

Transportation in Northern Canada: An Action Plan

**Paul D. Larson, Ph.D.
Director, Transport Institute**

**Matt Seguire
Research Associate,
Transport Institute**

**Asper School of Business
University of Manitoba
614 Drake Centre
Winnipeg, MB
R3T 5V4**

**phone: 204-474-6054
e-mail: larson@cc.umanitoba.ca**

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This paper is presented in three sections. The first section outlines general issues and important stakeholders involved in transportation. The second section summarizes two sessions—“Northern Vision, Priorities and Expectations” and “Current Northern Transportation Infrastructure” from the November 2005 Northern Transportation conference in Yellowknife. Then, the third section suggests an action plan for the future, in light of presentation sessions and roundtable discussions at the conference.

Issues and Stakeholders

“transportation is the public-policy, lifestyle and business issue of the decade” (Joe Chidley in *Canadian Business* magazine, March 17, 2003).

Sussman (2000) discusses the economic, environmental, political and social importance of transportation. Transportation, as an industry, employs a large number of people, as providers of service, builders of infrastructure, producers of vehicles and equipment, policy makers and regulators, etc. The transportation industry also requires large investments of capital over long-term time horizons, especially for the construction of infrastructure.

Primary stakeholders in transportation decisions and public policy include the *financial community*, as providers of capital for infrastructure projects; *suppliers* of infrastructure construction services and materials, vehicle and equipment, fuel, etc. to the industry; and *customers*, i.e. shippers and receivers of freight, and passengers. Another important group of stakeholders are the *communities* that transportation vehicles and/or infrastructure pass through or over or near. People in these communities may or may not be “customers.”

Additional transportation stakeholders are *governments* at all levels (national, provincial/territorial, and local), intra- and inter-modal competitors, labour unions, environmental groups, and *academic institutions*. While academic institutions study transportation systems and train supply chain leaders of the future; government agencies set

public policy directions, enforce regulations, assess transportation needs, and monitor the transportation system.

Harper (1982) suggests that the two most important governmental activities in transportation are promotion and economic regulation. Promotion is any kind of financial or other assistance provided to a transportation carrier or mode. Governments promote transportation due to its economic and social importance, its large capital requirements for infrastructure, and its role in both national sovereignty and economic development.

In his holistic transportation planning framework, Poorman (2005) recognizes social, environmental, economic and political influences of transportation. According to Poorman (2005, p. 30): “A holistic or integrated transportation planning process embraces the knowledge that transportation facilities and services have a profound effect on community structure and regional form, quality of life and expression, environmental sustainability, public health and economic productivity and competitiveness.”

The dominant transportation mode (air, water, road or rail) is a prime determinant of location and shape of communities. Transportation infrastructure and services also have a profound impact on quality of life and personal expression. Transportation delivers supplies and brings opportunities to the people. It also brings noise, congestion and pollution. Transportation can be hard on the environment, by polluting land, air and water; by depleting non-renewable resources. However, access to competitive transportation alternatives supports economic growth, and provides movement of goods and people at reasonable cost.

Poorman’s (2005, p. 30) first characteristic of a holistic transportation planning process is the “inclusion of a wide range of participants and perspectives.” With a spirit of inclusion, a diverse group of transportation stakeholders assembled during November 2005 for the Northern Transportation Conference.

The Conference

The Northern Transportation Conference took place November 8 to 10, 2005 at the Explorer Hotel in Yellowknife, Northwest Territories. It was organized by the University of Manitoba Transport Institute, the Van Horne Institute, and the Western Transportation Advisory Council.

The Conference featured 35 session chairs, panelists and speakers, organized into nine sessions, sequenced as follows: (1) northern vision, priorities and expectations; (2) transportation partnerships; (3) current northern transportation infrastructure; (4) air transportation challenges; (5) surface and marine transportation challenges; (6) pipeline development; (7) climate change; and (8) northern sovereignty and security.

Session nine consisted of nine roundtable discussions on the issues. Summaries of the roundtable discussions, as created by small groups of participants, are included as Appendix I.

Northern Vision, Priorities and Expectations

The Honourable Joe Handley, Premier of the Northwest Territories, spoke first in this session, followed by the Honourable Ethel Blondin-Andrew, Canadian Minister of State for Northern Development.

Premier Handley recognized the close connection between the Northwest Territories and Alberta, in light of Alberta's role and position in the "opening of the North." The North—i.e. Yukon, Northwest Territories and Nunavut—provides 40 percent of Canada's land mass, two-thirds of Canada's coast line, and 14 percent of Canada's border with the USA. It is a treasure-chest of renewable and non-renewable resources. The Premier predicted that two new pipelines are coming to the North: the Mackenzie valley natural gas pipeline (<http://www.mackenziegasproject.com/>) and the Alaska North Slope pipeline.

Next, Premier Handley outlined the issues and challenges in northern transportation. Additional transportation infrastructure is needed to support economic development in the Northwest Territories, and to facilitate territorial self-reliance. There is a lack of effective multi-modal transportation service. Due to the sensitive ecology of the north, transportation initiatives must consider environmental issues carefully, with a plan to protect the land (<http://www.mvapg.com/>). These initiatives must also consider social issues and employment opportunities for northerners.

The Premier addressed the Federal/Territorial government partnership in northern economic development. There is a need for negotiation of fair resource and revenue sharing between Canada and the Northwest Territories—and a move away from the current arrangement in which the Canadian government controls 100 percent of royalties. Premier Handley argued that per capita funding is not advisable for the North. (Only about 40,000 people live in the vast Northwest Territories.)

Other Northern transportation issues touched on by the Premier include globalization, Canadian security and sovereignty, climate change, response to possible environmental disasters, economic diversification, mobility of the people, and the high cost of living. Finally, Premier Handley expressed the need to revive plans for an all-weather road linking the Arctic port of Tuktoyaktuk with the territory's existing road system more than 800 km to the south. This road would replace the existing "winter roads," constructed on ice-covered rivers and frozen ground to enable freight transportation by truck. Global warming and climate change are threatening the winter road system.

The Honourable Ethel Blondin-Andrew acknowledged the critical role of transportation in economic and community development, stating: "everything depends on transportation."

During her discussion of the issues, the Minister referred to "The Northern Strategy" (<http://www.northernstrategy.ca/>). Goals of the Northern Strategy focus on economic development, environmental

protection, cost-of-living and quality-of-life in northern communities, national security and sovereignty, and preserving/promoting language and culture of the North.

Many of the northern communities are remote, and most depend on air transportation. Today, The North is a place of great change, from self-government and land claim settlements to rapid industrial growth in the diamond mining and oil and gas extraction sectors. Minister Blondin-Andrew mentioned some challenges and opportunities with respect to climate change in the North. While the thawing ground shortens the season for freight transportation on winter roads, it may make permanent solutions more feasible. Opening of the Northwest Passage lengthens the Arctic Ocean shipping season but gives rise to concerns over Canadian sovereignty.

Current Northern Transportation Infrastructure

Andrew Gamble, Project Leader for the Deh Cho Bridge Corporation, chaired this session. The session featured three speakers, one from each of the northern territories.

“Nunavut Transportation Infrastructure” was presented by Alex Campbell, Nunavut’s Deputy Minister of Economic Development and Transportation. While Nunavut endures the highest cost of living in Canada, it still has no land links with the rest of Canada. Improvements in overland (surface) transportation would increase access to both communities and resources, enhancing the quality of life. The people of Nunavut have always used the waters for food and marine transportation and the air transportation system serves all 26 Nunavut communities.

Nunavut’s primary needs are for improved community accessibility and reduced cost of living. Effective and efficient transportation services are critical to meeting both of these needs. Some specific surface transportation improvement projects under consideration include the Manitoba-Nunavut road, the Bathurst Inlet road, and the Community Access Road Program. The important marine transport-

ation projects are the Iqaluit Deep Port, the Bathurst Inlet Port, and the Community Breakwaters and/or Small Crafts Harbours Program. Finally, aviation projects include improvements or relocations at the following airports: Iqaluit, Arctic Bay, Pangnirtung, Cambridge Bay, Kimmirut and Repulse Bay.

Next, John Stecyk, Deputy Minister of Highways and Public Works, Government of Yukon, spoke on the “Yukon Transportation System.” His presentation covered current infrastructure, the changing context, investment priorities, and considerations for the future.

Alaskan ports are important, strategic links to Yukon’s transportation system, especially for the mining and tourism industries. The Yukon maintains more than 140 kilometers of road per 1,000 residents—the highest per capita road network in Canada. More than 535,000 tons of freight per year is carried on Yukon’s highways. The territory operates 29 airport facilities, serving nearly 200,000 passengers per year. It also has a rail line that carries over 400,000 passengers per year. The Deputy Minister reported that Yukon has been investing in a number of bridge rehabilitation and highway construction projects to improve its transportation system.

Mr. Stecyk discussed five factors in the changing transportation context. The first factor, global economic growth, implies potential opportunities for Yukon as a trade route. The ports along the West coast are at full capacity, and demand for steel, grain and timber is growing. Climate change is the second factor. As the Northwest Passage becomes an alternative shipping route, Yukon must be ready to respond to possible increases in shipping traffic. The third factor, e-business technology, is making Northern locations more valuable. Whitehorse could become an attractive hub for international flights. Northern economic development is the fourth factor. The mining and tourism industries require transportation infrastructure to flourish, and make Northern economies self-sustaining. The fifth and final factor, sovereignty and security, implies that there is need for transportation infrastructure to support strategic assertion of sovereignty.

The third speaker in the session was Mr. Russell Neudorf, Deputy Minister of Transportation for the Northwest Territories. There are 2,200 kilometers of all-weather road and 1,450 kilometers of winter road in the Northwest Territories but only 16 out of 33 communities have all-weather road access. In addition, there are 27 public airports in the Northwest Territories, with Yellowknife serving as the gateway hub to the south. Marine and rail service is primarily used to re-supply communities and to serve the oil and gas industry.

Mr. Neudorf outlined six transportation challenges for the Northwest Territories: (1) growing pressures of resource development; (2) aging infrastructure; (3) fiscal and human resource limitations; (4) rising public expectations; (5) regulatory burdens; and (6) a fragile natural environment. These challenges give rise to many opportunities to improve infrastructure, such as the Deh Cho Bridge, the Mackenzie Valley All-Weather Road, and other improvements to airports and roads.

Northern Transportation Moving Forward: An Action Plan

This final section is an action plan to keep northern transportation moving forward. This plan draws on Northern Transportation Conference roundtable discussion summaries (see Appendix I) and survey results, along with session presentations and discussions. It also reflects input from other stakeholders not in attendance at the conference.

The Northern Transportation Action Plan adopts a holistic approach to transportation planning. According to Poorman (2005, p. 32), a holistic approach is driven by three core activities: “(1) sharing and listening in many settings; (2) seeking to understand broadly held community values and reflect them in planning activities; and (3) applying transportation planning and implementation resources cost-effectively.” The following paragraphs list and then briefly discuss components of the action plan.

1. Identify and engage all relevant stakeholders in determining northern transportation needs. These stakeholders include First Nations or Aboriginal communities in the North; all people living and working in the North; users of transportation services, e.g. business firms, passengers, government agencies; providers of transportation services across all modes; transportation policy makers and regulators; financial institutions; engineering firms; diamond mines; oil and gas companies; environmental interest groups; etc. The Conference was successful in initiating engagement of many relevant stakeholders. Several good ideas on continuing the engagement emerged during conference roundtable discussions, including: developing a process for sharing information, creating a clearinghouse for research and other intelligence, and holding a similar conference in 2007, perhaps in Iqaluit.

2. Determine and prioritize the issues of concern and expectations of the stakeholders. Participants at the November 2005 Conference discussed a variety of issues and stakeholder expectations. Though inter-related, these issues can generally be placed into one of the following categories: economic, political, social, environmental, regulatory, and security/sovereignty. For instance, the economic issues range from cost-of-living and employment opportunities in northern communities to development and growth in the mining and oil and gas industries. There are trade-offs between economic objectives and environmental objectives. Climate change is altering the economics and seasonality of road and water transportation in the North. Action is needed to determine the entire range of issues, assess the expectations of stakeholders on these issues, understand inter-relationships and trade-offs between the issues, and prioritize appropriate responses. It was noted during conference discussion that there are different priorities across (and within) the three northern territories.

3. Resolve any political issues that constrain forward movement. Certain political issues must be resolved for northern transportation to move forward. Outstanding land claims should be settled with the federal government as soon as possible, to facilitate the fast-tracking

of large-scale infrastructure projects that cut across vast stretches of land. In addition, the federal government is called on to negotiate a new resource revenue sharing formula with the northern territories. The status of the territories, i.e. their progression toward (autonomous) provincial status, is a related issue in devolution.

4. Harmonize transportation regulations across territorial and provincial jurisdictions. In general, regulation constrains service options and reduces efficiency. If regulations; e.g. vehicle length limits, weight restrictions, hours of operation, registration of vehicles and operators; vary across jurisdictions, service providers often adopt the most restrictive/least efficient equipment and operating processes. It is expensive to maintain (and underutilize) equipment dedicated to each jurisdiction. Remaining regulation should be harmonized across jurisdictions to the greatest extent possible.

5. Evaluate large-scale infrastructure projects using an integrated, holistic framework. This means including all issues of concern (economic, political, social, environmental, regulatory, and security/sovereignty) in the minds of all stakeholders (communities, industry, government agencies, transportation service providers, etc.) during project evaluation. Proposals should also completely identify the financial, labour and material requirements and implications of the project. Where will the money and the workers come from?

6. Develop a training and education program in transportation/logistics and supply chain management (SCM) for the North. This is a critical element in economic development of the North, as well as the creation, maintenance and utilization of northern transportation networks. Given the remoteness of many northern communities, the training program must be available in both traditional (classroom) and distance (on-line) delivery modes. This type of training program could likely be designed and delivered by a consortium of Canadian academic institutions.

7. Conduct research on northern transportation issues. Additional research is needed to complement and extend existing research on

northern transportation challenges and requirements. One area in need of further research is the cost-of-living in northern communities, along with the role of transportation infrastructure and services in reducing cost-of-living in these communities. More research is also needed to compare costs and benefits of various transportation (mode) alternatives in the North. Finally, there is an opportunity to monitor performance of the transportation system and link this performance to northern economic, social and environmental objectives.

8. *Seek and create partnerships within the territories and with neighboring provinces and other entities.* Many cross-jurisdictional partnerships, focused on northern transportation, have been developed. One example is the close, long-standing relationship between Alberta and the Northwest Territories. Additional examples include the close connection between Manitoba and Nunavut, and the link between Yukon and Alaska. Many of the large infrastructure projects in the northern area are moving forward and being managed by partnerships between communities, government and industry. In similar fashion, research and training initiatives could get off the ground more quickly and more effectively through partnerships between industry groups, academic institutions and government agencies.

References

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Appendix I – Summaries of the Roundtable Discussions

Group A

1. What are expectations of northerners?
self-reliance; reduce isolation; sense of social community
2. Strategic vision—frontier (not just solving short term problems)
3. Engagement of stakeholders
 - A. understanding of southerners
 - B. governments should not develop plans in isolation
4. Strengthen transport infrastructure and responsiveness of governmental transport based agencies to changing northern needs.
5. View transportation system as an integrated multi-modal whole.

Group B

1. Establish an authority to develop action plan
pull together research; tap into relevant networks; deal with environmental, economic, social (issues)
2. Develop master action plan—vision for North
master plan develops guide (priorities, goals, players)
3. Technology—open mind focus on infrastructure and vehicles
4. Governance—resource revenue
5. Seek out government and industry partnership.

Group C

1. Identify individual priorities of the three territories.
2. Identify northern sovereignty and security issues.
3. Develop sustainable infrastructure.
4. Make social/environmental assessments.
5. Review resource revenue sharing formula to retain greater share

Group D

1. Determine changing transport demand: community re-supply;
resource development
2. Identify changing technology to meet demand: roads—winter, all-
weather; marine—river, ocean; air
3. Funding

Group E

1. Develop a coordinated, comprehensive northern transport strategy.
2. Identify & prioritize infrastructure requirements.
3. Increase awareness of importance of transportation in the north.
4. Be innovative in financing infrastructure.
5. Develop process for sharing ideas and practices.

Group F

1. Sustainable funding that recognizes needs of North
vast distances; climate change; limited infrastructure;
small markets; high cost of living
2. Improved infrastructure—existing and new
connect communities better; support economic
diversification and development; support sovereignty
3. Devolution—transfer of federal control/power to territorial/
aboriginal governments
4. Education/training in transport related fields
5. Streamline regulatory burden—minimize regulatory requirements
and tailor those requirements to northern needs

Group G (Is there a unified northern strategy?)

1. Define governance (devolution, etc.) and partnerships
2. Consultation/prioritization of projects based on
community/territorial needs—road, rail, air and marine
3. Funding (devolution—territorial vs. federal)
4. Human capacity/capability: training
need for projects; political/economics; socio-economic
5. Balance regulatory requirements with political/business needs

Group H

1. Air transportation
 - A. standards for all airports
 - B. construction/renovate/relocate
 - C. sovereignty/security
2. Marine infrastructure
 - A. port facilities; all communities
 - B. standards
 - C. sovereignty/security
3. Access roads to Nunavut
 - A. central arctic—Manitoba/Nunavut
 - B. western arctic—Bathurst Inlet
4. Human resources: training; attracting and retention
5. Inter-community roads: resource roads; community connections

Group I

1. Streamline regulatory process for new resource development and settle land claims.
2. Better access to training and education within northern communities.
3. Encourage commitment to longer-term contracts that stimulate private sector to improve capabilities.