of "core transportation networks" and "key domestic and global markets." The task force members view the need to identify a core network within each province and territory as an important next step. Since many jurisdictions have rural, northern and remote regions which do not have connections, identifying potential routes to/from communities, and resource-rich areas linking them to key domestic and global markets can do much to assist in long term planning for these areas.

Each jurisdiction may need to review the transportation needs of rural, northern and remote communities and the resource rich areas within their respective province/territory. Further collaboration will then be needed to identify potential routes to connect provincial and territorial jurisdictions. Lastly, routes leading to global markets need to be identified across Canada to ensure rural, northern and remote communities and resource rich areas have access to and are connected with local, national and international import/export markets. While each jurisdiction will establish its own priorities, the general consensus is that more inter-jurisdictional collaboration is needed to improve the integration of these regions.

In addition to identifying a core network, another avenue to pursue is identifying examples of current best practices where industry has worked with government and communities to improve access. The value in this work is the potential to develop a collaborative model that could be used or adapted by jurisdictions.

When taking these important next steps, it will be beneficial to integrate or leverage other work that has been done or is underway. The efforts will generate added value and elevate the importance of having the necessary transportation network connections that allow for the greatest economic and social returns.

The next steps may provide the means by which policy makers are able to improve the quality of life for people in these regions and at the same time, supporting the economic growth and prosperity of provinces, territories and Canada as a whole.

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APPENDIX A: PROVINCIAL AND TERRITORIAL PROFILES AND BEST PRACTICE CASE STUDIES

<u>Profiles</u> – were provided by each jurisdiction to capture the current state of rural, northern and remote regions within the respective province and territory. The profiles depict existing transportation infrastructure in these regions. They may also contain commentary on access and connectivity concerns and integration needs for communities, resource areas and industry.

<u>Best practice case studies</u> – were submitted by jurisdictions on best practices which were used with success in their province or territory. These practices showcase the progress being made across the country on aspects of rural, northern and remote transportation.

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Alberta Profile

Alberta's "rural, northern and remote region" is identified on the map to the right. This region has a population of approximately 350,000 people.

There are over 8,000 km of provincial paved highways in the area. With the exception of Fort Chipewyan, each community in the area (110 in total) is connected by a provincial highway. While Fort Chipewyan is not connected to the provincial highway network, Alberta Transportation does facilitate seasonal access through a winter road (initial construction and ongoing maintenance).

<u>Airports</u>

Fort Chipewyan is serviced by an airport. The Fort Chipewyan airport has received funding from the Government of Alberta for facility upgrades and rehabilitation.

Altogether, there are approximately 26 airports with basic (or more) infrastructure in this region. Simple bush landing strips, tanker bases owned by the Government of Alberta and private airstrips associated with oilsands operations are not included in this number. Airports in High Level, Rainbow Lake, Fort Vermillion, Manning, and Peace River provide essential public services like medevac, forest fire suppression, search and rescue, etc.

Fort McMurray and Grande Prairie airports are expanding. Fort McMurray is building a new terminal NORTHERN ALBERTA DEVELOPMENT COUNCIL AREA



and has recently obtained customs clearance for some international flights. Grande Prairie is expanding their runway to allow for larger aircraft, and they are currently requesting customs service. Cold Lake and Lac La Biche airports are carrying out infrastructure expansion projects to accommodate new resource developments. The Edson airport is attempting to attract commercial services.

Rail

CN is the sole service provider in northern Alberta, although CP can still place some cars in the northwest section of CN's line. CN is currently investing in track upgrading. Grain handling and market access (transportation supply chain) has been a contentious issue with bottlenecks in movement of grain from producers to port. Oil-on-rail transport is rapidly increasing. Rail service in this region is commercial in nature and there is no passenger rail service at this time.

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Resource Development

One of the most significant challenges facing Alberta in terms of northern remote regions is to ensure that adequate transportation infrastructure keeps pace with resource development, particularly those associated with the oilsands. New oilsands regions are opening up east of Fort McMurray and within the Cold Lake and Peace River regions.

In response to ongoing transportation requirements, the Government of Alberta (GoA) established an advisory committee in 2012 to make recommendation to the GoA on current and future transportation needs in the Athabasca region. The Transportation Coordinating Committee (TCC), made up of municipal, industry and provincial representatives, advises on transportation matters related to all classes of roads, transit, rail and air traffic.

The TCC led in the development of a report to investigate alternative funding, financing and infrastructure delivery solutions for regional transportation needs. Industry and local residents are calling for road construction, expansions and transit projects that the GoA does not have in their list of future priority projects.

In addition to public roads serving resource development, many private resource roads have been built in northern Alberta and are currently used to support oilsands and forestry projects.

Land Use Frameworks and Planning

The GoA has started a comprehensive initiative to develop a new land-use planning system for the province. The system focuses on undeveloped northern regions and involves a land-use framework which was developed in consultation with Albertans.

This land-use framework helps Alberta achieve its long-term economic, environmental and social goals by taking a new approach to managing lands and natural resources. It acts as a blueprint to guide the province in making land and natural resource decisions and ensures good stewardship of Alberta's lands and resources.

The land-use framework commits to the development of seven regional land-use plans, based on seven land-use regions. This regional approach recognizes the great diversity of Alberta's landscapes, including Alberta's northern and remote regions.

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Alberta – Local Road Bridge Component

Type of Practice: Funding Assistance Program

Description of best practice: The Local Road Bridge Component Program provides assistance to municipalities for construction, rehabilitation and maintenance of bridge structures on local roads. Towns, villages, summer villages, counties, municipal districts, specialized municipalities, special areas and Métis Settlements are eligible for bridge structure assistance.

Eligible projects generally include the construction or rehabilitation of culverts, standard bridges, and/or major bridges. Projects are evaluated based on condition, functionality, risk of failure, risk of delay, local impact (including length of detour), and local priority.

Eligible projects can cover a wide range of activities provided they meet specific guidelines for each type of activity. For example, this component will contribute funds towards culvert installations. For this activity, there are guidelines outlining eligible costs, such as foundation preparation, assembly and installation, and ineligible costs, including removal of existing structure and grading over the pipe.

The cost of the infrastructure is compared to the net benefits of the infrastructure. Roads must be open for use by all publicly licensed vehicles and not be subject to any municipal general user fees.

Why the best practice was used: Many local road bridges and related structures in Alberta have now surpassed their original life expectancy and local municipal governments are struggling to keep pace with bridge renewal activity due to budget restrictions.

Benefits of the best practice: This program evaluates the overall benefits of bridge improvements in light of the required costs (investment). As bridges age and approach or surpass their life expectancy, they move from becoming an asset to a liability in terms of regional safety and social / economic viability. This program ensures that local bridges remain an asset supporting regional activity and economic sustainability.

Resources/References: N/A

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Alberta - Community Airport Component

Type of Practice: Funding Assistance Program

Description of best practice: The Community Airport Component Program provides funding assistance to community-owned, public-use airports for their rehabilitation and construction requirements. There are 72 paved community airports across Alberta.

For existing community airports, eligible projects include major capital rehabilitation of the airside portion of the airport - specifically aircraft operating areas such as the primary runway, apron, and primary taxiway from main/terminal apron to runways. Typical projects would be pavement rehabilitation, including fog seals, slurry seals, and overlays. Consideration is given to runway extensions where benefits can be demonstrated in terms of the overall goals of this component and where beneficiaries provide a significant financial contribution to the project. This component provides up to one third funding, with the municipality and industry funding one third each.

Why the best practice was used: Many community airports in Alberta are aging and in need of renovation. Local communities and regional governments (municipalities) are challenged to find required funding to carry out community airport rehabilitation projects.

Benefits of the best practice: Community airports are considered a necessary part of the transportation infrastructure and provide access to communities for resource, medical, tourism and personal travel. Alberta Transportation's overall goal is to maintain and protect the existing network of public licensed community airports in support of safe airport operations, general aviation operations, commercial air charters, forest fire suppression, medevac operations, local/regional economic development, and protection of provincial investment in airports.

Resources/References: N/A

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British Columbia Profile

- Northern British Columbia covers two-thirds of the Province's landmass and is home to over 300,000 people, accounting for six per cent of the province's population.
- Resource industries continue to be the main economic driver of the northern region and are expected to be so for the foreseeable future, with forestry, mining, liquefied natural gas (LNG), tourism and transportation viewed as promising opportunities.

Port of Prince Rupert

BC's Northern Port: The Port of Prince Rupert is North America's closest port to key Asian markets by up to three days – it is 36 hours closer to Shanghai than Vancouver and over 68 hours closer than Los Angeles. It is also one of the deepest natural harbours in North America.

Ferries

Many northern, rural and remote communities in British Columbia are connected by ferry services. BC is responsible for providing ferry services on 14 inland ferry routes.

Rail

CN Rail owns and operates the mainline track in northern British Columbia which serves the ports of Prince Rupert and Kitimat, and track formerly operated by BC Rail from North Vancouver to northern British Columbia. CN is undertaking investments to expand capacity on its northern mainline. A major part of that



expansion is tied to expanding capacity on its Edmonton, Alberta–Prince Rupert, British Columbia, corridor. CN constructed five extended sidings on the northern mainline in 2013 to handle 12,000 ft. trains. The investments will also aid the shipment of export coal from existing and new mines through the Ridley Terminals at Prince Rupert.

The corridor is becoming increasingly important as the Port of Prince Rupert emerges as a major gateway for consumer goods imports and exports of natural resources, including forest products, soybeans, corn and dried distilled grains. Container traffic at the Port of Prince Rupert in the first 10 months of 2012 grew 44 percent year-over-year to 50,720 TEUs, as imports increased 41 percent and exports increased 47 percent.

CN handled roughly 500,000 carloads and intermodal units on the corridor and have stated publicly that traffic on the lane could nearly double by 2015. The railroad will have spent more than \$151 million on this

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transportation corridor by the end of 2012, with investments in sidings, new signaling, tunnel and bridge clearances and a yard expansion at Smithers and Terrace. CN is also extending its line to a \$42 million export terminal for wood pellets at the Port of Prince Rupert.

Airports

Prince George has the busiest airport in the north and serves as BC's gateway to the north. Located in a busy city, it provides service to major cities like Vancouver, Kelowna and Kamloops. There are seven regional airports that provide services to the more rural and northern regions located in Smithers, Terrace/Kitimat, Prince Rupert, Sandspit, Fort St. John, Dawson Creek and Masset. There is also a small airport in Dease Lake, located approximately 250 kms south of the Yukon Border.

KEY INDUSTRIES

Natural Gas

British Columbia's northern region contains an estimated 2,933 trillion cubic feet of natural gas. Since 2012 more than \$6 billion in investments have been made towards developing liquefied natural gas (LNG) for export, in addition to \$1 billion already spent in preparation for LNG development.

Energy and Mining

Mining plays an important role in BC's northern economy, with revenues of \$8.3 billion (almost 3 times the revenue of 2001 at \$2.8 billion) and is responsible for employing 30,000 British Columbians. BC is Canada's largest exporter of coal, largest producer of copper and only producer of molybdenum, in addition to being a large supplier of gold, silver, lead and zinc.

Forestry

The northern interior is the largest of BC's forest regions with an area of about 55 million hectares, or 58% of the province's 95 million hectares. The region stretches from Quesnel in the south to the BC and Yukon border in the north and from the BC and Alberta border in the east to the City of Terrace in the west.

There are many communities throughout the region where forestry is a major contributor to the employment and economic well-being of the area, including: Burns Lake, Chetwynd, Dawson Creek, Fort Nelson, Fort St. James, Fort St. John, Houston, Mackenzie, Smithers, Terrace, Valemount and Vanderhoof.

Tourism

BC's northern region is a prime tourist destination, providing skiing, fishing, wildlife viewing, world class camping, hiking and mountaineering, art galleries, brewery and distillery tours, golf and many more activities. BC continues to support the tourism industry by developing programs to help First Nations tourism entrepreneurs implement their ideas.

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Agrifoods

BC has one of the most diverse agricultural sectors in Canada, producing more than 200 agricultural commodities and harvesting 100 seafood species. In 2012, B.C.'s agrifood sector generated \$11.7 billion in revenues, exported \$2.5 billion in products to more than 130 countries. BC's northern region contributes to this important sector with fishing, ranching and over 100 farms along the highway 16 corridor.

TRANSPORTATION: CHALLENGES AND OPPORTUNITIES

B.C. has made major investments and focused transportation initiatives on enhancing capacity to deliver goods to market. The Province will be providing funding to the following areas:

<u>Interior and Rural Side Roads</u> – The Ministry is investing \$150 million from 2014/15 through 2016/17 to renew the interior and rural road networks to make these roads safer and more reliable, and improve connections between communities.

<u>Oil and Gas Rural Road Improvement Program</u> – The Ministry is investing \$60 million from 2014/15 to 2016/17 to rehabilitate the existing public road infrastructure in the northeast region of the province to help eliminate seasonal road restrictions and extend the winter drilling season for oil and gas exploration.

<u>Mountain Pine Beetle Strategy</u> – The Ministry is investing \$90 million from 2014/15 through 2016/17 to facilitate the safe and efficient transportation of harvested mountain pine beetle killed timber, to repair damage done to the highway system by the extraordinary increase in heavy truck traffic, and to help ensure that the goals and objectives of B.C.'s Mountain Pine Beetle Action Plan are met.

To further meet the challenges presented by increasing economic development opportunities, the Province will continue to work with local governments and stakeholders to identify priority areas for improving the performance of highway corridors through projects such as passing lanes, four-laning, left-turn slots, realignments, intersection improvements and safety upgrades.

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British Columbia – Gateway Strategy

Type of Practice: Infrastructure Funding

Description of best practice: The Pacific Gateway Program is a strategic alliance: a unique partnership of transportation industries and governments. Recognizing the vital importance of trade to all of Canada, the partners have been working together since 2005 to take advantage of BC's strategic location at the crossroads of North America and Asia.

The alliance includes the governments of BC, Alberta, Saskatchewan and Canada, along with executive representatives from CN and Canadian Pacific, the ports of Vancouver and Prince Rupert and Vancouver International Airport.

Why the best practice was used: To help set priorities for future investment, the Province brought together more than 160 senior leaders in transportation, forestry, mining, energy, tourism and agri-food during 2011. Using expert information and advice, they assessed their sectors' growth potential and worked with the Province to develop and build on current Pacific Gateway transportation strategies to meet that growth.

Benefits of best practice: The Alliance has generated \$22 billion for upgrades and system expansion to be in place by 2020. In addition, \$25 billion in new investments have been identified, including:

- \$3.1 billion to increase major road and rail capacity, including new provincial investment of \$700 million in BC's major trade corridors and the Prince Rupert Road Rail Utility Corridor
- > \$18 billion to support the previously announced BC goal of three liquefied natural gas (LNG) plants in BC, and at least \$222 million to increase access to natural resources in rural BC
- > \$3.8 billion to increase bulk and container terminal capacity at ports in BC, including the Province's \$50-million commitment to the Deltaport Terminal, Road and Rail Improvement Project

Pacific Gateway Alliance partners have agreed to move forward in five key areas to build on BC's transportation network:

- > increasing major rail and road capacity
- increasing rural resource transportation capacity
- increasing bulk terminal capacity at B.C. ports
- increasing container terminal capacity at B.C. ports
- increasing air passenger and cargo capacity

Some of this development will be supported by expanding and strengthening existing networks of rural and resource roads. In other areas, the Province and its private sector partners will be opening up new territory, especially in the North, creating opportunities to build dedicated corridors for moving goods and people.

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The following two examples illustrate the ongoing projects in BC's northern region:

Build on existing rural and resource roads to increase access to gas reserves.

Since 2001/02, the Province has invested more than \$364 million in the Oil and Gas Rural Road Improvement Program to upgrade public road infrastructure in the Northeast region of the province. These investments help to minimize seasonal road restrictions and extend the winter drilling season for oil and gas exploration, thereby attracting new investment, creating jobs and improving safety for both industry and residents. As part of this strategy and as announced in Budget 2012, the Province will invest \$222 million in the Oil and Gas Rural Road Improvement Program and the Sierra Yoyo Desan Road to access the Horn River and Cordova Basins, which are home to some of BC's largest undeveloped gas reserves.

Build new transportation networks to increase access to natural resources.

A number of new, large-scale developments will be taking place in the regions served by the Northwest Transmission Line (NTL). Led by BC Hydro, the NTL project will extend the provincial electricity grid to serve B.C.'s northwest – so the industries generating jobs in the region can be fuelled by clean power, and residents will no longer have to rely on diesel generators. Also, access will be required for the eight new mines committed to in the BC Jobs Plan.

Resources/References: For more information, please go to the Gateway website: http://www.pacificgateway.gov.bc.ca/documents/120402 Gateway Strategy.pdf

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British Columbia - The Oil and Gas Rural Roads Improvement Program (OGRRIP)

Type of Practice: Infrastructure Funding

Description of best practice: The Oil and Gas Rural Roads Improvement Program (OGRRIP) helps industry to explore and extract natural gas by building strong roads that can handle the industrial traffic. It also helps mitigate the negative impacts of the industrial use of roads, such as dust concerns and increasingly rough surfaces to local residents.

Why best practice is used: The extraction of natural gas occurs in well sites that are interspersed throughout the countryside near rural residences and active farmland. Each well site requires significant amounts of industrial traffic to transport the equipment, resources and supplies required to develop the resource. When the industry accesses new areas, extensive work is usually required on the road system to facilitate the high traffic levels of heavy loads. Historically, the Ministry of Transportation's side road network was built to functional rural levels, designed to accommodate agricultural and light residential traffic that are unsuitable for the weight and amount of natural gas industrial traffic.

Benefits of best practice: Since 2001, the OGRRIP program has upgraded about 2500 kilometres of roads and bridges that are used extensively by the oil and gas industry in northeastern BC.

These side road improvements include:

- > strengthening and improving more than 1600 km of graveled surface
- widening and hard surfacing more than 890 km of roads in the northeast
- replacing 3 bridges and rehabilitating 9 others

Improving 18 intersections

Resources/References: N/A

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Manitoba Profile

Northern Manitoba is characterized by vast distances, isolated populations and complex terrain. These conditions create challenges for communities and businesses when building and maintaining transportation infrastructure and transportation services. Partnerships among governments, communities and businesses are necessary to share in the risks and benefits of investment. A key feature of transportation in Manitoba's north is multi-modalism, where a network of road, rail, air, and ferry service providers work together to deliver goods to markets and people to jobs and services.

<u>All-Season Roads and Highways:</u> North of the 53rd parallel, the Province of Manitoba maintains about 2,500 kilometres of highways. Highway #6 is the backbone of northern Manitoba's transportation network. This highway connects Winnipeg in the south to the communities and industries across northern Manitoba, Nunavut and Northern Ontario. This important artery is responsible for opening the north to mining, hydroelectric development, logging, commercial fishing and tourism.

<u>Winter Roads</u>: Every winter, a 2,500 km network of winter roads is built across the north and on the east side of Lake Winnipeg. This network provides seasonal access for over 30,000 Manitobans across 23 communities. The winter road program is administered by Manitoba Infrastructure and Transportation, and relies on partnerships with local communities, First Nations, the East Side Road Authority and the federal government.

Rail: Freight and passenger rail services are provided on more than 800 miles of railway lines in northern Manitoba, which includes the 545 miles of railway from The Pas to Churchill, known as the "Bay Line" and operated by the Hudson Bay Railway / OmniTRAX. The Pas serves as the interchange point with Canadian National Railway and with the Keewatin Railway Company – Canada's first First-Nations-owned railway company that operates a route of 185 miles from Sherrit Junction (near Flin Flon) to Pukatawagan and Lynn Lake. Truck/rail interchanges are provided in Thompson and The Pas. Six remote, rail-only northern communities rely on the rail service as the only surface transportation option for freight and personal mobility (Churchill, War Lake First Nation, Ilford, Pikwitonei, Thicket Portage and Pukatawagan). Passenger rail services are provided by Via Rail.

Airports: Air transportation is important to the north, where you will find an airport in almost every community. Manitoba Infrastructure and Transportation operates 24 northern remote airports in communities that are only accessible by airplane or winter road, with few exceptions. The federal government operates one remote airport at Churchill, which was built by the United States military. Churchill's airport has the longest runway in Canada's north and serves communities and businesses across the Arctic region. All other airports in Manitoba are operated by local communities, including Thompson airport, which is the hub of northern Manitoba and the second-busiest passenger terminal in the province.

<u>Ferries:</u> Manitoba Infrastructure and Transportation operates 5 seasonal ferry services in the province. Two ferry services operate on Lake Winnipeg, connecting communities on the east side of the lake to an all-season road on the west side. Three ferry services operate in northern Manitoba, providing access to nearby all-season roads.

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Transportation: Challenges and Opportunities

Developing All-Season Roads

Manitoba's winter road network has become increasingly vulnerable to annual temperature fluctuations due to climate change, particularly on more southern routes east of Lake Winnipeg, where the system has experienced repeated failures. In some years, fast-melting roads have resulted in costly emergency airlifts for communities and the evacuation of a few stranded trucks and drivers. To extend and stabilize the winter road season, Manitoba Infrastructure and Transportation has been relocating ice-roads onto land and building bridges over some river crossings. Since 2001, 25 per cent (over 600 km) of Manitoba's winter road system has been moved from ice onto land.

Transportation is a key enabler for a variety of social and economic priorities. Given the relationship between and transportation and development, combined with the growing irregularity of the winter road season, the Province of Manitoba is implementing a long-term plan to replace winter roads with all-season roads. In 2009, Manitoba created the East Side Road Authority with a mandate to develop a network of all-season roads on the east side of Lake Winnipeg. More than \$1 billion over 15 years has been committed to the East Side Road initiative. The project is being implemented under the guidance of various Community Benefits Agreements, ensuring local access to jobs, training and development opportunities. The first leg of the East Side Road is scheduled to open in fall 2014, connecting Bloodvein First Nation to the all-season road network in southern Manitoba.

In 2011/12, as part of a continuing strategy to focus on expanding and promoting development in the north, Manitoba Infrastructure and Transportation initiated the Northern Manitoba Remote Communities Transportation Network Study. This process will establish recommended routes (preferred alignments) for all-weather roads into 10 remote communities in northern Manitoba (Churchill, Shamattawa, York Landing, Ilford, Pikwitonei, Thicket Portage, Pukatawagan, Brochet, Lac Brochet, and Tadoule Lake).

Manitoba and Nunavut have committed to develop and improve the transportation linkages between our regions. When it comes to roads, past efforts have focused on an all-season road from Gillam (Sundance), Manitoba to Rankin Inlet, Nunavut. Studies undertaken in 2007 and 2010 estimate development costs for an all-season road to be about \$1.5 Billion (as of 2010) and would take over 20 years to build. Given these challenges, a winter road is being considered as a first step.

Arctic Gateway

Climate change is opening up the Arctic to trade and transportation, presenting opportunities for the Port of Churchill gateway. Located on the western shore of Hudson Bay, the Churchill Gateway System - the Port of Churchill and the supply chain that serves it - provides shippers with shorter distances and transit times to many parts of Europe, Africa, the Americas and Asia. As well, the port's proximity to the Arctic region allows the Churchill gateway system to be a cost-effective supply chain for many Arctic communities and emerging resource developments.

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The Churchill gateway system is an important asset in northern Manitoba, generating employment and contributing to economic growth for Manitobans. Several communities rely on the transportation system as their only surface-based link to the global economy. Manitoba's vision for this unique asset is to position it to be an Arctic Gateway, deriving economic activity, jobs and growth for the entire Hudson Bay region.

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Manitoba - Churchill Gateway System Partnership

Type of Practice: Program, Policy

Description of best practice:

To capture emerging opportunities, the governments of Manitoba and Canada, in partnership with OmniTRAX, are investing in traffic-diversifying capital improvements to the Churchill gateway system. Announced in 2007, the governments of Manitoba and Canada committed to invest up to \$48 million in the Churchill gateway system to rehabilitate the Bay Line and to invest in traffic-diversifying capital upgrades at the port. OmniTRAX is investing \$20 million to the project. In 2012, in response to federal grain marketing reforms, Canada invested a further \$4.1 million towards port maintenance and implemented a \$5 million/year incentive to grain shippers who use the port during the transition to an open grain market.

Why the best practice was used: Developing and maintaining infrastructure in Canada's north can be costly. Multi-party partnerships provide a mechanism for advancing the public interest within commercial decision-making frameworks, while balancing the burden of investment among all stakeholders.

Benefits of the best practice: Improved operating performance on the rail line, combined with support for shippers, has spurred trade activity through the Arctic Gateway.

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Manitoba - East Side Road Authority

Type of Practice: Program, Project and Operational Practice

Description of best practice: In 2009, Manitoba created the East Side Road Authority (ESRA) with a mandate to develop a network of all-season roads on the east side of Lake Winnipeg. ESRA's objectives are to construct all-season roads in the region, while ensuring that local communities participate in, and benefit from, the road projects.

To achieve its objective, ESRA has established an Aboriginal Engagement and Economic Development Strategy that consists of:

- Community Benefits Agreements (CBAs) that provide direct construction contracts to local communities that generate jobs, training and economic opportunities;
- Tendering and Procurement Requirements that require contractors to hire a percentage of total work hours from local residents;
- > <u>Training</u> that provides opportunities for local residents to participate in construction training courses;
- Facilitation services whereby ESRA maintains a "trades database" of local, trained workers from which contractors may select workers for a project. ESRA also provides business mentorship to communities and local businesses.

In undertaking its work, ESRA works closely with all communities, receiving direction and advice from those it serves, providing a sense of ownership and pride for residents.

Why the best practice was used: The lack of a ready, trained, local construction workforce prevented local communities from bidding on construction projects.

Benefits of the best practice: ESRA's framework ensures local communities participate and benefit in the all-season road project. The benefit of the ESRA model is that it provides an immediate pool of local, capable residents to enter the workforce, who are then able to participate in the region's other industries.

Resources/References: http://www.eastsideroadauthority.mb.ca

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New Brunswick Profile

While there are no "northern" or "remote" regions in New Brunswick per se, almost half of the province's population resides in rural areas (approximately 356,700 people). Furthermore, the province has a large number of local entities including 99 Municipalities, 7 Rural Communities and 245 Local Service Districts. As a result, the province bears a vast transportation system connecting communities to major networks:

- Roads: Nearly 19,000 km of roads, ranging from major highway to gravel roads, are currently operated and maintained by the Department of Transportation and Infrastructure. An additional 3,800 km, considered to be either "resource" or "public roads", are not maintained by the provincial government at this time.
- Rails: Rail services in New Brunswick include both freight and passenger services. Freight services are available through both provincially and federally regulated railways, operating a total of approximately 1,200 km of tracks throughout the province. Passenger services, offered through VIA Rail, mostly focus on communities along the northern border and the east coast.
- <u>Regional/Local Airports:</u> In addition to three airports that are part of the National Airport System, New Brunswick has four Regional/Local airports two of which offer scheduled air services. Airports registered for public use are also available in five other communities.
- Ferries: New Brunswick's road network is connected by 10 ferry crossings. Most of which are located in rural areas.
- Ports: Ports in New Brunswick retain a leading role in bulk transportation. There are four marine cargo ports in the province. While one of them is located in a major urban area, the remaining three are operated in communities with a population of less than 2,300 inhabitants.

Key Issues and Priorities

Whether dealing with aging infrastructure, budgetary constraints, weather related issues, or maintaining connections for passenger and freight services, New Brunswick is currently confronted with a number of challenges when it comes to the management of its transportation infrastructure.

Priorities going forward include the development of a long-term infrastructure planning framework, sound asset management policies as well as balancing sustainable transportation and economic competitiveness to allow the safe and efficient movement of people and goods.

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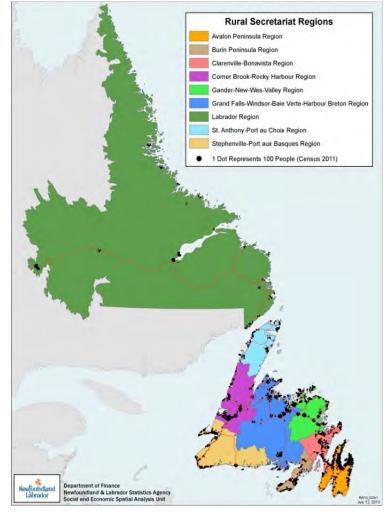
Newfoundland and Labrador Profile

The Province of Newfoundland and Labrador is largely a rural and remote province. The province has a vast geography with 514,536 people spread over 370,511 square kilometres; giving us the lowest population density of all the provinces in the country at 1.4 people per square kilometre. Just over 50 per cent of residents live on the Avalon Peninsula. The Province is comprised of 451 communities; 271 municipalities (including 3 cities), 5 Inuit Community Governments, 2 federal Indian Reserves, and 172 local service

districts. Most of these communities are very small in terms of population size with only one community having a population greater than 25,000; six having a population between 10,000 and 25,000; 62 with 1,000 to 10,000 people; and 382 below 1,000. Additionally, there are approximately 14,300 people who live in roughly 230 unincorporated areas throughout the Province.

Ninety-five per cent of the population lives on the island portion of the province which has no direct road link to the rest of the Country but rather are reliant on the Marine Atlantic ferry service. The other five per cent live in Labrador in the northern part of the Province. Thirty communities have no road link to the main transportation corridor and are serviced by ferries; with nine northern communities only having ferry service from June to December.

The provincial road network is comprised of just under 9,800 kilometres; with just over 2,500 kilometres (26%) of that being part of the National Highway System. The Province is responsible for the provision, maintenance and management of 17 provincial ferries servicing over 30



communities throughout the province. Marine operations include seven government-owned and operated vessels, two government-owned and privately operated (through a contract with the Provincial Government) vessels and eight privately-owned contracted vessels, serving approximately 7,365 residents across the Island and approximately 26,700 residents throughout Labrador.

The province has an extensive aviation network connecting all regions of the province directly or indirectly to the rest of the country and the world. The province has two National Airport System Airports (St. John's

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and Gander), six Regional/Local Airports (Deer Lake, Stephenville, St. Anthony, Churchill Falls, Goose Bay, and Wabush), 13 coastal Labrador airstrips, and seven airstrips on the island portion of the province in support of our air ambulance and water bombing services.

Currently the only railways in the province are the ones in western Labrador related to, owned and/or operated by or on behalf of the iron ore companies in the region for the transport of product and other goods and supplies related to their operations. These railways are not physically connected to the remainder of the Canadian rail network.

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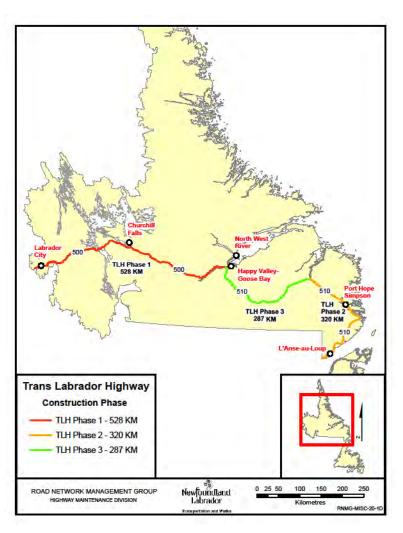
TASK FORCE REPORT

Newfoundland and Labrador – Trans Labrador Highway/Year-Round Ferry Service

Type of Practice: Project

Description of Best Practice: Often projects in northern and remote regions cannot simply be based upon economic business cases but rather needs to include social needs and equitable access to goods and services

for people throughout the country. In deciding to build a highway across Labrador many factors led to the decision to complete one of the largest and most significant transportation projects in the Province's history. Construction of the highway commenced in 1997. The highway was completed in phases and was initially constructed as a gravel road. Phase I, from Happy Valley-Goose Bay to the Quebec border in Labrador West opened in 1998. Phase II, from Red Bay in southern Labrador to Cartwright, opened in 2003 (there was already a road from Red Bay to the Quebec boarder on the east). With the opening of Phase III, from Happy Valley-Goose Bay to Cartwright Junction, in December 2009 there was now a complete road link across Labrador. In conjunction with this the Province commenced yearround (rather than seasonal) ferry services across the Labrador Straits, giving people in these regions yearround road/marine access. Work has also commenced on widening and paving the Trans Labrador Highway. The construction of all three phases of the Trans Labrador Highway cost



\$371.8 million; with a further \$615.3 million estimated to widen and pave all three phases; and the extension of ferry services to year-round cost \$1.5 million annually.

Why the best practice was used: The decision to build a highway across Labrador was based on the desire to increase access to goods and services across Labrador. It provided the rest of Labrador, as well as the Island portion of the Province, with a road link to the iron ore rich area of Labrador West and Labrador West with a road link to the marine port in Happy Valley Goose Bay. Residents and goods could now travel freely across Labrador and to and from the Island portion of the Province.

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Benefits of the best practice: With the completion of the Trans Labrador Highway from east to west and the implementation of year-round ferry services on the Labrador Straits we have seen a change in how goods move in and out of Labrador, as well as increased connectivity to social activities and services such as health and education. It is anticipated that once the highway is paved we will see a further increase due to enhanced ease of travel. Socially and economically, the Trans Labrador Highway is providing greater accessibility between communities and is opening doors to new opportunities for both residents and businesses. The investment in the Trans Labrador Highway has improved the ability of Labradorians to be connected, not only to different regions and businesses, but to each other as people.

Resources/References: N/A

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Northwest Territories Profile

The Northwest Territories (NWT) covers 1.2 million square kilometres comprising over 10 percent of the total Canadian landmass. Our population, of approximately 43,000 residents, lives in 33 communities. The most northerly is Sachs Harbour on Banks Island and the most southerly is Fort Smith adjacent to the Alberta border. Our communities range in size from the largest, Yellow-knife, with a population of 19,752 to Kakisa, our smallest, with a population of 71. Aboriginal people (First Nations, Métis, and Inuit) comprise over half the NWT population. The entire population of the NWT is one-tenth of one percent of Canada's total population.

The under-developed surface transportation system in the Northwest Territories consists of approximately 2200 kilometres of all-weather road, 1425 kilometres of public winter road, and other winter roads constructed privately to access remote project locations. All-weather and winter roads in the NWT are a vital link in the supply chain for non-renewable resource exploration, development, and the resupply of essential fuel and food. This limited surface transportation system is under increasingly extreme pressure from recent industrial expansion. At the same time, the lack of land-based transportation infrastructure creates inefficiencies for resource firms to develop, produce, and bring their goods to market. It also creates reduced mobility and a higher cost of living for Northerners. NWT residents, business, and industry also rely heavily on the air system for mobility and resupply. The 27 community-based airports in the NWT were designed to meet typical community needs prior to the dramatic increase in resource development traffic.

The NWT economy is driven primarily by the mining, oil, and gas industries. These three industries contributed more than 31per cent of the NWT GDP in 2011, with diamond mining contributing more than 24 per cent. GDP in current prices increased 10 per cent over the 2006-2010 period; reflecting strong price gains in oil and diamonds. Real GDP, which accounts for inflationary changes in prices, is measured in the NWT in \$2002 dollars.

The NWT has a resource base with a non-renewable resource sector that continues to be the key economic driver. In 2011, mines and mineral development contributed \$768 million in spending to the NWT economy. Four mines are currently producing in the NWT: three diamond mines and one tungsten mine. Diamond mining is a high value activity that produces a large amount of output and influences most aspects of the NWT economy. Development of an additional diamond mine, Gahcho Kué, and other developments such as the Prairie Creek Mine will continue to sustain positive economic growth. Other new potential mining activity includes seven significant mineral projects in various stages of development in the NWT.

Approximately 16.2 trillion cubic feet of natural gas and 1.2 billion barrels of oil have already been discovered in the NWT, only a small part of the estimated potential of 81 trillion cubic feet of natural gas and nearly 7 billion barrels of oil. Gas reserves in the Mackenzie Valley Corridor, including the Mackenzie Delta and Beaufort Sea, are estimated at 55 trillion cubic feet. There are more than 70 exploration wells and more than 300 developed wells in the Mackenzie Plain area near Norman Wells.

The world-class potential of the Canol Shale oil play in the central Mackenzie Valley continues to grow and with it the opportunity to increase economic development that will generate employment and business opportunities for Northerners, especially in the Sahtu Region. Development in this region of the NWT is

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particularly challenged by the short window of operation for winter roads that are open long enough to transport only one drill site per season.

The importance of access to land and resources is critical to an economy driven by exploration and extraction. Infrastructure improvements will reduce operating costs and increase reliability allowing more Canadians to participate in our economic prosperity.

Challenges to unlocking the potential of the NWT include:

- Geometric deficiencies: Most of the highway system does not meet geometric standards nor are the roads strong enough to meet the demands placed on it, particularly during spring thaw. The increase in traffic volume and trucks carrying more efficient highway loads demands a strengthened road structure as well as improved geometry to safely accommodate the changing composition of traffic. Transportation infrastructure now requires reconstruction, rehabilitation, and resurfacing to address age-related issues, to increase structural capacity, and to maintain the geo-metric integrity.
- > <u>System reliability:</u> The surface transportation system relies on ferries, ice bridges and winter roads to connect communities and provide access to resources. However, the transportation infrastructure is subject to winter freeze-up, spring break-up, and other climatic influences that can affect the duration and reliability of the system of winter roads, ice crossings, and all-weather roads.
- Climate change: The northern regions of Canada are facing some of the greatest impacts of climate change. Permafrost degradation has led to structural failures of infrastructure resulting in emergency repairs and reduced reliability of winter access routes critical for the resupply of fuel, food, and materials. Increased precipitation has resulted in increased right-of-way clearing, decreased gravel road stability, and greater use of de-icing agents on air-craft.
- Construction costs: Competition within a limited trades and skilled labour force, short construction seasons, the high cost of transporting material and equipment to remote locations, and the availability of goods and energy when combined, results in substantially higher construction costs compared to southern Canadian jurisdictions.
- <u>Cost of living:</u> Characteristics of living in a vast, sparsely populated region of Canada are the logistical challenges and cost of transporting goods into communities, which contributes substantially to the cost of living.

The Government of the Northwest Territories is seeking to improve the standard of living in the North by increasing access to communities. Improving connections to communities influences the dependability, availability, mode, and cost of transportation services.

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NWT - Mackenzie Valley Highway Project Description Reports

Type of Practice: Operational Practice

Description of best practice: The Mackenzie Valley Highway will enhance northern security and sovereignty and improve the response to emergencies and the ability to adapt to changing climatic conditions. The highway will support the non-renewable resource industry, facilitate the diversification of the NWT economy and improve the quality of life of its citizens who will gain better access to essential services, increased mobility and a lower cost of living. These benefits will realize safer and healthier communities.

Under Memoranda of Understanding, the Department of Transportation partnered with four aboriginal groups and two communities to complete five Project Description Reports (PDRs) for the construction of the Mackenzie Valley Highway (MVH). The development of a PDR is the first stage of the regulatory process and sets the context for environmental assessment. It provides a preliminary design, assesses its effects and identifies appropriate mitigation to enable the Highway to be constructed. Community consultation is a key component of the process. The aboriginal groups and communities were responsible for managing all aspects of the work.

Four PDRs covering the 818 km section of the MVH from Wrigley to the Dempster Highway were combined into one scoping document and submitted to the Mackenzie Valley Land and Water Board to define the environmental assessment process for this project. This process is on-going. The Hamlet of Tuktoyaktuk and the Town of Inuvik, in partnership with the Department completed the fifth PDR for the 137 km Inuvik to Tuktoyaktuk Highway (ITH). The PDR formed the basis of the Environmental Impact Statement, which was approved by the federal government in February 2013. Construction of the ITH commenced in the winter of 2013/14.

Total funding in the amount of \$8 million to develop regional PDRs was cost shared 50/50 between the Government of Northwest Territories and the federal Canadian Northern Economic Development Agency.

Why the best practice was used: Typically, the Department of Transportation (DOT) leads and manages the work associated with a PDR. Given the scale of the project, it was decided to involve aboriginal groups and communities at the earliest stage to develop trust and empowerment.

Benefits of the best practice: The aboriginal groups benefitted from capacity building and skill development in program management, contract administration and financial reporting. They established more appropriate consultation formats and schedules, and better incorporated traditional knowledge into the PDRs. DOT benefitted from the timely support of the project.

Resources/References: More information is available on the Department of Transportation website: http://www.dot.gov.nt.ca/_live/pages/wpPages/MVH_Overview.aspx

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Nova Scotia Profile

Infrastructure is the backbone of Nova Scotia's economy and is critical to sustaining and strengthening our communities. Unlike many other provinces, the Province of Nova Scotia is responsible for maintaining the majority of all public roads in the province (90 per cent) – 23,000 kilometres and 4,100 bridges. Further, ninety percent of the provincial roads serve rural areas which make up 44% of our population.

We need to ensure rural communities have essential access to major domestic and international markets. The province provides an intra-provincial ferry service serving rural areas, a core piece of transportation

infrastructure for these communities. Funding is also being provided for the inter-provincial ferry between Nova Scotia and New Brunswick, and the international ferry between Nova Scotia and Maine. The Province currently provides financial support for the continuation of rail service to industrial Cape Breton Island. While the rural and island areas of Nova Scotia may not be considered remote the communities expect to have access similar to the urban areas of the Province.



The biggest challenge for Nova Scotia is the rehabilitation of our existing highway infrastructure. We selected our Five-Year Highway Improvement Plan as our best practise as it outlines major work on our highway infrastructure over continuing five year periods. The plan provides the public and communities with a better understanding of the facts and process surrounding the government's efforts to improve our highways and roads throughout the Province.

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Nova Scotia – 5-year Highway Improvement Plan

Type of Practice: Policy and Plan

Description of best practice: The 2014-15 Five Year Highway Improvement Plan maps out government's approach to repairing and maintaining the province's 23,000 kilometres of roads and highways and 4,100 bridges. The plan outlines major highway and road projects, repaving, major bridge replacements, capital maintenance and infrastructure work the province plans to pursue year by year over the next five years. It also includes road construction facts, explains how projects are prioritized and the funding required.

Sharing the specific plans for road improvement in the Five Year Highway Improvement Plan gives private companies better opportunity to prepare for the more than 120 upcoming highway improvement projects in 2014-15. It also helps to inform Nova Scotians about the improvements being made in their communities and how these projects are selected.

The road building industry in Nova Scotia is a large source of jobs, creating an estimated 5,000 direct and 2,500 indirect positions every year. The annual payroll for Nova Scotians employed in road building is approximately \$300 million. For instance, a typical \$2 million paving contract generates about 60 direct jobs and about \$200,000 worth of business for the trucking industry and spin-off benefits for local businesses that provide construction materials, metalwork/welding, engineering, electrical and hazard removal.

Why the best practice was used: A five year plan will serve as a long term blueprint for building and maintaining our highway system. The plan will also increase transparency around road building in Nova Scotia. This kind of longer term planning and reporting will help us make the most of available federal dollars and work more effectively with communities and road builders.

Benefits of the best practice: *Greater public understanding of the road network, what is for and how we are* spending *government money.*

A more balanced approach is being taken to improve roads. We are no longer always addressing the worst first. We are more focused on pavement management and preservation to increase both the overall condition of the highway system and reduce the number of kilometres needed to be repaired in any given year. The public is able to see the criteria the Department uses to make decisions regarding, 100 Series Highways, Trunk, and low volume roads.

Resources/References: http://novascotia.ca/tran/highways/fiveyearplan.asp

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Nunavut Profile

Created via the Nunavut Act in 1999, Nunavut is the largest, northernmost and newest territory of Canada. In terms of land area the territory is roughly the size of Western Europe. With a population of approximately 35,000 people living in 25 communities, it is one of the most sparsely settled regions in the world. Nunavut is rich in non-renewable resources and supports a thriving mining and mineral exploration industry in iron ore, gold, copper, diamonds, silver and uranium.



The main mode of transportation is by air. Nunavut's airport system is centered on regional hubs which provide access to and from territorial and southern Canadian destinations. The marine resupply system is relied upon annually to bring building materials, fuel, vehicles and non-perishable goods to all of the communities. The territory does not have a traditional road system but does support a small network of trails that provide access to hunting, fishing and camping areas for community residents. Nunavut is the only territory or province that is not connected to the National Highway System.

Airports

Nunavut's 25 communities are served by 24 certified airports and one registered aerodrome. These are mostly gravel runways; only the runways in Iqaluit and Rankin Inlet are paved. The airport system is centered on the regional hubs

of Iqaluit, Rankin inlet and Cambridge Bay. These airports are configured for jet aircraft while the smaller centers are serviced with propeller aircraft such as the ATR-42 and Dash-8.

Capital improvements to aging airport infrastructure have been made to the hub airports over the past several years. A 20 year capital needs assessment for Nunavut Airports has been updated and will be used as a tool to plan the ongoing infrastructure maintenance and development required to meet the needs of Nunavut residents.

Marine Infrastructure

Though Nunavut makes up approximately 40 percent of Canada's coastline it possesses only one small craft harbour in the Baffin community of Pangnirtung that is capable of supporting a viable commercial fishing

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industry. Feasibility studies for other marine infrastructure ranging from small craft harbours to large multiuse marine facilities have been prepared for many communities.

Roads and Trails

Nunavut has only one road that connects the community of Arctic Bay with the former mining site of Nanisivik. No other communities in Nunavut are connected by a road system. Most communities do have a series of roads and trails that connect the residents to hunting, fishing and camping sites.

Challenges

Nunavut has challenges similar to other northern regions when it comes to managing and developing transportation infrastructure. Aging infrastructure, permafrost degradation, high construction costs, short construction season, budgetary constraints and harsh climate conditions are the main barriers to the realization of Nunavut's full economic potential.

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Ontario Profile

Northern Ontario is characterized by large distances between communities and low and dispersed population centres. The Far North and Near North have different issues regarding transportation. In the near north, issues revolve around those which support economic development, mobility and accessibility. In the far north the issues relate to critical services access. Generally, a majority of transportation issues in these regions relate to mobility and connectivity.

The vast geographic distance and low population present many transportation challenges.



The Ontario government developed a Growth Plan for Northern Ontario – under the Places to Grow Act, 2005 – to support economic growth in Northern Ontario. The Growth Plan contains the following directions for the future transportation system for Northern Ontario:

- Optimizing the capacity, efficiency and safety of the existing transportation system;
- Providing links to major markets, resource development areas, and economic/service hubs;
- Working to meet the needs of existing and emerging economic sectors and helping to implement regional economic plans;
- > Enhancing links between transportation modes including rail, road, marine and air;

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- > Creating and/or strengthening links between rural/remote communities and economic/service hubs;
- > Reducing emissions and other environmental impacts associated with transportation.

The Ministry of Transportation is currently leading the development of a Northern Ontario Multimodal Transportation Strategy (NOMTS) that will help to implement the Growth Plan for Northern Ontario and support economic development. The Strategy will identify transportation policy, program and investment opportunities for a modern and sustainable multimodal transportation system, and will address bus and train services in addition to air, road, and marine transportation. It is being developed through consultation and technical studies, and will provide a blueprint for a modern and sustainable transportation system in the region.

Airports

The province operates twenty-nine remote airports in Northern Ontario. 27 of the remote airports serve First Nations communities. For 26 of these communities, the airport provides an essential link for supplies, and health-related transportation. The other First Nations community has all-weather road access to the provincial highway. Remote airports are also critical for resupply of the mining sector.

There are 38 municipal airports in northern Ontario that play an important role in regional and community economic development. Due to the vast geographic distances municipal airports support air ambulance/medevac activity, fire suppression and search and rescue and other unique activities.

<u>Rail</u>

Northern Ontario is connected by rail systems to eastern and western Canada. There is nearly 11,000 km of transcontinental Class I Railway lines (CP and CN Rail) and two regional railways. Three passenger rail services are available, with only one going as far north as Moosonee.

Marine

The north shores of Lake Superior and Lake Huron are the backbone of the marine transportation network in northern Ontario. The St. Lawrence Seaway connects Southern Ontario, Eastern Canada and the rest of the world through the Great Lakes.

Thunder Bay is at the head of the Great Lakes-St. Lawrence Seaway System, and is one of the largest grain-handling ports in the world.

Sault Ste. Marie is host to a private port facility owned by Essar Steel Algoma which hauls large volumes of coal, iron ore, steel and other products.

Winter Roads

Typically, winter roads operate in the north from mid-January for a period of six to eight weeks. The effect of climate change on the winter road season is creating concerns about access and development. Presently, there are 3,138 km of winter road system which links 31 remote First Nation communities with the provincial highway system. Winter roads provide critical access for about 21,000 people.

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Road Networks

The provincial highway network in the north consists of nearly 11,000 km of highways. There are also 4,400 km of local roads and 30,000 km of forest access and 3,138 km of winter roads (which are not provincial highways).

Industry Resource Areas

The Ring of Fire area in the James Bay lowlands is a major resource development opportunity. However, a key challenge is the lack of access by rail or road. A shortened winter road season is impacting more northerly industries. Issues involving connection to supplies, labour force and markets are prevalent.

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Ontario – Rapid Bridge Replacement

Type of Practice: Operational

Description of Best Practice: The Ontario Ministry of

Transportation builds and maintains roadway infrastructure in sparsely populated, remote locations as well as in high-density areas. Rapid Bridge Replacement techniques are being used for the renewal of rural, low-volume bridges so that a structure can be replaced in a straightforward, four-hour installation process which avoids many of the problems caused by traditional methods.

Typically, after removing an existing structure, engineered prefabricated concrete footings are installed at both ends to support the new bridge. A crane is then used to lift and place a pre-

fabricated, all-steel structure on bearing pads, where it is properly affixed. Due to the pre-fabrication, future refurbishment of the bridge will simply entail removing it for repairs and then placing it back again.

For example, the original bridge replacement plan for Bass Lake Bridge (near Sault Ste. Marie) included a



concrete rigid frame construction, with a three month construction period and an estimated cost of \$1.3 million. Instead, the alternative prefabricated bridge was used, and was installed in 4 hours at a total cost of \$115,000.

Using this new method, MTO has installed more than thirteen bridges on low-volume roads that accommodate less than 400 vehicles per day. With thousands more municipally-owned, low volume road bridges across Ontario, a wider adoption of this pre-fabricated bridge technology could potentially save hundreds of millions of dollars, in addition to improving service to rural citizens and the environment.

Why best practice was used: To reduce the impact on the surrounding

community and to save money.

Benefits of the best practice: Inconvenience to local residents is minimal as the total road closures last about twelve hours, rather than three months, and no detour is required. There is little environmental impact because the bridge is dropped into place and avoids in-water work. Due to its pre-fabrication, future refurbishment of such bridges entail simply removing it for repairs and then placing it back after the work is completed.

This method of replacement produces significant savings compared with the conventional replacement. With all labour, materials, and traffic control costs included, a pre-fabricated bridge costs about \$140,000, close to one-tenth of the cost of a conventional bridge replacement.

Resources/References:

Road Talk: Ontario' Transportation Technology Transfer Digest: http://www.mto.gov.on.ca/english/transtek/roadtalk/rt17-1/index.shtml#a4

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Ontario – Automated Weather Observation Systems (AWOS) at Remote Airports

Type of Practice: Operational Practice

Description of best practice: Ontario has installed AWOS at almost all of its 29 remote Northern Ontario airports. In 2014, AWOS systems will be put into place at four remaining remote airports, ensuring improved service reliability and safety at every location.

AWOS systems automatically collect and measure data that is used to create weather reports on conditions that can impact flights. This includes wind speed and direction, cloud height, visibility, precipitation occurrence and amounts, and temperature.

The systems will be operational by late fall 2014 at Attawapiskat, Ogoki Post and Peawanuck. Initial work will be completed at Armstrong in the fall of 2014, and is expected to be operational in summer 2015. This follows recent installations at Sandy Lake, Muskrat Dam, Fort Severn and Lansdowne House.

NAV CANADA, (a private sector service provider that owns and operates Canada's civil air navigation service), supplies and installs the AWOS systems in Canada. While NAV Canada does not normally get involved with automated weather stations in low-traffic facilities of this kind, it has agreed to install, operate and maintain these weather stations, with the funding provided by the Government of Ontario.

Improving the reliability and safety of transportation services is part of the Ontario government's economic plan to invest in people, build modern infrastructure and support a dynamic and innovative business climate.

Why the best practice was used: AWOS greatly improves safety and reliability for air carriers. Remote airport operations are heavily influenced by the weather, servicing communities that do not have year round road access. Without these AWOS systems at its remote airports, there could be many missed medical flights, and a significantly increased risk of weather-related aircraft accidents.

Benefits of the best practice: Using AWOS systems, air operators can make informed decisions on whether to depart, delay or cancel a flight to one of the airports, so that they can provide more reliable medical flights, scheduled flights and commercial/resource development services.

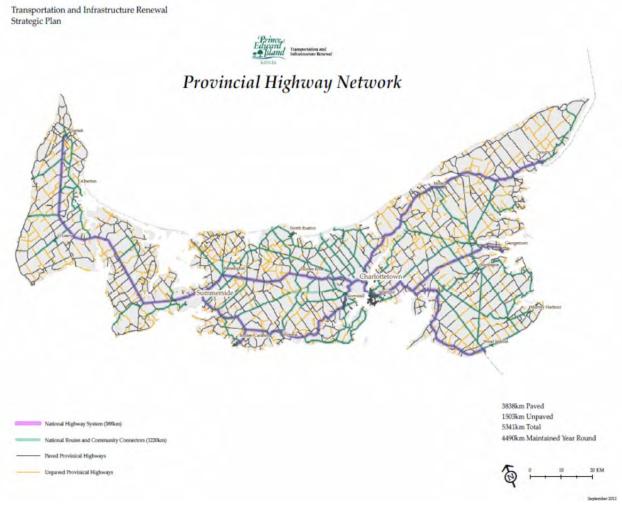
Resources/References: N/A

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Prince Edward Island Profile

Prince Edward Island is a rural based province. Outside of the cities of Charlottetown and Summerside, the Island is made up of smaller towns and villages with populations well below 9,000 people. In fact, according to the 2011 census 53 per cent of the Island's population, (146,000 people), live in rural communities. This represents almost 79,000 people. Beyond the 1,284 kilometres of road network designated to be a part of our National Routes and Community Connectors (NRCC), PEI has 2,551 kilometres of paved road and 1,503 kilometres of unpaved road. The Island's Road network is highlighted in the photo below.



Relative to many parts of Canada, there are no remote regions in Prince Edward Island. Even the most rural communities are accessible throughout the year by road and are able to link onto the Island's multimodal transportation network through the NRCC. The NRCC meets the challenge of ensuring rural PEI is connected to the rest of the province and the multimodal transportation network in the region.

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Prince Edward Island - National Routes and Community Connectors Strategy

Type of Practice: Policy, Project

Description of Best Practice: The NRCC strategy is what drives the policies and operations behind the province's highway network. Managed by the Department of Transportation and Infrastructure Renewal, this policy was designed and implemented to ensure every community, rural or urban, has access to a well maintained and serviced road that connects with the rest of the Province.

The NRCC is made up of 1,284 kilometres of road, including 388 kilometres highways classified as being a part of National Highway System. This network represents 24 per cent of the total roads and carries 84 percent of all traffic in the province. In addition, 85 percent of all Island civic addresses are in communities connected to the NRCC.

Maintaining the NRCC is important for both social and economic reasons. These roads are connected to all four of the Island's major ports, the airport, the two ferry services and the Confederation Bridge. With the vast majority of goods being moved by truck, this strategy is vital to the Island's economy. The network is also well travelled by Islanders using essential services such as healthcare and education in addition to community services and travelling to larger centres for work. These roads are the most travelled because they connect communities to the rest of the province, the country and the World.

Ensuring the network is functioning at its highest efficiency is vitally important to the Government of Prince Edward. The Department spends the majority of its capital budget on maintaining and improving the NRCC. Winter operations on the NRCC are fully maintained by the Department's Highway Maintenance Division.

Why the best practice was used: Islanders expect quality service from their Government when it comes to access and connectivity. It is often a difficult task in any jurisdiction when the demands of an urban centre are so different from those in a rural community. This policy was developed to provide a cost effective and operational efficiency within the Island's provincial highway system to ensure commercial and public mobility throughout Prince Edward Island.

Benefits of the best practice: It provides the Island with a network from tip-to-tip that services every community and connects rural Islanders with urban Islanders in a cost effective and efficient way.

Resources/References: N/A

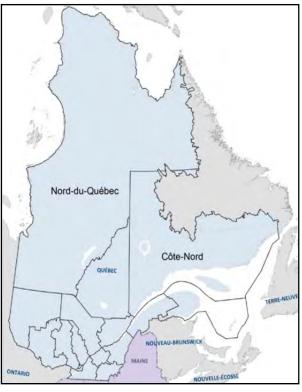
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Québec Profile

Most of the Québec's northern and remote communities are located in the Nord-du-Québec and Côte-Nord regions. Those regions are the largest of the province in terms of area (respectively 718 000 and 237 000 km²)³. They also present the smallest density of population (respectively 0.1 and 0.4 inhabitants per km²)⁴. Many aboriginals and non-aboriginals communities located in those regions are not connected by land transport. The main issues related to the access to those communities are the following:

- > Difficult access to health and education services;
- Expensive people and freight movements which are mainly carried out by air, marine and, to a lesser extent, rail modes;
- High cost of consumption products. Aboriginal households in certain communities are more affected because of their lower income; and
- Struggling economic growth explained, among others, by the remoteness of some communities from each other as well as from the major regional and provincial activity centers.



Location of Nord-du-Québec and Côte-Nord Regions Source : MTQ and CPCS

Other communities of those two regions, although connected to the provincial road network, are also located far from the major activity centers. To some extent, those communities face the same kind of issues. There's also a safety issue for the users of the road network which is mainly located in isolated areas and largely used by heavy trucking.

For Ministère des Transports du Québec (MTQ) development, improvement and maintenance of current and future infrastructures located in those regions represent significant costs and challenges. Moreover, each project must take in consideration sustainable development principles in order, particularly, to reduce negative effects associated to the opening of the territory. It is also necessary to include all the communities involved in the assessment of those projects as well as to respect the existing agreements and conventions with them.

For the development of Northern Québec, a new ministerial committee for the Plan Nord had being put in place in May 2014. It will have, among others things, to maximise the economic benefits for all Québec regions and work with the local population and the Aboriginal communities in a respectful and inclusive manner. It will have to implement the infrastructure projects and the necessary workforce formation.

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³ Source: http://www.stat.gouv.qc.ca/statistiques/profils/region 00/region 00.htm

⁴ Source: http://www.stat.gouv.qc.ca/statistiques/profils/region 00/region 00.htm

TASK FORCE REPORT

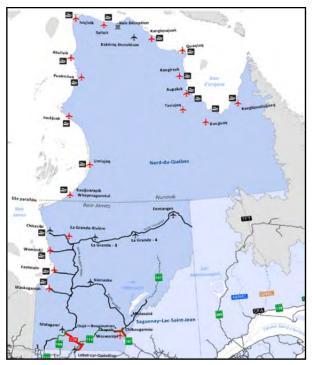
Here are the distinctive features of the Nord-du-Québec and Côte-Nord regions:

Nord-du-Québec Region

Nord-du-Québec region is located north of Abitibi-Témiscamingue, Saguenay—Lac-Saint-Jean and Côte-Nord regions. There is 23 aboriginal (9 Cree and 14 Inuit) and 8 non-aboriginal communities in the region. The access to the territory plays a vital role for economic and social development of the communities. Currently, all villages and communities are served by at least one, two and even three modes of transport.

The road network enabled the exploitation of natural resources and access to many communities located in the Eeyou Istchee-Baie-James sector (between the 49th and the 55th parallel). Given the hugeness of the territory, the 3,150 km road network of Nord-du-Québec is not regarded as very well developed.

The development of the road network in Nord-du-Québec began in the fifties in order to exploit mining then in the seventies, to develop hydroelectric resources (route de la Baie-James, route du Nord



Transportation infrastructures of Nord-du-Québec Region. Source : Étude multimodale sur le transport des marchandises au Québec (CPCS, 2013)

and route Transtaïga). Other secondary roads, built to support the forest industry, improve accessibility of the region for hunting, fishing and trapping activities. Some of those road links, built by the private sector, have become structuring corridors for the development of the region and are now used by the general public and many socio-economic stakeholders. This situation generates some issues of which the financing and maintenance of those links. Moreover, the upgrading of those roads which became "public" because of circumstances, represent an issue, particularly because they were not built for that type of utilization.

Remoteness of the communities as well as the long distances in between whether or not connected to the provincial road network, leads to a significant utilization of the air mode for people movements. The marine mode is used for the movement of goods and petroleum products for the communities not served by road.

Nord-du-Québec region is served by 15 air infrastructures owned by MTQ, 4 by the federal Government and 2 by a municipality as well as 14 marine infrastructures owned by municipalities in Nunavik. The only deep water port in Nunavik is owned by a mining company. Currently, there is a multiplication of transportation infrastructures (air, marine and road) to support the development and exploitation of natural resources in that region.

Travelling in Nord-du-Québec is time consuming, very expensive and demands caution. Considering the remoteness of the northern regions, the geographic conditions (example: arctic tundra and permafrost in

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Nunavik), the environment fragility and the complexity of the supply chain (goods, food and equipment), it is more expensive to maintain and develop transportation infrastructures or to offer transportation services than it is in southern Québec. Moreover, development of mining, forest and hydroelectric industries increase the demand in transportation services for people and goods.

Côte-Nord Region

Located in the northeast of Québec between the Saguenay River and Labrador, Côte-Nord region is featured by 1 280 km of coastline between Tadoussac and Blanc-Sablon, including Anticosti Island. Northern communities of Fermont and Schefferville are also located in Côte-Nord.

There are 33 municipalities in the region, including Baie-Comeau and Sept-Îles, the two most important urban areas of the region which contains half of the regional population of 95,215 inhabitants. 10 Innu and one Naskapi communities are also located in the region.

The Basse-Côte-Nord region located east of Kegaska is not connected to the provincial road network. For decades, local stakeholders have been asking for the extension of Route 138 up to Vieux Fort which is located east of the region and connected by road to Blanc-Sablon.

Basse-Côte-Nord is not served by a road network, so air and marine modes are used to access the territory. Given the importance of those modes

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Transportation infrastructures of Côte-Nord Region. Source : Étude multimodale sur le transport des marchandises au Québec (CPCS, 2013)

of transport, the Regional County Municipality of Le Golfe-du-Saint-Laurent is asking for improved infrastructures as well as better costs of transportation and more flexible schedules for both people and freight movements.

During the winter, inhabitants of Basse-Côte-Nord can travel using a snowmobile path of about 539 km called *La Route Blanche* (the White Route), which is financed and maintained by MTQ. This important route provides a land link between east and west of the region. However, it is only practicable during a few months each year because it crosses many rivers and it is more and more affected by climate change impacts. A good management of this infrastructure is critical given it represents a vital and essential link during winter. The northern communities of the Schefferville area are not connected to the provincial road network either. However, in that case, people and freight movements are mainly made by rail. This area is also served by air mode.

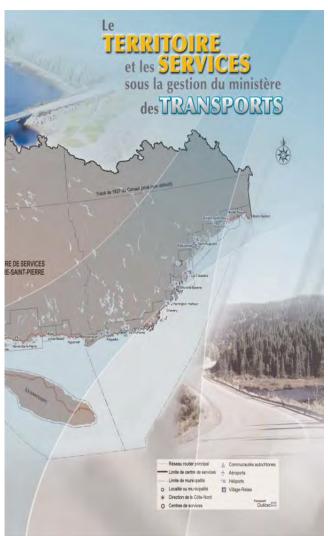
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Québec -- The Route Blanche in Basse-Côte-Nord

Type of Practice: Operational Practice

Description of best practice: In the Basse-Côte-Nord 5,000 residents live in 15 localities and two aboriginal communities which rely on air and marine services for their transportation needs and supplies. This territory is not linked to the Québec road network. In September 2013, the Ministry opened a new portion of Route 138 (44 km) between Natashquan and Kegaska. The plan is to further extend Route 138 between Kegaska



and Blanc-Sablon (400 km) near the Newfoundland and Labrador border. The main goal is to link up these localities by road to facilitate the movement of people and goods and regional development. The project and operations are complicated due to the northern and remote environment. In the summer, the Ministry maintains parts of the road between some localities (from Vieux-Fort to Blanc-Sablon). In winter, the Route Blanche is used. This snowmobile trail is the only land link between Kégaska and Blanc-Sablon during the winter.

Why the best practice was used: The Route Blanche follows the Gulf and St. Lawrence River coast line and has a length of approximately 539 kilometres of marked and groomed trails. The itinerary of the Route Blanche might vary from year to year depending on the obstacles met (lakes and rivers) and harsh climatic conditions. The snowmobile trail is extremely isolated but the Ministry maintains a network of more than 20 emergency shelters with woodstoves and firewood along the way. It is mainly used by the Basse-Côte-Nord residents but also by some tourists for snowmobile excursions.

Benefits of the best practice: The Route Blanche by its nature is a vital and essential link during the winter for the Basse-Côte-Nord residents by allowing access to the different communities.

Resources/References: MTQ Website.

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Québec – Stakeholder Engagement Prior To Implementation of a Permanent Multi-Resource Road

Type of Practice: Project/Consultation

Description of best practice: Environmental concerns are taken into account in the planning and implementation of road infrastructure. To ensure social acceptability of the planned activity or infrastructure, social concerns are addressed during the environmental study process. It is unusual to gather all economic and social stakeholders (i.e. - businesses, municipalities, economic development organizations, Aboriginals, etc.) for prior consultations. On one hand, this consultation allows awareness of the future users' requirements. On the other, it fosters a better dialogue between stakeholders looking for a consensus in order to avoid a disorganized development of a new territory. Given the multi-resource potential north of Chibougamau, stakeholders agreed the best way to tap that potential was to implement a new public access road. To ensure the success of this approach, the Ministry encouraged the participation of all stakeholders at the beginning of the process. Once the official consultations under the environmental study process started, the Ministry ensured stakeholders were informed and asked for their collaboration in order to improve the considered mitigation measures. This continued for more than three years. These prior consultations allowed arrival at the same conclusions as the Strategic Environmental Assessment for servicing remote and inaccessible territories.

Why the best practice was used: At the beginning of the consultation process, the Ministry included a non-partisan organization: The Table Jamésienne de Concertation Minière (Jamesian Table of Mining Consultations). The mission of that organization is to support the development of the mining industry on the Baie-James territory according to the sustainable development principles while aiming to maximize social and economic benefits for the regional population. In addition, representatives of the Cree Nation living in the territory participated at the prior consultations.

Benefits of the best practice: Choice of a common corridor limiting the implementation to only one road which will be used for all new development projects: mining and forestry, wind-powered and recreational tourism. This avoids multiple roads and significantly reduces the effect on sensitive wildlife (ex. woodland caribou). The prior consensus facilitates further steps associated with the social and environmental assessment process. First of all, the justification of the project is a lot less questioned during the environmental study (allows rather to fine tune mitigation measures to be implemented). Moreover, consultation process of the Aboriginals, following the Haïda and Taku River decisions, are taken into consideration before the beginning of the infrastructure assessment and authorization process.

Resources/References: Power Point presentation, 2011.

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Saskatchewan Profile

In Saskatchewan's Northern Administrative District (NAD), development of transportation infrastructure is the most significant barrier to business and economic progress. The lack of an all season road network through the region impedes labour mobility and access to resources, goods and services and important markets. It also limits business and tourism opportunities and the overall quality of life of northerners.

The Saskatchewan Ministry of Highways and Infrastructure has 17 airports, 1 barge and over 2,800 kilometres of road network. The roads are comprised of mostly gravel, with few paved surfaces in this region. Infrastructure in all modes (air, marine and road) is aging, deteriorating and approaching the end of its service life. Due to present priorities and fiscal constraints, maintenance upgrades and capital improvements to infrastructure in all modes may not occur over the short term. Many airports in the region have not had funding for capital improvements for many years. To continue operations, capital upgrades are needed to meet recent regulatory changes and requirements.

NAD Community and Business Profile – Single Points of Failure

There are 45 communities in the NAD. Although most of these communities have a single point of road access, it is not via an all season road. Many communities rely on an airport for year round access and resupply. Others must use a seasonal ice road and/or a barge to make the connection. Isolated communities wholly depend on air services to meet their needs year round.

Seven mine/mill operations, five uranium and two gold mines are presently operating in the NAD. Exploration is ongoing with a number of projects in development. These industries, businesses, expeditions, the justice system, medevac, and emergency services depend upon the airports, seasonal ice roads, barge and existing roads for access and supply of goods and services.

Infrastructure in this region is aging and deteriorating. The condition of the road often impedes access and disrupts the movement of goods and people. Infrastructure that provides a single point of access (airports or the road and any bridges and the barge on the segment) is critical to maintaining access and connectivity. A loss or failure of critical infrastructure can impact multiple communities, businesses and industries. In the last two years, provincial emergency operations, ground support, transportation, temporary shelter and health priority services were provided to three communities at a cost of approximately \$6.5 million. This figure does not include local or municipal expenses, the cost of military evacuation operations and supports, or the financial impact upon business and industry.

To ensure a connection to economic and service hubs and key markets, the communities, business and industry in the NAD need:

- Reliable all season road network;
- > Expansion of access points and incorporation of more than one mode of transportation;
- A source of capital funding, to ensure airports meet recent federal regulatory requirements and are able to continue operating; and
- A sustainable source of long-term funding for maintenance, rehabilitation and expansion of infrastructure systems.

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Saskatchewan - Industry Access Road

Type of practice: Project

Description of best practice: Saskatchewan receives requests from industry for provincial investment on new roads on Crown Lands which lead to resource rich areas in the north. The province evaluates public and private interests in industry access roads and determines the level of provincial investment, if any. Commercial interests are responsible for the capital cost of building the road to their operation and for the cost of maintaining the roadway over their operating duration, unless a public good or provincial interest exists. Public interest in the road investment includes public access to the area and can include other factors like, establishing a complete northern road loop or an alternate route to reach that part of the province. Cost sharing is based upon the level of public good or provincial interest. An agreement is signed between the Province and industry. Industry access roads constructed must meet provincial standards for public use. Ownership remains with the Province regardless of Provincial investment.

Why the best practice was used: Limited provincial budget and difficulty justifying full provincial funding for roads with low traffic required use of a Provincial Interest Model to allocate the costs and benefits among public and private interests. The model enabled fair allocation of financial responsibility among the parties.

Benefits of the best practice: Use of the Provincial Interest Model establishes an appropriate level of provincial investment and facilitates industry resource development. Communities and the general public have use of the road and social and economic goals can be combined and balanced. The extent of provincial investment is based upon the greatest public good/benefit. This is perceived as publicly responsible and fair for all parties.

Resources/References: The Provincial Interest Model is rooted in "Welfare Economics" literature and theory.

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Saskatchewan – Rural Municipal Road Primary Weight Corridor (Clearing the Path Corridor Program)

Type of Practice: Project

Description of best practice: Saskatchewan has managed its road infrastructure with primary and secondary weight limits according to a roadway's structural capacity. Depending on truck configurations, typically the gross vehicle weight allowed for primary weight is approximately 15-20 per cent higher than for secondary weight and the payload increase for primary weight is about 24-50 per cent. Many Saskatchewan rural areas are only served by secondary weight roads, which are viewed as a competitive disadvantage. Industries and agriculture road users have an interest in the most efficient, cost effective transportation routes. They want to access more remote areas at primary weight beyond existing primary weight highway network. It is impossible to upgrade all highways to primary weight standard due to financial constraints. Ministry of Highways and Infrastructure (MHI) worked with Saskatchewan Association of Rural Municipalities (SARM) developed a network of primary weight corridors using existing rural municipal roads. MHI allocates annual funding to SARM to co-manage the corridor program (called Clearing the Path, (CTP) which allows trucks to haul primary weights on specific municipal gravel road corridors from one primary weight provincial highway to the next. Isolated areas may be approved for a CTP corridor if the route serves facilities that have high level of economic activities. These corridors provide efficiencies to the shippers in less distance traveled, less fuel consumed and more direct routes to the facility or community. SARM and MHI coordinates CTP corridor network establishment following jointly agreed criteria. Individual municipalities join the initiative voluntarily. Provincial funding to the program includes capital and operation and maintenance (O&M) components to individual rural municipalities. Individual municipalities can apply for capital funding for road upgrading project on the CTP corridors, SARM and MHI will prioritize the applications using established objective criteria. A uniform per km O&M grant is provided to all municipalities having the CTP corridors, which consists of more than 60,000 km municipal roads.

Why the best practice was used: to provide primary weight access/reduced transportation costs for shippers in the rural area in a cost effective manner to support industries and agriculture road users through provincial and municipal government collaboration.

Benefits of the best practice: The CTP corridors enable provincial primary weight road network expanded significantly, and almost all the expansions are in rural area. This has allowed resource and agricultural sectors in rural area to access primary weight and thus reduce their transportation costs. As well, some CTP corridors also act as alternate truck routes to allow the preservation of some adjacent thin surfaced highway. The province just spends a fraction of the cost that would have been needed to expand the same sized provincial primary weight highways.

Resources/References: CTP corridor map on MHI website

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Yukon Profile

Remoteness, small population base, limited infrastructure, high costs of energy and construction, a short construction season, permafrost, harsh terrain and even harsher weather are some of the most significant barriers to business and economic progress in the Yukon.

Fortunately, all Yukon communities except for one (Old Crow) are connected by an all season road network which facilitates labour mobility and access to resources, goods, services and important markets. The Yukon Department of Highways and Public Works has 2 ferry crossings that change to ice roads in the winter, plus almost 5,000 km of paved, BST and gravel roads. Thanks to the generosity of the United States Congress, approximately \$400 million US dollars have been spent since 1977 on upgrading the Haines Road and Alaska Highway, including



The Dempster Highway in the Yukon—the only year-round highway in Canada that crosses the Arctic Circle!

portions in the Yukon that links the Alaska Panhandle with mainland Alaska. At the same time, Canada has spent over \$1.2 billion Canadian dollars on upgrading their sections of the Alaska Highway. This road network facilitates business opportunities and the overall quality of life of Yukoners, but there are still plenty of remote places for tourists and Yukoners to escape to.

The department also has four certified airports and twenty-five aerodromes, making it the largest airport/aerodrome operator in Canada. Three out of the four airports have scheduled service, making them eligible for Transport Canada's Airports Capital Assistance Program (ACAP). Unfortunately, the airport with the largest amount of deteriorating infrastructure and aging equipment – the Watson Lake Airport – is not eligible for ACAP funding because chartered crew change flights have replaced the scheduled service of the past.

Even though the Yukon has no year-round port access, the ports of Stewart in British Columbia, Haines and Skagway in Alaska are vital ocean links for the territory. Yukon Zinc shipments go to oversees smelters through Stewart. Haines is used to import fuel into the territory and to connect the State capital of Juneau with mainland Alaska, while Skagway is the port for shipping minerals out of the territory and bringing 1,000's of tourists to the Yukon each summer. The governments of Yukon and Alaska have recently issued a joint Request for Proposals to have a contractor to assess the feasibility of developing electrical and telecommunication connections between Yukon and southeast Alaska.

There are fourteen communities in the Yukon, with Old Crow being the only fly-in community. For the first time in a decade, the Vuntut Gwitchin First Nation have constructed a 260 km winter road to the community to bring in equipment and materials too bulky and heavy to fly in. All the other Yukon

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communities have year-round road access, with all of them being served by a community aerodrome or airport.

Yukon had three operating mines at the beginning of 2013: Capstone Resources Minto copper-gold mine, Yukon Zinc's polymetallic Wolverine mine and Alexco Resources Bellekeno silver mine. Only Minto continues to operate at full production. Wolverine is only working one shift and Bellekeno has stopped temporarily mining from the fall of 2013 until early 2014. Exploration is ongoing with a number of projects in development or in the permitting phase.

Industries, businesses, emergency services, tourism and government activities all depend upon year-round roads and airports/aerodromes for access and supply of goods and services in the Land of the Midnight Sun.

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Yukon - Rural Roads Maintenance Program (RRMP)

Type of Practice: Program

Description of best practice: The RRMP is designed to provide a mechanism for stakeholders to have maintenance improved on non-industrial roads. Under this program, Yukoners are able to request maintenance of public rural roads - not currently maintained - that meet the criteria set in the policy.

The overall goal of the RRMP is to provide maintenance, when monies have been appropriated, to public rural roads in a fair, equitable and cost effective manner.

The objectives of the RRMP are:

- To provide rural road maintenance, where feasible, as one of the basic services covered by property taxes;
- To ensure that maintenance of any one rural road is not subsidized to the extent that it is unfair to other property owners throughout Yukon; and
- > To provide a road maintenance service where appropriate and feasible under a Third Party Equipment Rental Agreement for rural property owners otherwise not eligible for fully funded government maintenance service.



The program is related to the Department of Education's Protocol for Review and Approval of Changes to School Bus Routes. If a parent or group of parents request a change to a school bus route for some reason, and the road proposed to become part of the bus route does not meet the Department of Education standards, the parent or group of parents can apply to the RRMP to have the road maintained. They can even apply to the RRMP to have the road upgraded.

Why the best practice was used: The RRMP was developed to address the fact that over the years, Yukoners have acquired residential, recreational and commercial properties throughout rural Yukon. In many cases, rural property owners have requested or even demanded government maintained access as one of the services related to property taxes.

Given the high cost of road construction, development and maintenance in both summer and winter, the Yukon government was often faced with the difficult decision of when to provide maintenance in light of variable traffic densities, different road lengths, unique residential requirements, etc. Decisions to increase rural road maintenance were often made arbitrarily.

In the end, the Yukon government developed the RRMP to systematically and fairly address requests for increased road maintenance.

Benefits of the best practice: Yukoners now have a relatively transparent, fair and systematic process for having their requests reviewed, accepted and funded for additional maintenance on public roads.

Resources/References: More information on the RRMP and the application form are at: http://www.hpw.gov.yk.ca/trans/maintenance/793.html

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Yukon Territory – Resource Access Roads Framework

Type of Practice: Policy

Description of best practice: The Yukon government provides financial and material support to industry to develop resource access roads in Yukon. The primary focus of this program is to assist resource-based companies to upgrade existing roads. Under certain conditions, assistance may be available for the development of new roads, airstrips and docks. The program has been designed to enable resource exploration and extraction activities to unfold, which is critical to the resource sector and the broader territorial economy.

The program is meant to upgrade industrial/secondary roads in the Yukon, whether currently maintained by Yukon Government or not. We will be upgrading industrial secondary roads based on requests and input from resource developers and industry. Program accomplishes work with local Contractors whenever possible, economical and reasonable to do so. It will also evaluate projects on the basis of sound economic



principles to ensure maximum benefits accrue to Yukon. Resource access roads will involve the Local Economic Impact Model administered by Yukon Economic Development.

The program is also meant to serves the needs of resource developers and presents opportunities for economic development. The mining industry is currently investing extensively in exploration and in some cases has moved into the development phases with feasibility studies and construction. Road access during this period is important to future development. Requests from industry for snow removal or minor maintenance may not be significant but it may be critical to their operations since the drilling or construction seasons can be relatively

short. If access is delayed projects may slip by an entire year which could result in increased costs which may affect decisions to move forward with the project. Government must be sensitive to industry needs and be prepared to respond quickly.

The leads on the program are our Policy Branch and Transportation Maintenance Branch. The program supports various road upgrade work and culvert and bridge work through a \$500,000 program each year, in place until at least 2018/19 Fiscal Year. Various government work together to facilitate access for the resource industry:

- Highways and Public Works provides assistance through planning, contracting and road upgrading work;
- Energy, Mines and Resources liaises with industry and government in seeing projects through to their completion; and
- Economic Development undertakes economic impact assessments to ensure that projects provide a net economic benefit to the Yukon.

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Why the best practice was used: Yukon is abundant in natural resources such as minerals, oil and gas, and forestry products. Through history, many resource access roads have been developed. Some are maintained seasonally while others aren't maintained at all.

When exploration or development activities are ramped up, year-round access becomes essential to the viability of any resource-based project. This program was developed to facilitate the development of transportation corridors for the resource industry.

Benefits of the best practice: There is an open process for any resource industry to apply for funding to help with resource access issues.

Resources/References: More information is at: http://www.hpw.gov.yk.ca/trans/maintenance/787.html

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APPENDIX B: TASK FORCE MEMBERS

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