6th ANNUAL
SUPPLY CHAIN CONNECTIONS CONFERENCE

September 29 & 30, 2010

CONFERNC E SPONSORS:
Canadian North Airlines
Hudson Bay Railway
Manitoba Hydro
Northern Resource Trucking
Port of Churchill
Winnipeg Airports Authority

Northern Exposure
Presented by:
Transport Institute
### 6th Annual Supply Chain Connections Conference: Northern Exposure

**September 29, 2010**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 – 8:30 a.m.</td>
<td>Networking Breakfast &amp; Registration</td>
</tr>
<tr>
<td>8:30 – 9:00 a.m.</td>
<td>Opening – Dr. Barry Prentice, Professor of SCM, Univ. of Manitoba, <em>Transport Challenges &amp; Opportunities in the North</em></td>
</tr>
<tr>
<td>9:00 – 10:20 a.m.</td>
<td><strong>Northern Sky Ways and Highways</strong></td>
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<tr>
<td></td>
<td>Chris Ferris, Vice President, Marketing &amp; Sales, First Air</td>
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<tr>
<td></td>
<td>Kyle Harris, Director of Operations, R.S. Harris Transport</td>
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<td></td>
<td>Dave McIlmoyl, Vice-President, Northern Resource Trucking</td>
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<tr>
<td>10:20 – 10:40 a.m.</td>
<td>Break</td>
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<tr>
<td>10:40 – 12:00 p.m.</td>
<td><strong>To Nunavut via Churchill I: Road and Rail</strong></td>
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<tr>
<td></td>
<td>Dennis Engel, Vice President Gardewine West, Gardewine North</td>
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<tr>
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<td>Tanya Pidskalny, Director – Business Development, OmniTRAX Canada (Hudson Bay Railway)</td>
</tr>
<tr>
<td>12:00 – 1:50 p.m.</td>
<td>Luncheon – Hon. Steve Ashton, Minister of Infrastructure and Transportation, Manitoba</td>
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<td>Peter Wallis, President and CEO, Van Horne Institute</td>
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<tr>
<td>1:50 – 3:10 p.m.</td>
<td><strong>To Nunavut via Churchill II: Port and Water</strong></td>
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<tr>
<td></td>
<td>Pat Avery, Vice President – Energy and Commodities, OmniTRAX (Port of Churchill)</td>
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<td></td>
<td>Paul D. Larson, CN Professor of SCM, Director, Transport Institute, University of Manitoba</td>
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<tr>
<td>3:10 – 3:30 p.m.</td>
<td>Break</td>
</tr>
<tr>
<td>3:30 – 4:50 p.m.</td>
<td><strong>Food Mail Program/Northern Nutrition</strong></td>
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<td></td>
<td>Jamie Tibbetts, Director General, Devolution and Territorial Relations, Indian and Northern Affairs Canada</td>
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<td></td>
<td>Duane Wilson, Division Manager, Merchandising, Arctic Co-operatives Limited</td>
</tr>
<tr>
<td>5:30 – 8:30 p.m.</td>
<td>Banquet – Tracy Medve, President, Canadian North</td>
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<tr>
<td>Time</td>
<td>Event</td>
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<tr>
<td>8:30 – 9:00 a.m.</td>
<td>Networking Breakfast</td>
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<tr>
<td>9:00 – 10:20 a.m.</td>
<td>Resources &amp; Facilities Sector</td>
</tr>
<tr>
<td></td>
<td>Alberto Velasco, Executive Director</td>
</tr>
<tr>
<td></td>
<td>International Business Development, CentrePort Canada Inc.</td>
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<td></td>
<td>Brian Ketcheson, Corporate Services</td>
</tr>
<tr>
<td></td>
<td>Division Manager, Manitoba Hydro</td>
</tr>
<tr>
<td>10:20 – 10:40 a.m.</td>
<td>Break</td>
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<tr>
<td>10:40 – 12:00 p.m.</td>
<td>Public Sector Perspectives</td>
</tr>
<tr>
<td></td>
<td>John Hickes, Mayor, Rankin Inlet, Nunavut</td>
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<td></td>
<td>Michael Spence, Mayor, Churchill, Manitoba</td>
</tr>
<tr>
<td></td>
<td>LCdr. Tim Clark, Deputy Chief of Staff,</td>
</tr>
<tr>
<td></td>
<td>Support Joint Task Force North (Yellowknife), DND</td>
</tr>
<tr>
<td>12:00 – 1:20 p.m.</td>
<td>Luncheon - Stephen Van Dine, Associate</td>
</tr>
<tr>
<td></td>
<td>Vice-President, Canadian Northern Economic</td>
</tr>
<tr>
<td></td>
<td>Development Agency (CanNor)</td>
</tr>
</tbody>
</table>

**Logos**

- Winnipeg Airports Authority
- Manitoba Hydro
- Canadian North
- NRT Northern Resource Trucking
- Hudson Bay Railway
- Port of Churchill
Transport Challenges & Opportunities in the North

Supply Chain Connections 2010
Northern Exposure

Dr. Barry E. Prentice, Professor
Dept. Supply Chain Management
University of Manitoba
Western Arctic

Beaufort Sea

MacKenzie River

Izok Lake

Bathurst Inlet

Yellowknife

Hudson Bay

Churchill

Bakers Lake

Iqaluit

Remote Community Service Area

Approximate northern limit of connecting all-weather roads and rail lines

Vancouver

Winnipeg

Montreal

Newfoundland & Labrador

Prince Edward Island

Nova Scotia

New Brunswick

Ontario

Quebec

Manitoba

Saskatchewan

Alberta

British Columbia

Yukon Territory

Northwest Territories

Remote Community Service Area
# Transportation in Northern Canada

## Challenges
- Infrastructure Gaps
  - Vast Distances
  - Seasonal Service
- High Freight Rates
  - Thin Markets
  - Few Backhauls
- Harsh Conditions
  - Climate Change
  - Permafrost

## Current Solutions
- Ships
- Barges
- Trucks
- Airplanes
- Helicopters

## Potential Solution
- Airships
Transportation Options in Northern Canada
Marine Alternative: Ships and Barges

Lowest freight cost, but

- few deliveries per year
- damage to goods in transit
- lack of harbours/transshipping
- navigation risks
Overland Alternative: Ice Roads

Ice Road Network
• dangerous to use
• must be rebuilt every year ~ $5,000 per km
• unreliable service length

Good for heavy loads, but:
• 100% more expensive than “southern” trucking
• unreliable supply season
• high inventory costs
Climate Change and Ice Roads

Global Temperature

Temperature Anomaly (°C)

Year

-4 -2 0 2 4

1880 1900 1920 1940 1960 1980 2000

Annual Mean
5-year Mean

Winter Roads east of Lake Manitoba

Days Open

Year


10 20 30 40 50 60

University of Manitoba
Ice Road Trucker
Air Transport Alternatives
## Aircraft Cost Comparison for a 300 km Flight

<table>
<thead>
<tr>
<th>Aircraft Type</th>
<th>Cargo (kg)</th>
<th>Cost ($/km)</th>
<th>Cost ($/kg)</th>
<th>Airstrip (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twin Otter</td>
<td>955</td>
<td>$6.50</td>
<td>$4.09</td>
<td>310</td>
</tr>
<tr>
<td>DC3</td>
<td>2500</td>
<td>$10.60</td>
<td>$2.46</td>
<td>925</td>
</tr>
<tr>
<td>Curtis C-46</td>
<td>6800</td>
<td>$17.95</td>
<td>$1.58</td>
<td>1075</td>
</tr>
<tr>
<td>DHC Buffalo</td>
<td>7500</td>
<td>$17.00</td>
<td>$1.37</td>
<td>925</td>
</tr>
<tr>
<td>Hercules</td>
<td>20000</td>
<td>$28.50</td>
<td>$0.86</td>
<td>1700</td>
</tr>
</tbody>
</table>
All-weather Road Alternative

The Manitoba ice roads would stretch from Winnipeg to Vancouver ~ 2000 km

Cost of building an all-weather gravel road network: $2+ billion.

25,000 to 30,000 people live in these 28 communities.

The neighbouring region of Northwestern Ontario has similar communities and ~ 3000 km of ice roads
Manitoba East Side Road Project

• Distance ~ To Be Announced
• Projected cost ~ $1.125 billion
• Time for construction ~ 15 years
• Annual expenditure ~ $75 million
• Connectivity ~ 13 communities linked

### Freight Rates, Food Prices and Poverty

**Winter 2005** | **St. Theresa Point** | **Winnipeg**
--- | --- | ---
- Milk 4 Litres | $12.19 | $3.48
- Tomatoes | $3.80 lb | $1.99 lb
- Bananas | $2.31 lb | $0.59 lb
- Apples, Macintosh | $2.94 lb | $1.29 lb
- Head Lettuce | $2.69 each | $1.49 each
- Bread 60% | $2.49 each | $0.99 each
- Ground Beef | $9.19 Kilo | $4.29 Kilo
- Red Potatoes | $1.60 lb | $0.79 lb
- Cheerios | $8.45 box | $3.50 box
- Coke 2 Litres | $7.99 | $2.09
- Coffee | $11.89 Kilo | $6.99 Kilo

---

**Total Basket**

<table>
<thead>
<tr>
<th>St. Theresa Point</th>
<th>Winnipeg</th>
</tr>
</thead>
<tbody>
<tr>
<td>$65.54</td>
<td>$27.49</td>
</tr>
</tbody>
</table>

**Annual Food Mail Subsidy ~ $50 million**
Bad Diet

Bad Housing

Bad Health

Bad Future?
Airship Alternative

Hybrid Airplanes - Airships

High Altitude Airships

Hybrid Helicopter-Airships

Traditional Airships
Key technological advances applied to Airships

• Robustness:
  – Robust, lightweight envelope materials
  – Carbon fibre composites

• Control:
  – Vectoring engines
  – Modern avionics/hydraulics

• Safety:
  – Computer design tools
  – Nonflammable helium gas
  – Satellite weather information

Tcom envelope material
# 2010 Status of Piloted/UAV Airship Developers

<table>
<thead>
<tr>
<th>Location and Company</th>
<th>LTA Vehicles</th>
<th>Hybrid Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lockheed-Martin</td>
<td>design/testing</td>
<td>prototype</td>
</tr>
<tr>
<td>Guardian Flight Systems</td>
<td>prototype</td>
<td></td>
</tr>
<tr>
<td>Worldwide Aeros</td>
<td>certified</td>
<td>design</td>
</tr>
<tr>
<td>Boeing-SkyHook</td>
<td></td>
<td>design</td>
</tr>
<tr>
<td>American Blimp Co.</td>
<td>certified</td>
<td></td>
</tr>
<tr>
<td>SAIC</td>
<td>prototype</td>
<td></td>
</tr>
<tr>
<td>Ohio Airships</td>
<td></td>
<td>prototype</td>
</tr>
<tr>
<td><strong>U.K.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varialift Airships</td>
<td>design/testing</td>
<td></td>
</tr>
<tr>
<td>Hybrid Air Vehicles</td>
<td>certified</td>
<td>model testing</td>
</tr>
<tr>
<td><strong>Germany</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zeppelin</td>
<td>certified</td>
<td></td>
</tr>
<tr>
<td><strong>Russia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RosAeroSystems</td>
<td>certified</td>
<td>design</td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Research</td>
<td>testing</td>
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<tr>
<td><strong>South Korea</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Research</td>
<td>testing</td>
<td></td>
</tr>
<tr>
<td><strong>China</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vantage Airship Co.</td>
<td>certified</td>
<td></td>
</tr>
</tbody>
</table>
Airship Mooring & Handling
Cone accommodates equipment and instrumentation for autonomous and telecommanded operation, water ballast system and hoists.

Load concentration cone accommodates coupling interface with ground anchor for Logger parking.
UAV Airship Log Harvesting Scenario
Cold temperatures are desirable.

_Norge, 1926_

First aircraft to cross the North Pole.
Airships Make Sense for the North

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Airships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight Cost</td>
<td>Medium-low</td>
</tr>
<tr>
<td>Payload</td>
<td>2-300 T</td>
</tr>
<tr>
<td>Seasonality</td>
<td>Year round</td>
</tr>
<tr>
<td>Delivery Speed</td>
<td>8-48 hours</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Minimal</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Minimal</td>
</tr>
<tr>
<td>Flexibility of access</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Combi passenger-freight</td>
<td>Yes</td>
</tr>
<tr>
<td>Environmental Impact</td>
<td>minimal</td>
</tr>
<tr>
<td>GHG Emissions</td>
<td>Low</td>
</tr>
</tbody>
</table>

The North Makes Sense for Airships

- **High margins**
- **Minimal competition**
- **Large potential market**
Summary

• Demand for better northern transport is growing:
  – demand for lower costs of food and housing in the North
  – demand for infrastructure to serve oil/gas and mineral development in the North
• Climate change threatens to destroy exiting infrastructure and end the use of ice roads, but may extend the marine transport season
• All-weather roads are expensive to build and maintain
• Transport airships offer a sustainable and economic solution for year-round service
NORTHERN SKYWAYS

Supply Chain Connections Conference
Winnipeg – September 30, 2010
First Air
First Air
The North

[Map of First Air routes in the North.]

- Jet Routes
- Turboprop Routes
The North

- North of 60
- Nunavut and Northwest Territories
- Markets
- Regional Hub structure
- Infrastructure
- Economic drivers
Northern Markets

- 30 Northern communities, 4 – Road access
- 3 key northern hubs Yellowknife, Rankin Inlet, & Iqaluit
- Wide ranging populations
  - Yellowknife (44% of the NWT pop., 19,711) to Ulukhaktok (pop. 451)
  - Iqaluit (21% of NU pop. 6,832) to Resolute Bay (pop. 250)
  - 12/23 Nunavut communities served are under 1,000 pop.
  - Younger populations e.g. Arviat – 50% population under 18
Yellowknife

“built on gold, nurtured by government and growing with diamonds”
Rankin Inlet

- Gateway to the Kivalliq Region
- Key position connecting Yellowknife, Iqaluit and Winnipeg
Iqaluit

- Capital of Nunavut
- Gateway to the Baffin Region
Iqaluit
Challenges

- Long Thin Routes
  - YWG-YRT 914 miles : YWG-YYZ 936 miles
    - 800,000-10,000
  - YOW-YRB 2,118 miles : YOW-MEX 2,231
    - 1,500,000-450
- Geography –
  - 30,000 people spread over an area roughly equivalent to Halifax to Edmonton, Winnipeg to Dallas
- Unidirectional markets
Challenges

- Limited economy
- Harsh Climate
- Manpower
Airport Infrastructure

- 30 Northern Airports – 6 have paved runways
Opportunities

- Mineral Resources
Opportunities

- Traditional Economy
- Tourism
Opportunities

- Scientific Research
- Sovereignty/Infrastructure
NAKURMIIK - THANK YOU

Supply Chain Connections Conference
Winnipeg – September 30, 2010
Company History

[Images of historical trucks with Harris Ltd. General Trucking sign]
Current Operations

- Highway Truck Transportation
- Canada & US
- Northern Regional Local & Dedicated Fleet
Transportation Services

Equipment Information

- 90 Power Units & 150 Trailers
- Flat decks
- Step decks
- Super B flat decks
- Roll Top & Curtain Side
- Equipment Trailers
- Bulk & Aggregate Trailers
Warehousing Facilities

- 200,000 sq/ft of storage space
- Warehouse Locations in Winnipeg & The Pas, MB
- Heated, cold & ground storage
- Secure Strategic Locations with Truck & Rail accessibility
Transloading & Material Handling

- Multimode Facilities
- 36 Ton overhead Crane
- 3 ton to 15 ton forklifts
- Tool Carrier loaders & specialized lift equipment
- Shunt Locomotives
Rail Services

• Loading and Unloading of Rail Cars
• Piggy Back Transportation to Churchill, MB
• Equipment and material Securement
• Rail to Door delivery
• Rail work equipment Transportation
Challenges of Northern Transportation

• Need for multiple transport modes
• Environmental Constraints
• Cost of Transportation

Challenges Unique to Churchill Corridor

• Maintaining competitive pricing
• Service
Northern Supply Chain
Making it all work together...

Driving

Chipping

Putting it home
Current & Future Northern Opportunities

- Mining
- Hydro Electric
- Growing populations
- Building of infrastructure
Thank you
Merci Beaucoup
Qujannamiik
Northern Resource Trucking
Background

- Northern Resource Trucking is an extremely successful partnership that was formed to service the uranium mining industry in northern Saskatchewan.

- In order to extract uranium in northern Saskatchewan, the mining companies have to deliver benefits, through jobs, training and investment, to northern communities.

- In 1986, the Lac La Ronge Indian Band, through its Business Development arm, Kitsaki Development Corporation wanted jobs and training for its members, and saw an opportunity.

- The original venture proved successful, and it was expanded in 1995 to include more northern partners.
Northern Challenges
Northern Challenges

- NRT has become well known for our ability to haul where other companies fear to travel.

- Our drivers routinely travel in some of the most isolated and difficult conditions, making NRT uniquely qualified to haul in the north.

- We have had to adjust our operation to recognize some of the special circumstances that our drivers can face.
Northern Challenges

- Our most consistent issue is with the highways in northern Saskatchewan.

- They are isolated and narrow, and can be prioritized lower than more heavily traveled southern routes.

- Extreme weather conditions can wreak havoc before Highway crews are even able to respond.
Northern Challenges

- The nature of business will sometimes require that goods get there before the infrastructure is ready.

- Temporary roads or bridges will be in place, but we have to ensure they can be traversed safely.

- In cases like ice road work, NRT has found it useful to maintain and police the roads ourselves for our drivers to ensure that we can determine safety on an ongoing basis.
Northern Challenges

- Isolation for our drivers can pose real dangers. Since there are no alternative routes, when there are problems, a driver often has to decide whether he or she can withstand the wait or drive right through.

- Extreme weather can produce everything from hypothermia to heatstroke, as well as forest fires and flooding.

- Wildlife can be extremely relevant when drivers have no access to restroom or mechanical facilities and have to operate outdoors.
Customers
Customers - Cameco

- NRT’s largest customer, consisting of about 65% of NRT’s business in fiscal 2009.

- Consists of the Key Lake mill, Rabbit Lake mine and mill, Cigar Lake mine and McArthur River mine.

- Cameco has been a supporter of NRT since its inception, and has worked with us on many different projects over the years.

- Cameco is currently doing more expansion and exploration.
Customers - Areva

- Consists of McClean Lake mine and mill and Cluff Lake mine and mill, which has been decommissioned.

- Areva has put its milling operations on hold at McClean Lake for the next 2 years, slowing our hauling for them.

- We anticipate that once their milling operation starts up again, they will be roughly 20% of our hauling operations.
Customers – Claude Resources

- Operates Seabee Gold Mine.

- Ice road hauling from late January to the end of March – depending on ice conditions.

- NRT hauls almost all of their products in that they will need for the year during the very narrow ice road window.

- Once the ice road is gone, they need to fly everything in, making our efficiency in hauling essential.
Customers – Others

- Most of our other hauling is for customers of Cameco or Areva who are doing construction or delivery to the mine site.

- We are well suited to haul products to northern communities such as propane, fuel, and supplies to Wollaston Post, Fond du Lac, Black Lake and Stony Rapids.

- We have some difficulty in expanding too far beyond the mining sector as our equipment is so specialized and heavy.

- Our freight equipment has allowed us to bid on some specialty hauls like over dimensional loads and heavy equipment.
NRT Training School
NRT Training School

- NRT has always provided training to members of our partner communities
- We have traditionally budgeted 1% of our revenue for our training program.
- We have recently expanded our program and developed a separate training school certified by SGI.
NRT Training School

- We do training for Class 1A License, Class 5 License, Forklift Certification and School Bus License.

- Those who complete the 1A course, if they qualify, can then complete the rest of their training with NRT as a Trainee and then as a Junior Driver.

- We have trained over 200 People for their 1A license.
Partnership

Kitsaki Management Limited Partnership
Denesuline Development Corporation
Buffalo Narrows Community Development Corporation
Sakitawak Development Corporation
Montreal Lake Development Corporation
Clearwater Development Corporation
Trimac Transportation
Peter Balanyte Developments
English River Development Corporation
Cumberland House Development Corporation
NRT Operations

Personnel

- 59 Owner Operators
- 17 Company Drivers
- 24 Managers and Office Staff

Equipment

- 82 Tractors (Including Owner Operator)
- 139 Trailers
NRT Success

- In 2009, NRT had a gross revenue of over $36 million.

- Millions of dollars have been paid out to our ownership communities and partners in the form of dividend payments. Even more money has gone to the communities in the form of wages and Owner Operator payments.

- NRT operates at a level of safety that matches or exceeds the best in the industry.
NRT Summary

- For 24 years, NRT has provided service to Saskatchewan’s uranium mining industries.

- We have diversified to include hauling for Seabee gold mine and different northern hauls. We have been available to help out Trimac when we are needed.

- We actively pursue contracts that involve northern hauling, whether with northern communities, mine contractors, or government supplies to the north.
NRT Summary

- Our partnership ensures that we provide a benefit to northern Saskatchewan, both through our ownership and our training of Northern Residents.

- This also benefits our customers as they need to hire and work with northern companies.

- We have survived, not just because we are northern, we are also the best qualified, safest and most cost effective option.
FLIN FLON TROUT FESTIVAL
JUNE 28 - JULY 1
Gold Rush Canoe Derby
Street Fair
Fish Fry’s
Fishing Derby
Stage Shows
Kart Races
Gardewine Group Inc.

- 1350 Employees
- 600 Trucks and Tractors
- 1200 Trailers
Gardewine North

Gardewine connects all Manitoba, Eastern Saskatchewan, North and Northwest Ontario

Our network is our strength

Also... connecting Toronto to North and Northwest Ontario

Gardewine North

Canadian owned and operated

OUR NETWORK IS OUR STRENGTH
Northern Parcel
Northern Cartage
Northern Deck
Northern Logistics
Food and General Merchandise
Thompson Terminal
Delivery Direct to Customer
Interline with Air Carriers
Intermodal (Truck to Air)
Road/Rail Interchange
Thompson Rail Yard
Camp Unit and Excavator
Rock Truck
Vehicles Ready for Loading at the Port of Churchill
Barge Loading Area
Port of Churchill
Tug and Barge on Churchill River
Road & Weather Conditions
Rail Line Schedule Inconsistency
Airport Closures
Unpredictable Winter Roads
Did you know?

• The Hudson Bay Railway was actively proposed in the 1870’s to provide the West with a direct route to Europe. A charter was issued in 1881 but political and financial difficulties prevented immediate construction.

• Between 1910 and 1918, an 850 foot bridge was completed over the Saskatchewan River at The Pas, and 214 miles of track were laid by a crew of several hundred men.

• The issue of a suitable harbour remained in dispute to the last. In 1912, after surveying possible routes both to Port Nelson and Fort Churchill, Port Nelson was selected, not for its harbourage but for its shorter and easier access.

• When the financial burdens of waging the First World War intervened, the railway had reached Kettle Rapids, and only 100 miles lay between the new line and its Port Nelson terminus. Construction was brought to a halt.

• Canadian National Railway then carried trappers’ supplies on the weekly “Muskeg Special” only to the mile 214 (Pikwitonei).

• Immigrant workmen were of signal importance especially during the final phase of the project. A 3,000-member crew formed mostly by Swedes, Russians, Belgians and Finns laid 300 miles of track during 1924-1929. Pick, shovel and wheelbarrow were their main implements.
Did you know?

• In 1925, the Progressives called for completion of the railway. Port Churchill, because of its natural harbour, replaced Port Nelson as the designated terminus at the recommendation of an English civil engineer.

• It was only in 1929, after more than fifty years of business and political maneuvering, economic depression, engineering difficulties, an armed uprising, and a world war, that the Hudson Bay Railway reached the Port of Churchill. By then, it had become a symbol of Manitoba’s northward expansion, and of her struggle for independence.
Omnitrax purchased the rail line from Canadian National Railway in July 1997.

The purchase included:

- 510 miles of track from The Pas to Churchill,
- 30.5 miles from Thompson Junction to Thompson,
- 87 miles from The Pas to Flin Flon, and
- 185 miles from Sherritt Junction to Lynn Lake (Sherridon Subdivision).

In April 2005, Hudson Bay Railway sold the Sherridon Subdivision to the Keewatin Railway Company.
Our Business

- HBR is a vital transportation link, providing service to Northern Manitoba’s important, but remote, resource-based industries, as well as a link in the supply chain to the communities in the Kivalliq region of Nunavut.
- Transload services at The Pas, Thompson and Churchill, which includes transloading between truck and railcars, automobile transportation, piggyback service and container traffic.
- Switching Services.
- Special Train Services.
- Dimensional Load Shipments.
- Car Storage.
- Car Repair.
- Land and Track Lease.
- Serves Canada’s only Arctic deep water port, with the shortest North American sea route to Central and Northern Europe.
- Serves Churchill Marine Tank Farm, the largest fuel terminal in the Arctic (50mm liter capacity).
- Provides passenger service under contract for VIA Rail Canada.

We can help you meet your transportation needs in the North.
Stats – Hudson Bay Railway

• Extends 510 miles from The Pas to Churchill, MB and 87 miles from The Pas to Flin Flon, MB.
• Moves approximately 19,500 carloads annually (2006-2009 average).
• Intraline/local movements make up roughly 12.5% of the yearly carloads shipped.
• Grain is the largest commodity shipped on HBR. HBR/OmniTRAX work closely with the Canadian Wheat Board to maximize the flow of grain shipments through the Port of Churchill, with focus on future growth.
• Commodities shipped include perishables, automobiles, construction material, heavy and dimensional equipment, scrap, hazardous materials, kraft paper, concentrates, containers, fertilizer, wheat and other grain products.
• Track speed up to 40 mph.
• Owns 80 railcars, consisting of flatcars, boxcars, bulkhead flatcars, gondolas, intermodal cars and auto-carriers.
• Has a fleet of 25 locomotives.
The Pas Yard
Bay Line Track Improvement Program 2008-2010

➢ Work Program:

• The last three years have been divided into work elements shown below:
  – Surfacing and Ballasting (884 Track Miles Completed)
  – Tie Installation (142,173 Ties Installed)
  – Rail Installation (34,396 feet)
  – Major Bridge Work (Completed)
  – Subgrade Restoration (75% Complete)

➢ Investment:

• Over the last 3 years $29 million has been spent on the Bay Line Track Improvement Project.

• The Project work has resulted in dramatic improvement in operations, increasing track speeds and thus helping to sustain service to the North.
The Future

• Attract inbound shipments through the Port of Churchill for southbound movement by rail.

• Continuing commitment to the Track Program and ongoing yearly maintenance to provide increased reliability.

• Continuing to grow our relationship with the Canadian Wheat Board and other customers in order to diversify shipments over the railroad and through the Port of Churchill.

• Is Winnipeg the hub of servicing the North? Work closely with partner transportation companies to provide the customer with best possible rates, delivery and service.

Visit our website at www.omnitrax.com
Port of Churchill
The Way North

Northern Exposure Conference
September, 2010
Over 30 Countries Served

<table>
<thead>
<tr>
<th>Sudan</th>
<th>Spain</th>
<th>Ghana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>United Kingdom</td>
<td>The Netherlands</td>
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<tr>
<td>Ireland</td>
<td>Mexico</td>
<td>Greece</td>
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<tr>
<td>South Africa</td>
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<td>Brazil</td>
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<td>Italy</td>
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<td>Namibia</td>
<td>D.R. of Congo</td>
<td>Ecuador</td>
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<td>Libya</td>
<td>Russia</td>
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</tbody>
</table>
Over 30 Countries Served
The BROE Group

REAL ESTATE  TRANSPORTATION  ENERGY
Churchill – A World Port
The Port of Churchill – North America’s Arctic Port

• Located on Hudson’s Bay, it is North America’s only deep water Arctic port

• Provides a natural trade route stretching from Murmansk to Churchill through the United States to Monterrey, Mexico
Churchill Marine Tank Farm
Strategic Location – North America

The Port is connected to the North American economy.

The Port is the northern point of the Mid-Continent Trade Corridor, stretching from Manitoba to Mexico.

A market of 100 million people are within a 30-hour trucking radius of Winnipeg.
Canadian Provinces, Nunavut
Churchill Ships

- Wheat
- Canola
- Fuel
- Peas
- Ores
- Equipment
- Consumer Goods
- Fertilizer
- Mining and Building Materials
# Importance of Churchill for International Trade Flows

<table>
<thead>
<tr>
<th>Destination</th>
<th>Churchill To</th>
<th>Thunder Bay To</th>
<th>Mileage Savings</th>
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</thead>
<tbody>
<tr>
<td>Oslo</td>
<td>3,370</td>
<td>5,368</td>
<td>1,998</td>
</tr>
<tr>
<td>Murmansk</td>
<td>3,763</td>
<td>5,210</td>
<td>1,447</td>
</tr>
<tr>
<td>Liverpool</td>
<td>2,992</td>
<td>4,035</td>
<td>1,045</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>3,344</td>
<td>4,325</td>
<td>981</td>
</tr>
</tbody>
</table>

The chart shows that using the Port of Churchill results in savings in transit time. By avoiding the Seaway, an ocean vessel can save up to five days from a port such as Murmansk. At a cost of $25,000 a day to charter a vessel, this could mean a saving to the vessel owner of approximately $100,000.
Climate Changes

• Climate change is having a profound effect on the length of the Churchill shipping season.

• Churchill ice free season has historically been from July 20 to October 31.

• In 2008 the shipping route was virtually ice free from July 1 to November 15.

• In 2010, ice was off the Bay by June 1.
Churchill Gateway Development Corporation

- Public/private funding by OmniTRAX, the Province of Manitoba and the Canadian Government

- Objectives: diversify the commodity base, increase inbound and outbound traffic, and ensure sustainability and viability of the northern transportation system
Churchill and the World
To Nunavut via Churchill II: Port and Water

Paul D. Larson, Ph.D.
CN Professor of SCM
Director, Transport Institute
University of Manitoba
larson@cc.umanitoba.ca

Delta Hotel, Winnipeg
September 29, 2010
“transportation is the public-policy, lifestyle and business issue of the decade”

Holistic Transportation Planning

“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.”

Poorman (2005)
## Canada’s Population, Oct. 2005

<table>
<thead>
<tr>
<th>Province/Territory</th>
<th>People</th>
<th>% of total</th>
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<tbody>
<tr>
<td>Newfoundland &amp; Labrador</td>
<td>515,591</td>
<td>1.59</td>
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<tr>
<td>Prince Edward Island</td>
<td>138,278</td>
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<tr>
<td>Nova Scotia</td>
<td>938,116</td>
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<td>Quebec</td>
<td>7,616,645</td>
<td>23.52</td>
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<td>Ontario</td>
<td>12,589,823</td>
<td>38.88</td>
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<tr>
<td>Manitoba</td>
<td>1,178,109</td>
<td>3.64</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>992,995</td>
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<tr>
<td>Alberta</td>
<td>3,281,296</td>
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<tr>
<td>British Columbia</td>
<td>4,271,210</td>
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<tr>
<td>Yukon Territory</td>
<td>31,235</td>
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<td>Northwest Territories</td>
<td>42,965</td>
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<tr>
<td>Nunavut</td>
<td>30,133</td>
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<tr>
<td><strong>Canada</strong></td>
<td><strong>32,378,122</strong></td>
<td><strong>100.0</strong></td>
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<tr>
<td>Province/Territory</td>
<td>Area (km²)</td>
<td>% of total</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador</td>
<td>405,212</td>
<td>4.06</td>
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<tr>
<td>Prince Edward Island</td>
<td>5,660</td>
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<tr>
<td>Nova Scotia</td>
<td>55,284</td>
<td>0.55</td>
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<tr>
<td>New Brunswick</td>
<td>72,908</td>
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<tr>
<td>Quebec</td>
<td>1,542,056</td>
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<tr>
<td>Ontario</td>
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<tr>
<td>Manitoba</td>
<td>647,797</td>
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<td>Saskatchewan</td>
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<tr>
<td>Alberta</td>
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<tr>
<td>British Columbia</td>
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<td>Canada</td>
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Canada’s Surface Area

http://www.statcan.ca/
<table>
<thead>
<tr>
<th>Province/Territory</th>
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<th>Area (km²)</th>
<th>People/km²</th>
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<td>1.53</td>
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<td>4.96</td>
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<td>4.52</td>
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<td>0.06</td>
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<td>0.03</td>
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<tr>
<td>Canada</td>
<td>32,378,122</td>
<td>9,984,670</td>
<td>3.24</td>
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Chart 30.3 Air passenger trips, selected cities, 2006

Source: Statistics Canada, Catalogue no. 16-002-X.
**Household spending on transportation, 2005**

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<th></th>
<th>Average household expenditure</th>
<th></th>
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<td></td>
<td>Total</td>
<td>Private transport</td>
<td>Airplane</td>
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<td>9,382</td>
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<td>NWT</td>
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<td>8,572</td>
<td>1,433</td>
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<td>2,362</td>
<td>1,803</td>
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<td>Canada</td>
<td>8,914</td>
<td>8,088</td>
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Source: Statistics Canada, CANSIM table 203-0007.
## Domestic shipping, tonnage loaded and unloaded by water transport (thousand tonnes)

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<tr>
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<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
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<td>39,771</td>
<td>37,260</td>
<td>36,334</td>
<td>26,691</td>
<td>36,348</td>
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<tr>
<td>Ontario</td>
<td>28,259</td>
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<td>30,913</td>
<td>32,634</td>
<td>30,497</td>
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<td>27,435</td>
<td>28,516</td>
<td>28,906</td>
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<td>35,041</td>
<td>25,591</td>
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<td>4,657</td>
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<td>7,192</td>
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<td>3,477</td>
<td>4,199</td>
<td>5,644</td>
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<tr>
<td>Prince Edward Island</td>
<td>781</td>
<td>744</td>
<td>771</td>
<td>665</td>
<td>840</td>
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<tr>
<td>Nunavut</td>
<td>151</td>
<td>154</td>
<td>157</td>
<td>153</td>
<td>159</td>
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<tr>
<td>Northwest Territories</td>
<td>32</td>
<td>28</td>
<td>38</td>
<td>36</td>
<td>35</td>
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<td>37</td>
<td>12</td>
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Source: Statistics Canada, Catalogue no. 54-205-X.
## International shipping, tonnage loaded and unloaded by water transport (thousand tonnes)

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<tr>
<th></th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>306,700</td>
<td>315,075</td>
<td>330,912</td>
<td>330,285</td>
<td>333,737</td>
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<td>95,315</td>
<td>99,228</td>
<td>101,995</td>
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<td>77,003</td>
<td>83,807</td>
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<td>26,822</td>
<td>26,658</td>
<td>23,771</td>
<td>21,406</td>
<td>22,428</td>
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<tr>
<td>Prince Edward Island</td>
<td>64</td>
<td>118</td>
<td>77</td>
<td>72</td>
<td>80</td>
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<td>Nova Scotia</td>
<td>37,935</td>
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<td>47,246</td>
<td>48,000</td>
<td>48,111</td>
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<td>615</td>
<td>400</td>
<td>468</td>
<td>482</td>
<td>540</td>
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<td>0</td>
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<tr>
<td>Nunavut</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Statistics Canada, Catalogue no. 54-205-X.
### Kivalliq Sailings – September 28

<table>
<thead>
<tr>
<th>Location</th>
<th>Estimated Arrival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker Lake</td>
<td>#1 - October 1-2; #2 - October 9</td>
</tr>
<tr>
<td>Chesterfield Inlet</td>
<td>October 6</td>
</tr>
<tr>
<td>Arviat</td>
<td>October 11</td>
</tr>
<tr>
<td>Whale Cove</td>
<td>October 13</td>
</tr>
<tr>
<td>Coral Harbour</td>
<td>October 11</td>
</tr>
<tr>
<td>Rankin Inlet</td>
<td>#1 - October 2-3; #2 - October 15</td>
</tr>
</tbody>
</table>

The Hudson Bay Port Company and Braden Burry Expediting (BBE) have announced a new service to Nunavut through the Port of Churchill. Now freight customers in the Kivalliq Region of Nunavut will be able to obtain an all-inclusive, through rate from Winnipeg to towns on the western shore of Hudson Bay.

**Nunavut**

- Land area: 746,000 sq. miles
- Population: 29,474 (2006 census)
  - Density: 0.04/sq. mile (1 person per 25 sq. miles)

**Manitoba**

- Land area: 211,720 sq. miles
- Population: 1,148,800 (2006 census)
  - Density: 5.4/sq. mile
  - Density (outside Winnipeg): 2.4/sq. mile
Nunavut Economy

• Volatility is tied closely to fortunes of mining sector
  – Approximate % Change in GDP
    • 2000  +8%
    • 2001  +6%
    • 2002  +6%
    • 2003  -4%
    • 2004  +2%
    • 2005  -1%

• Volatility generates variability in level and commodity mix of imports to Nunavut
Nunavut Import Commodity Mix

- Depends on what mining is going on, but ......
- Fuel is a mainstay, along with
- Dry goods and groceries
- Building materials
- ... and, snowmobile parts and ATV tires
- However, long-term planning of freight mix to Nunavut is difficult.
Churchill Gateway’s role?

• Tough to estimate, given volatility in scale and mix
• Therefore, a challenge to plan infrastructure needs
• In contrast, Montreal port facilities can easily absorb fluctuations in Nunavut’s sea lift requirements
• Products delivered through Churchill are handled frequently – truck to Thompson – rail to Churchill – barge to Kivalliq, and use transshipping facilities that may be undersized (due to challenges in planning)
Chicken and egg. Increased volume supports infrastructure improvement, which supports increased volume, ... 

Regarding infrastructure, efforts have been made to improve the supply chain, but multiple transshipping points and inter-modal handling facilities remain a challenge.

For now, let’s leave out the shipping season issue.

So, *build it and they will come*, or is there more to it?
Competition to Churchill

• ... Yes, there’s more to it than bricks and mortar

• Is it possible that some people in Nunavut think “Manitoba has forgotten them?”

• Increasing presence by Ontario- and Quebec-based suppliers encourages buying from there—and the best delivery route is to get to water ASAP.
Competition to Churchill (cont.)

• Quebec has sponsored junkets putting Nunavut buyers in the room with Quebec suppliers. The result? After the marine season, some materials are trucked from Quebec and Ontario to Thompson and then flown to Nunavut. (These are materials that could be sourced in Manitoba).

• So what?
  – It’s about building the market for Manitoba-sourced supplies to support infrastructure improvements (would that be the chicken or the egg?)
• Would the Churchill Gateway benefit from further infrastructure upgrades? – Yes

• If we build it, will they come? – Don’t bet on it unless we’re willing to do the communications/marketing to help Nunavut see Manitoba as a preferred supplier.

• Next steps? – If the Churchill Gateway is to play and compete in this arena, marketing and infrastructure enhancement must be on the same page.

• How can public policy facilitate?
The Sweet Spot

Sustainability

Cost Service

Supply chain integration

Strategic infrastructure investment

Intelligent Transportation Systems

“Plans to build the 1,200-km. road are on track; the road is expected to start in Gillam, Manitoba, connecting through Churchill and then up to the Nunavut communities of Arviat, Whale Cove and Rankin Inlet. The road is expected to cost about $1.2 billion.”
Shipping a 20- to 30-tonne transformer from Winnipeg to Baker Lake, Nunavut

- **Surface Option 1**
  - Winnipeg to Valleyfield, Quebec by rail
  - Around Ungava Bay to Chesterfield Inlet by short-sea
  - Chesterfield Inlet to Baker Lake, Nunavut by barge

- **Surface Option 2**
  - Winnipeg to Thompson, Manitoba by truck
  - Thompson to Churchill, Manitoba by rail
  - Churchill to Chesterfield Inlet, Nunavut by short-sea
  - Chesterfield Inlet to Baker Lake, Nunavut by barge
The Options

- Valleyfield is circuitous, but less challenging
- The route North through Manitoba is more direct, but the rail leg and linkage to short-sea is challenging
- Another alternative: Stage the transformer in Thompson and move it the remaining 940 km. by airship direct to Baker Lake.
- Heavy Lift designs are under development
  - LTA may theoretically provide lowest cost movement, but there are operational (ground handling) limitations
  - HTA hybrid may be more pragmatic
## Surface Option Freight Rates

<table>
<thead>
<tr>
<th>Mode</th>
<th>Origin</th>
<th>Destination</th>
<th>Miles</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>Winnipeg</td>
<td>Thompson</td>
<td>476</td>
<td>$2,050</td>
</tr>
<tr>
<td>Rail</td>
<td>Thompson</td>
<td>Churchill</td>
<td>341</td>
<td>$2,238</td>
</tr>
<tr>
<td>Short Sea</td>
<td>Churchill</td>
<td>Chesterfield Inlet</td>
<td>326</td>
<td>$5,383</td>
</tr>
<tr>
<td>Barge</td>
<td>Chesterfield Inlet</td>
<td>Baker Lake</td>
<td>168</td>
<td>$9,671</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1,311</td>
<td></td>
</tr>
</tbody>
</table>
Cost and Service Considerations

• Rail and sea - lowest cost per tonne-mile; using dependable, scheduled departures and arrivals

• ~ $10,000 freight rate for Winnipeg to Thompson by road, rail to Churchill, and water to Baker Lake

• Main limitation: seasonality of short-sea in Hudson Bay

• If airship moved the transformer from Thompson to Baker Lake (940 km. or about 590 miles), rates are estimated at $22,120 ($2,050 for Winnipeg-Thompson by road + $20,070 for Thompson-Baker Lake by airship*

*Tonne-mile calculations derived from data in “Economics of Airships for Northern Re-supply” by Prentice & Thomson, 5th International Airship Convention & Exhibition.
While less cost-effective as road/rail/sea, airship offers several advantages:

- Only 1 transfer at Thompson versus 3 transfers at Thompson, Churchill and Chesterfield Inlet (costs of transfers are excluded in this analysis)
- Thompson to Baker Lake by airship could be done in 1 day
- Seasonality would be less of a factor in a road/airship move, allowing closer to year-round delivery

Critical assumption: regularly scheduled airship service (for an “apples to apples” comparison). Further, we’re “assuming an airship,” i.e. amortization of investment and development costs are not in the equation
To Nunavut via Churchill II: Port and Water

Paul D. Larson, Ph.D.
CN Professor of SCM
Director, Transport Institute
University of Manitoba
larson@cc.umanitoba.ca

Delta Hotel, Winnipeg
September 29, 2010

Thank you!
Nutrition North Canada (NNC)  
New Era, New Opportunities,  
New Benefits for Canada’s North
Purpose of Nutrition North Canada

- To make healthy food more accessible and affordable to residents of isolated northern communities.
Some History of Northern Supply of Nutritious Foods

- Government has operated the Food Mail Program (FMP) since the late 1960’s
- Canada Post involvement from its inception
- INAC assumed control in 1991
- Very few changes in Program design
- Essentially a transportation subsidy
- Canada Post Corporation (CPC) continued to manage the procurement of transportation service (under Agreement with INAC)
- Subsidized shipping rates virtually constant since INAC assumed control
Key Food Mail Numerics

- 134 eligible communities
- 77 are extensive users
- 20 million kilograms shipped in 2009-2010
- 82% perishable, 18% non-perishable/non-food
- Operates in 6 provinces and 3 territories
- 80% of volume (90% of subsidy) to Nunavut (59%) and Nunavik (31%)
- Cost to INAC - $58.3 Million in 2009-2010
- INAC’s A-base funding from 2002 to Budget 2010 - $27.6 Million
Basic Problems/Criticisms of the FMP

- Not financially sustainable
- Lack of accountability
- Poor visibility for the subsidy
- Distortion of market forces
- Little incentive for supply chain innovation or efficiencies
- Composition and targeting of the eligibility lists
- Minimal health awareness component
- Lack of data/performance measures
- No voice for Northerners
Food Mail Program Review

- To ensure sustainability
- To improve efficiency
- To increase visibility

- Dedicated INAC Review team
- Minister’s Special Representative
- Program Evaluation
- Public Engagements
- Expert Studies
Governing Principles for a New Program Design

- Sustainability/Predictability
- Transparency
- Accountability
- Visibility
- Fairness
Nutrition North Canada Highlights

- Change from a transportation subsidy to a retail-based subsidy
- Canada Post no longer involved
- Market-driven Approach
- Eligible Recipients
  - Northern Retailers
  - Southern Suppliers
  - Northern Country Food Commercial Processors/Distributors
- Personal Orders retained
- Only items shipped by air transport are subsidized
Nutrition North Canada Highlights (Cont’d)

- Contribution Agreements
- Subsidy based on weight of eligible goods shipped by air to eligible communities
- Claims Process
- Data Collection
  - Shipping Data
  - Pricing Data
- Subsidy and Program Visibility
- Work with Health Canada which will provide complementary nutrition education and awareness programming
Nutrition North Canada Highlights (cont’d)

- Community Eligibility
  - Extensive users
  - Nominal users
  - Subsidy rates “customized” by community

- Item Eligibility
  - Highly nutritious items
  - Other nutritious items
  - Different subsidy rates

- Non-food/non-perishables removed from Eligibility List
  - Based on advice from Health Canada and input from the new External Advisory Board, Eligibility List may be revised

- Country Food
Nutrition North Canada Highlights (Cont’d)

- New community-driven activities to:
  - Change eating behaviour
  - Build awareness
  - Increase knowledge and skills

- Building on Existing Programs
  - Canada Prenatal Nutrition Program (CPNP)
  - Aboriginal Diabetes Initiative (ADI)

- New Program Funding
Nutrition North Canada Highlights (cont’d)

**Increased Governance, Management and Accountability**

- Inter-departmental Oversight Committee
- External Advisory Board
- Dedicated INAC Unit
- Contribution Agreements
- Improved Data
- Performance Measurement/Cost Containment Strategies
Nutrition North Canada Highlights (cont’d)

- Communication Strategies
  - To build awareness/increase consumption
  - To receive feedback/input
  - To identify and promote the federal role
Benefits to Northern Consumers

- Program sustainability
- Fair pricing – subsidy passed on
- Better quality products
- Increased awareness
- Complementary health initiatives
- Personal orders retained
- Voice in the Program
Benefits to Retailers, Wholesalers and Supply Managers

- Sustainable/predictable subsidies
- Greater flexibility/supply chain control
- Increased visibility/consumption
Benefits to Government/Taxpayers

- Cap on Program Expenditures/Sustainability
- Increased Awareness
- Increased Consumption of Healthy Food
- Better Health Outcomes
Transition to the New Program

- Announcement of NNC – May 2010
- Revised Eligibility List – October 2010
  - Removal of some lower nutritional value foods
  - Removal of non-food/non-perishable items for eligible communities with marine service (sealift/barge/ferry)
- Final Eligibility List – April 1, 2011
  - Removal of non-food/non-perishable items for communities served by winter roads
- Termination of Canada Post Agreement – March 31, 2011
- New Program begins – April 1, 2011
Work to be Completed before April 1, 2011

- Complete Membership Selection for External Advisory Board
- Contract for Claims Processing Service
- Contract for Audit Services
- Build INAC Dedicated Resources
- Develop Recipient Selection Criteria
- Develop Individual Contribution Agreements with Recipients
- Announce New Subsidy Structure
- Complete and Launch Marketing and Branding Program
Is there a role for your organization in Nutrition North Canada?
Nutrition North Canada

Contact Information:
E-mail: nnc@ainc-inac.gc.ca
25 Eddy, 9th Floor
Gatineau, QC K1A 0H4
Ph (819) 994-4810
Fax (819) 953-9309
Arctic Co-operatives Limited
• Co-ops are autonomous multi-purpose community businesses

• Co-ops operations include:
  • Retail Stores
  • Hotels
  • Fuel Distribution
  • Heavy Equipment
  • Rental Property
  • Cable TV
  • Various agencies and service contracts
• Over the last 5 years, local co-ops have returned more than $29 million in patronage refunds to individual co-op members
• Over the last 5 years, co-ops have invested over $25 Million in New Community Infrastructure
Retailing in the Arctic

Reflections
Retailing in the Arctic

Reflections

• In 1972, when representatives of 26 co-operatives met in Churchill, Manitoba they wanted to work together and pool their buying power in the purchase and transportation of merchandise for co-op retail stores

• The annual summer re-supply cargo vessel was the only practical means of shipping merchandise, as air service was very limited
Retailing in the Arctic

Forging Ahead
Retailing in the Arctic

Forging Ahead
Retailing in the Arctic
Forging Ahead
Retailing in the Arctic

Forging Ahead
Additional Costs of Doing Business in Canada’s Arctic
Remote Market Pricing Considerations

Large area + Very small population = Poor economies of scale
Remote Market Pricing Considerations

• Travel of support resources from points in the south to and from stores and transfers of employees between stores are costly

• Less frequent deliveries and time, distance and frequent handling increases our rate of shrink (spoilage and damage)
Remote Market Pricing Considerations

Shrinkage
- Mishandling (local handling and storage)
- Spoilage of perishables/dated products
- Damaged in transit
- Lost in transit
- Internal theft
- Shoplifting
- Pricing errors
- Paperwork
Freight Costs

Road, air, rail, winter road, resupply and local freight costs combine to contribute to the high costs of products in the north when compared with southern markets.
Freight Costs

Air freight costs compared with trucking costs for a rural southern retail:

• Cargo rates can be over 120 times more expensive
• Food Mail “A” rates are as much as 10 times more costly
Freight Costs

Winter-Road trucking rates may be 10 times more than those for a typical rural southern retailer.
Freight Costs

Re-supply deliveries cost as much as 10 times more than trucking costs for the typical retailer in the south.
Extra Freight Costs

- Local transportation costs can range from $5 to $30/CWT
- Charges for handling and sorting Food Mail products
- Case / packaging weights
- Crating and extra packaging charges
Remote Market Pricing Considerations

Utilities
High fuel and power rates represent a large expense for many community stores. In some cases, these may be up to 30 times higher than in southern markets.
Remote Market Pricing Considerations

Construction Costs

Construction costs per square foot are approximately three times higher than in southern markets due to:

• Lack of specialized equipment
• Travel expenses
• Accommodations
• Climate
• Freight
Remote Market Pricing Considerations

Capital Requirements

A large investment in re-supply inventory can restrict operating capital.
Remote Market Pricing Considerations

Repairs and Maintenance

• Repairs and Maintenance costs are higher due to travel time and costs

• Example for repairs to a failed produce case compressor:

<table>
<thead>
<tr>
<th>Arctic Bay:</th>
<th>Winnipeg:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airfare</td>
<td>Service Call @$75</td>
</tr>
<tr>
<td>$ 5,500</td>
<td>$ 75</td>
</tr>
<tr>
<td>Expenses</td>
<td>3 hours @ $100</td>
</tr>
<tr>
<td>$ 600</td>
<td>$ 300</td>
</tr>
<tr>
<td>30 hours @ $100</td>
<td>Total</td>
</tr>
<tr>
<td>$ 3,000</td>
<td>$ 375</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>$ 9,100</td>
<td></td>
</tr>
</tbody>
</table>
Remote Market Pricing Considerations

Productivity
- Remote warehousing
- Resupply volumes and related handling
- Floor loading restrictions
- High costs for salaries and wages
Remote Market Pricing Considerations

Other Indirect Costs

• Requirements to translate flyers, signs, board minutes, business documents, etc. can cost up to $90/printed page
Reducing the Cost of Living in the Arctic

As retail prices are a function of total costs, initiatives in the following areas will contribute to lower retail prices:

- Freight
- Utilities
- Shrinkage
- Improvements in local warehousing and freight handling infrastructure
- Availability of local trades
Nutrition North Canada Program

-Key changes for Arctic Retailers
  -Eligible products
  -Elimination of entry points
  -Elimination of deposit schedule
  -Administration and Marketing requirements of participating retailers and wholesalers
  -Ability to claim for damages and shortages
  -Reduction in charges for sorting and labelling
Food Security

“when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”.

-World Health Organization
Nutrition North Canada Program

The Co-op System, and other like minded retailers in remote markets, look forward to working co-operatively with INAC and our supply chain partners to improve food security in the markets that we serve.
SUPPLY CHAIN CONFERENCE
September 2010

CANADIAN NORTH
seriously northern
Introduction

WHY NOT WINNIPEG?

WINNIPEG

NOT!!!

WHY???
Enduring Truths and Industry Fundamentals
Augmented Air Transportation Demand

Enduring Truth #1

Air travel and cargo demand will continue to grow
Enduring Truth #2

Capacity will always outpace demand on a cyclical basis, creating a perpetual challenge for carriers to make money.
Enduring Truth #3

There will never be enough terminal building space, runways, ramp space or air traffic capability and the requirement to invest in airport and navigation system infrastructure will not diminish over time.
Enduring Truth #4

There will always be a requirement for air travel, the government will always be under pressure to step in for a bailout in tough times and there will always be investors willing to fund new or reconstituted airline ventures.
Nasty New Entrants, Competition and Deregulation

Enduring Truth #5

There will be no reregulation and competition for passengers and airport resources will be fierce.
Lower Airfares and Higher Costs

Enduring Truth #6

Air fares will continue to have downward pressure, costs will have continuing upward momentum and federal airport rents need a return to reality. The free market has had a pro consumer disciplinary effect on airlines. We need to find a way to similarly motivate airports, NavCan and the federal government.
Enduring Truth #7

Security demands will increase and their costs will rise accordingly.
Going Green

Enduring Truth #8

Going green is here to stay and while it is a good objective it will have a price tag attached
Conclusion

• Stakeholder Cooperation
• Cooperate on:
  – Airport Security Charges
  – Land Rents
  – Fuel Taxes
THANK YOU
6TH Annual Supply Chain Connections Conference: Northern Exposure
September 30, 2010
CentrePort: Canada’s Centre for Global Trade

CentrePort Canada is a business, logistics and development facilitator and an investment promotion and marketing agency for the inland port.

CentrePort Canada’s Mandate is to:
- Manage development of the inland port;
- Market the inland port;
- Act as a one-stop shop for investment activity.
What is an Inland Port?

“A physical site located away from traditional coastal borders with the vision to facilitate and process international trade through strategic investments in multi-modal transportation assets and by promoting value-added services as goods move through the supply chain.”

Center for Transportation Research, 
The University of Texas at Austin
**CentrePort Canada Strategic Assets**

| Land                      | - 20,000 acres  
|                          | - 1,000 acres and over 500,000 sqf industrial space available now |
| Labour                   | - Lowest average hourly wage in Western Canada |
| Logistics                | - 24 hr International Airport  
|                          | - 3 Class I and one short line railways  
|                          | - 2 intermodal facilities within Winnipeg  
|                          | - Over 400 trucking companies  
|                          | - Deep-sea Port of Churchill |
| Linkages                 | - Foreign Trade Zone-programming |
|                          | - One-stop-shop for investment attraction incentives and programs |
Western Canada has a system of transportation and trade assets for Canada to reach local and global markets:

- **Asia Pacific Gateway**
  - Trans Canada Corridor
  - Northwest Corridor
- **Quebec-Ontario Gateway**
  - Trans Canada Corridor
  - Windsor/Detroit
- **NAFTA Gateway**
  - Mid-Continent Corridor
  - Eastern USA Seaboard
  - Mexico
- **Arctic Gateway**
  - Air Polar Routes
  - Marine Polar Routes
- **Atlantic Gateway**
  - Halifax Port
The Arctic Gateway
Northern Opportunities for CentrePort

“The most obvious impact of changing climate on Arctic marine transportation will be an increase in the length of the summer shipping season, with sea-ice duration expected to be 10 days shorter by 2020 and 20 –30 days shorter by 2080...”

- Natural Resources Canada

• **Staging Centre for Northern Canada**
  - Supply northern communities / projects
  - Consolidate Arctic exports

• **Doorway to the Arctic Bridge**
  - Connecting North America’s Mid-West to Eastern Europe and Western China via the Arctic
Opportunities for Staging the North

- Supply to northern communities & business development
  - Population of 100,000
  - Development of mining projects & continuing explorations (Nunavut, North West Territories)
  - Research stations
Opportunities for Staging the North

• **Staging centre for Arctic exports**
  – Mining (diamonds, gold, tungsten, silver, etc.)
  – Forestry
  – Wild Fur

<table>
<thead>
<tr>
<th>Exports 2009</th>
<th>Million $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nunavut</td>
<td>$2.7</td>
</tr>
<tr>
<td>Northwest Territories</td>
<td>$1,525.8</td>
</tr>
<tr>
<td>Yukon</td>
<td>$128.45</td>
</tr>
</tbody>
</table>

Source: Statistics Canada
CentrePort as the Doorway to the Arctic Bridge

- Connecting North America, Eastern Europe and Western China
Arctic Bridge Puzzle: the pieces

China:

- Economy highly reliant on international trade
  - WTO: Trade to GDP ratio 68.5 (2006-2008)
  - Merchandise world trade: 2\textsuperscript{nd} exports / 3\textsuperscript{rd} imports
  - Major trading partner for North America (X/M); Canada (4/3), U.S. (4/2), Mexico (6/3)

- Economic growth of central and western China
  - Manufacturing moving inland
  - 20% throughput in Shanghai comes from inland points along the Yangtze River

- Development of 21 logistics cities
Arctic Bridge Puzzle: the pieces

China rail connection to Europe:

- Eurasian Continental Bridge “New Silk Road”
- Connection to Russia’s Trans Siberian Rail Network
- Plans to reach aggressive transit times by rail to Western Europe
  - Beijing – London in 14 days
- Development of high-speed train network
Russia:

- Railway Transport Development Strategy 2030
  - Integration of the Eurasian transport system
  - Investments of USD 450 billion by 2030
  - Modernization of railway stations on Russia’s borders with Mongolia, China and Republic of Korea
  - Improving rail access to Russian seaports

- Express container trains Moscow to the Baltic Ports – Connection to Eastern and Central Europe
  - Moscow to Berlin: 4.5 days

- Increasing interest in the Northern Sea Route to reach China
Arctic Bridge Puzzle: the pieces

- Connects Moscow to Vladivostok (Pacific)
- Towards China, connects with Trans Manchurian and China Railways
  - 8+ days from Moscow to Beijing
- Moves 100 million tonnes – 200,000 TEUs per year
- Crosses Eurasia in 10.5 days (Russia/Finland border to Vostochny/Vladivostok)
Arctic Bridge Puzzle: the pieces

The Arctic:

- Expansion of the ice-free periods
- Untapped resources in the region
  - Canada: 25% discovered petroleum remaining & 50% estimated potential
  - 13% total forest cover
- Potential shorter shipping routes
- A number of Arctic ports can be kept open year-round
- Increasing international interest in discussing Arctic issues; Arctic Council

(Canada – Chair of the Council in 2013)
Bringing the Arctic Bridge Puzzle Together; Rail and Sea

• CPC / MIT research on Transit times from Winnipeg to China via Port of Churchill

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Distance</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winnipeg</td>
<td>Churchill (rail)</td>
<td>1,700 km</td>
<td>2 days</td>
</tr>
<tr>
<td>Churchill</td>
<td>Murmansk (sea)</td>
<td>3763 Nautical Miles</td>
<td>12 days</td>
</tr>
<tr>
<td>Murmansk</td>
<td>Moscow (rail)</td>
<td>2,350 km</td>
<td>1 1/3 days</td>
</tr>
<tr>
<td>Moscow</td>
<td>Beijing (rail)</td>
<td>9,000 km</td>
<td>8+ Days</td>
</tr>
<tr>
<td>Beijing</td>
<td>Chongqing (rail)</td>
<td>2,100 km</td>
<td>2 days</td>
</tr>
<tr>
<td>Total Transit times</td>
<td>Winnipeg</td>
<td>Beijing</td>
<td>23 - 24 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chongqing</td>
<td>25 - 26 days</td>
</tr>
</tbody>
</table>
Bringing the Arctic Bridge Puzzle Together: Polar Air Routes

- Beijing
- Singapore
- Delhi
- Mumbai
- Moscow
- Krasnoyarsk
- Anchorage
- Chicago
- Manitoba
The Arctic Bridge: the Challenges

China
• Rail is more expensive than barge
• Eastern sea ports not congested (yet)

Russia
• Rail gauge differences with China and most of Europe
• Vast territory
• Limited container handling capacity on Trans-Siberian Rail Network (300,000 TEUs)

Arctic
• Harsh climate conditions
• Lack of infrastructure
• High insurance premiums
CPC Vision: The Arctic Opportunity

Building New Supply Chains

- Arctic Bridge From CentrePort Canada to Eastern Europe and Asia.
- Competitive shipping and transit times.
- Marine/Rail – Winnipeg to Beijing 23-24 days; Winnipeg to Chongqing 25-26 days.
- Air – Winnipeg to Shanghai 12:44 hours; Winnipeg to Beijing 11:48 hours.
- Modern aircraft and new high-speed rail from China to Russia to further decrease transit times.
CPC Vision: The Arctic Opportunity

CentrePort Canada Inland Port
Facilitating an efficient utilization of the Arctic Gateway

- Processing of international trade inland;
- Efficient use of transportation infrastructure – less activities carried out at port;
- Added flexibility to shipments to and from northern Canada by providing access to a rich mix of modes of transportation;
- Multidirectional Hub for distribution to North America, Eastern Europe and Asia
- FTZ environment for inventory destined to foreign markets;
  - Northern Canada ↔ U.S. & Mexico
  - North America ↔ Europe & Asia
The Northern Opportunities: Homework

• **Port of Churchill**
  – Improving land access to the port
  – Intermodal capabilities (container handling)
  – Competitive pricing vs other ports

• **Optimal coordination of activities between key actors of the Winnipeg – Churchill route**
  – Canadian National Railway
  – Hudson Bay Railway
  – Port of Churchill
  – Trucking companies

• **Support policies that boost Canadian competitiveness in international air cargo movements**
  – Open Skies
Thank you

www.centreportcanada.ca
• Manitoba Hydro in the North
  1. Maintaining electricity supply in remote locations
  2. New Generation Projects
  3. Resource Development Goals
  4. Opportunities for Northern Communities

• Major Challenges
  1. Winter Roads (Climate Change?)
  2. Manitoba Infrastructure
  3. Globalization of Supply
Future Generation Projects and First Nation Participants

- Keeyask Project
- Wuskwatim GS (under construction)
- Conawapa Project
- Nisichawayasihk Cree Nation
- Fox Lake Cree Nation
- Tataskweyak Cree Nation
- York Factory FN
- War Lake FN
- Limestone GS
- Long Spruce GS
- Kettle GS
- Thompson
- Shamattawa FN
- Winnipeg
- Manitoba Hydro
Keeyask Project
- 695 megawatts
- $4.6 billion (est.)

Wuskwatim Project
- 200 megawatts
- $1.3 billion (est.)

Conawapa Project
- 1485 megawatts
- $7 billion (est.)

Pointe du Bois spillway replacement
- 78 megawatts-existing
- $400 million (est.)

HVDC Converter North
- Keewatinooow CS
- $1.1 billion (est.)

HVDC Converter South
- Riel CS
- $1.2 billion (est.)

NCN Conawapa Project
- 1485 megawatts
- $7 billion (est.)
Supply Assumptions

Wuskwatim (Under Construction) 200 MW
Keeyask (Proposed) 695 MW
Conawapa (Proposed) 980 MW
Limestone Kettle 1,220 MW
Conawapa (Proposed) 1,330 MW

Wuskwatim
Keeyask
Conawapa
Wuskwatim Generation Station
Wuskwatim Generating Station

- 3 Generating Units
- Vertical Fixed-Blade Propeller Turbines
- Powerhouse Length ~118m
- Capacity ~204 MW
Wuskwatim Generating Station

- Approx. 21 m of hydraulic head
- Rated discharge
  \[ Q = 1,100 \text{ cms} \]
  \[ (38,850 \text{ cfs}) \]
- 183,000 m\(^3\) soil excavation
- 228,000 m\(^3\) rock excavation
- 120,000 m\(^3\) of concrete
Keeyask Generating Station
Keeyask Generating Station
Keeyask Generating Station
Conawapa Generating Station
Conawapa Generating Station
Resource Development Goals
- Application of Corporate Goals

• Integration of sustainability principles in all our projects (social, environmental)
• Overall net benefit to the local communities
• Local communities support projects
  – Alignment of interests in the licensing, construction and long-term operations of these projects
• Undertake planning, public consultation, public review and regulatory activities to have the option to construct projects at earliest opportunity for export & eventually Manitoba load
Business, Employment & Training Opportunities for Northern Communities

- Contracting opportunities

- Employment – direct hires and preference for northern aboriginal for every hire

- Training prior to the start of Projects (job ready) and On-the-job training during construction (Construction & Operations)

MH retains final responsibility for planning, design, construction, operation and maintenance
Major Challenges

1. Winter Roads
2. Manitoba Infrastructure
3. Globalization of Supply
A view from the cab on the Lake Winnipeg Crossing
Typical road through the bush
The ice road hazards
Issues Impacting Transport

- M.I.T.’s tolerance has diminished for over-capacity loads
- Upcoming projects such as Wuskwatim and ongoing upgrades will challenge our resources for equipment transport
Manitoba Hydro is Aligned with the Vision of the Province of Manitoba

- To develop Manitoba as a global logistics and distribution gateway, wherein trade between Europe, Asia and North America is routed via Manitoba.

- Development and growth of the Port of Churchill gateway is a centerpiece of Manitoba’s strategy.
Inbound And Outbound Freight From The Port of Churchill

- The Port of Churchill is the northern point of the Mid-Continent Trade Corridor, stretching from Manitoba to Mexico.
Manitoba Hydro - Global Market

• Transformers – Korea, China, United Kingdom, Israel
• Capacitors and Switches – China, Amsterdam, Germany
• Transmission Towers – India, Brazil, Spain
• Turbines – China, Brazil, Japan
• Station Bushings - Germany
Manitoba Hydro – Barriers

- Managing Transportation Risk (damage and warranty claims)
- Project Schedules (maintaining and protecting in-service dates)
- Shipping Constraints (capacity and off-loading capability)
- Economies of Scale (efficient use of the Port)
Manitoba Hydro - Current Status

- MH Transportation Analysts are working with the Churchill Development Corporation on inbound ocean freight.
- Contact information is included in tender documents involving international trade.
- Tender documents are based on international standards.
Questions
WELCOME TO

RANKIN INLET

NUNAVUT

LOCATION: 62° 48' 49" north, 92° 06' 03" west

ELEVATION: 102 feet
Greetings delegates, and thank you for the opportunity to be with you here today to discuss an issue which is near and dear to my heart and one that is critically important to the survival of Churchill and the enhancement of Canada’s sovereignty.

Churchill’s history is more than that of the Hudson Bay Company who built an outpost in which to serve as a base in its quest to exploit the riches of the new land. This led to two way trade between Europe and the new lands under the control of the HBC. This continued on for hundreds of years, as York Factory served as the Head Office of the HBC and saw much trade though the Arctic.

In the early 20th century, our forefathers saw the advantages that a new Northern Port could bring and set out to create a new trade route that would cut northward through the heart of Canada to the Arctic Ocean.

In the early 1930’s, the Port of Churchill was built and opened to its first shipment of grain. It has been grain that has been the lifeblood of the port’s international activities.

Churchill has traditionally been a resupply hub for the arctic communities of the Kivalliq District of Nunavut. In fact, from the 1960’s to the early 1970’s Churchill served as the Regional Office for the Keewatin District of the then Northwest Territories.
Much diverse cargo has graced the Port of Churchill throughout its storied past on its way to destinations further north or across the world.

The marketing agency has grown and is now the Churchill Gateway Development Corporation, which is funded by the Federal and Provincial governments and a private port operator. The work of the agency, of which I am a board member, has significantly increased our business and the importance of the port is more widely recognized by the shipping community.

Additionally, there was renewed optimism with the sale of the port to OmniTRAX. This created excitement and brought about a new lease on life. We were sure that we had finally succeeded in having Churchill recognized in the same manner as the Port of Thunder Bay and would receive its proportionate share of trade and in the end realize its full potential.

I have to ask the question, if we have lived up to this potential? I can tell you that expectations have been dashed where optimism has been replaced by skepticism. But it is far too easy to remain a skeptic. If I were a skeptic, I wouldn’t be here today and likely wouldn’t have survived my first term as Mayor of our special community.

Churchill is blessed with a strategic advantage and with impressive infrastructure by any standards. It is why I continue to fight on to ensure we use it to its full potential – just as our forefathers wanted. After all, it is not only about this generation – it’s about future generations.

Optimism for the future can still be realized, but to get there we first have to ask ourselves if the current operating model still fits in an ever changing world.
Churchill’s historical connections to points northward are also long and storied. As an example, many of Nunavut’s current leaders were educated in Churchill. These leaders have a strong attachment to this part of Manitoba and we must acknowledge and respect these connections.

The Government of Manitoba continues to enhance and expand on these connections as evidenced by a recent visit to Rankin Inlet by Premier Selinger and Minister Robinson. Other ministers, too, see the tremendous growth and opportunity these connections provide and work towards achieving a common objective of enhanced trade.

Climate change is having a profound impact on the region. In fact, it’s becoming evidently clear that Churchill can once again play a greater role in Arctic Sovereignty such as it did at the time of Fort Churchill when it was a thriving military post.

In the early 1990’s Churchill’s future was in doubt. Canadian National Railway and Canada Ports Corporation failed to see the continued value that a northern port would bring to the future of our country and appeared to be slated for closure.

A change in government brought about renewed optimism. The Axworthy Report was commissioned and came up with two significant recommendations:

1. To transition the Port and Rail line into an integrated system and
2. The establishment of a dedicated marketing entity previously absent under Ports Canada

Perhaps a new model could be on the cusp of being discussed – one that integrates not only the Port and Rail line, but also incorporating impressive air handling facilities too.
Perhaps it’s time to envision a new ownership model that incorporates the very best of northern and aboriginal entrepreneurialism.

Perhaps with a new public ownership model, governments may be more willing to invest. This could result in increased economic activities that would benefit all Manitobans.

These are the things that keep me optimistic and fighting on – after all, when referring to the Arctic, a Prime Minister once said, “use it or lose it”.

I can’t lose it on my watch – there is too much at stake.
Joint Task Force (North)
Brief to 6th Annual
Supply Chain Connection Conference

Presented by LCdr T. Clark
30 Sep 2010
How do you support this?

Ranger Ice Camp, Ward
Hunt Island
When you face this.
Agenda

- CF Forces in the North
- CF Infrastructure
- Types of Operations
- Logistical Challenges vs Modes of Transport
- Mitigation Strategies
  - Partnerships
  - Working with Industry
- Development of Capabilities
Perspective: Europe Overlay
Military Infrastructure

- JTFN Headquarters
- JTFN Detachments
- Eureka

Map showing various military infrastructure locations in Canada.
JTFN Forces

1 Canadian Ranger Patrol Group
(1 CRPG)
- 46 pers
- 1550 Rangers
- 57 communities

Junior Canadian Rangers (JCR)
- 1200 JCR
- 37 communities

440 (Transport) Sqn
- 50 pers
- 4 x Twin Otters

Regional Cadet Support Unit North (RCSU(N))
- 21 pers
- 460 cadets

Headquarters
- 47 pers
  - Det YT (3)
  - Det NU (4)

Area Support Unit North (ASU(N))
- 55 pers

1726 Personnel
- 104 Reg
- 42 Pres
- 1550 Rangers
- 30 Civ
Other CF Forces in the North

1 Cdn Air Div/CANR
- Wing Cold Lake deploys to FOL Inuvik

Chief Land Staff
- 41 CBG
  - Ex Sovereign Grizzly
  - Yellowknife
- CFLAWC
  - Advanced Winter Warfare Course
  - Yellowknife/Resolute

Chief Maritime Staff
- Participation in Operations NANOOK

3 Wing Bagotville deploys to FOL Iqaluit

Re-Supply to CFS Alert
Types of Military Operations

• Routine Ops
  - Re-supply of CFS Alert
  - NORAD Operations
  - Ranger Patrols
  - Junior Cdn Ranger Patrols and Cadets activities
Types of Military Operations

• Planned Operations
  – Army Trg
    • Reserve Exercises
    • Reg Force Specialist Courses

• JTFN Operations
  – NUNALIVUT (April)
  – NANOOK (August)
Types of Military Operations

• Contingency Operations - Safety and Security events
  • Environmental incident
  • Major Air Disasters
  • Flood/fire effecting remote community
Logistical Challenges to CF Northern Operations

- Long lines of communication
- Very limited infrastructure
- Evolving operations (changing priorities/locations)
- 14-18 months planning cycles
- Limited modes of transportation
- Limited availability of CF transport assets
- Must balance local economic benefits with draining local communities
Logistical Challenges to CF Northern Operations

- Long lines of communication
  - Forces generated from the south
    - Land elements from Edm, Toronto, Moncton
    - Naval units from Halifax
    - Air units from Trenton, Winnipeg, Greenwood, Borden
  - Movement of personnel AND equipment
  - Movement of essential commodities
    - Rations, fuel
Logistical Challenges to CF Northern Operations

- Very limited infrastructure
  - No place to store equipment
    - Limits warehousing of eqpt required regularly
    - Limits pre-positioning

- 14-18 months planning cycles
  - Qtys/types of eqpt and commodities change
  - Makes long lead times difficult
  - Limits transportation options – Sea Lift
Logistical Challenges to CF Northern Operations

• Limited modes of transportation
  – Rail ends at Hay River
    • is not in the equation
  – Road movements only to Whitehorse, Yellowknife
    • Ferry closures twice yearly
  – Sea lift
    • Lead times
    • Timing is difficult - ice

• Airlift is vital
Logistical Challenges to CF Northern Operations

- Limited availability of CF Air assets

- C-130 Herc fleet nearing end of service life
  - Still heavily tasked
  - C-130Js coming on line

- C-177 Globemaster
  - Heavily tasked - Afghanistan

- C-150 Airbus
  - Cannot land on gravel
Logistical Challenges to CF Northern Operations

- Must balance local economic benefits with draining local communities

- Why not buy everything locally rather than ship it in?
  
  Single sea lift per year
  Merchants will sell it to us but
  Leaves the shelves bare or drives up prices through the year
Mitigation – Some strategies

- Partnerships
  - Work with CF partners
  - Work with Other Government Departments
- Work with Industry
CF Partners

1 Cdn Air Div/CANR

Use of Inuvik and Iqaluit FOLs

Sea lift barreled POL with CFS Alert re-supply
Federal Partners
• **Airlift in the North**
  - 70% of all JTFN/1CRPG mobility is through contracted airlift
  - Full range of AC
    • Twin Otters for Ranger Instructor inserts and extracts
    • Dash 7s and 8s for recces/med lift
  - **NANOOK 10**
    • 3 x C-130 for movement of 30,000 kgs of rations
    • 3 x C-130s for movement of eqpt/pers
Working with Industry

- Contract for operational support – NANOOK 10
- 375 pers camp
  - Construction, operation, tear down
  - Water, sewage, garbage disposal
  - Ablutions
  - Electrical grid
- Mobile handling eqpt/services
- Vehicles
- Barge services
- Lease hangar as warehouse
Working with Industry

Contracted Camp, Resolute Bay NU
Developing Capabilities

• Cdn Operational Support Command
  – Hub and Spoke – 3 Hubs (Yk, Iqaluit, Resolute)
  – Pre-position eqpt - “camp in a can”
Nanisivik Arctic Berthing and Refueling
Developing Capabilities

Arctic Training Centre – Resolute
Include req for Warehouse space
Rapid Reaction Force

Recce Group: 12 hours NTM
Van Guard: 24 hours NTM
Main Body: 48 hours NTM
Developing Capabilities

- Evolution of Contracted Support
  - More Standing Offer Agreements
  - Design and Implementation of Task Authorization Contract
    - Guarantees contractor response
    - Build in rapid response (for a price)
    - Five (5) days response time
Developing Capabilities

CASARA (N)
Questions?
Northern Lights and National Dreams

A Presentation to the 6th Annual Supply Chain Conference: Northern Exposure

September 30, 2010

Stephen M. Van Dine
Associate Vice President
CanNor
Outline

This presentation provides an overview of:

– The North’s Land, People and Governance

– The drivers of the Northern economy

– Economic challenges and opportunities
The Land

• The North is big: the territories make up over 45% of Canada’s landmass and the majority of Canada’s coast line

• The geography and climate is highly varied and also unique. Over 40% of the North is above tree-line – the Barrenlands

Northern road system. Dotted red-lines are short season ice-roads.
The People

• 109,000 people live in the North (0.3% of the nation’s population)

• With First Nation, Inuit and Métis people comprising 53% of the population (Nunavut: 85%; Northwest Territories: 50%; Yukon: 25%) living in 83 communities scattered across the North.

• However, 44% of the population reside in the three territorial capitals (Whitehorse, Yellowknife and Iqaluit).

Aboriginal and non-Aboriginal Unemployment Rates (2006)

- Canada
- Yukon
- NWT
- Nunavut

[Bar chart showing unemployment rates for Canada, Yukon, NWT, and Nunavut for both Aboriginal and non-Aboriginal populations.]
The Governance

- Consensus government well established in the Northwest Territories and in Nunavut with party politics in the Yukon.

- Government of Canada has been supporting the development of responsible government in the North since before the creation of Saskatchewan and Alberta in 1905.

- Canada continues to ‘Nation Build’ through “devolution” of federal responsibilities to territorial governments, the negotiation of Aboriginal Self-Government and creation of Nunavut (1999).

- Land and resource management devolved in the Yukon and remains a priority for the governments of the Northwest Territories and Nunavut.

- Settled land claims cover most of the NWT and all of Nunavut, 11 of 14 First Nations in Yukon have self-government

- Co-management institutions are fundamental to land and resource management decisions in all three territories
Setting the Stage for Growth

• Settled land claims cover most of the territories

• Many First Nations have negotiated self-government arrangements

• Settled claims provide the context for economic development for Aboriginal people and Northerners alike

• Aboriginal people received lands, capital, resources, and a role in co-managed regulatory processes

• Settled claims provide increased certainty and clarity for development. Have the potential to support predictable decision-making systems for lands and resources

• Each claim includes important provisions for economic development and participation of Aboriginal people in the economy
Northern Challenge

The Numbers: Economic Challenges in the North

Diversification
• The Northern economy is largely dependent on the public sector and the natural resources sector. This lack of diversification leads to economic vulnerability
• Diversification opportunities exist in the territories and there is great potential for growth in tourism, cultural industries, transportation, and fisheries
• The traditional economy plays a critical role in many communities, but our understanding is limited

Attracting Investment
• Northern regulatory processes are unique and can lead to avoidance of the region by investors
• Limited community and economic infrastructure can hinder growth and investment or drive-up the costs of doing business
• Gaps in foundational community economic development can be a hindrance to development

Territorial Real GDP by Sector 2008

Global Investment Climate for Petroleum Development: 2009 Survey

Fraser Institute company survey
The Numbers: Economic Challenges in the North

**Skills**
- The Northern workforce faces deep skills deficits, particularly for Aboriginal people.
- These skills deficits could compromise economic development as competition for skilled workers grows nation-wide.
- Also, importing workers from outside of the North drives-up the cost of business and also has an upward impact on wages nationally.

**Entrepreneurial Capacity**
- Gaps in entrepreneurial and organizational capacity also present a problem for Northern economic development and strengthening communities.
- Many Northerners do not realize that they can create their own jobs and jobs for others through entrepreneurship – youth and women in particular.
- Many Northerners lack the skills in financial management to manage money or build a business.
The Numbers: Economic Opportunity in the North

**Natural Resources**
- Canada’s North is one of the most prospective regions in the world for mineral, oil, and gas development
- Investment in natural resource development is rebounding in the North, despite the worldwide economic downturn

**Diversification Opportunities**
- A number of emerging sectors demonstrate promise for regional and community economic diversification

**Northern and Aboriginal Businesses**
- The Aboriginal business community in the North is increasingly strong and sophisticated – existing businesses can be strengthened with good impact
- Comprehensive land claims and First Nations self-government provide a platform for economic and community development
- Northerners and northern businesses have a long history of partnership and joint ventures
The Growth Opportunities

- Canada’s territories have some of the most significant natural resources deposits and reserves in the world
- Deposits range from base metals, to diamonds, to rare earth elements
- Some deposits are isolated, but many are located near transportation routes
- Aboriginal people and Aboriginal businesses are key partners in exploitation
- Important linkages exist between the North and regional economies in Southern Canada

However significant challenges remain in regulatory matters, logistics, training and capacity and infrastructure combine to make natural resource development costly in the North
Canada’s North is a fundamental part of Canada. It is part of our heritage, our future and our identity.

The Government has a vision for a new North and is taking action to ensure that vision comes to life – for the benefit of all Canadians.

To meet the challenges and opportunities of a changing North, the Government has established an integrated Northern Strategy and is taking concrete action in four priority areas:

- Exercising our Arctic sovereignty
- Promoting social and economic development
- Protecting our environmental heritage
- Improving and devolving Northern governance

World-leading Arctic science and technology underpin the Northern Strategy and help ensure sound decision-making.

The Government is committed to helping the North realize its true potential as a healthy, prosperous and secure region within a strong and sovereign Canada.
One of the key priorities of our government’s Northern Strategy is to ensure a **stronger, more dynamic economy for Northern families and businesses**. There is no better way to ensure a brighter future for our North than by directly **empowering Northern workers and businesses** to take advantage of the resources and opportunities that exist right here at home.

The Canadian Northern Economic Development Agency will consolidate Northern economic development programs, **bolster economic growth in Aboriginal communities**, select and coordinate **critical infrastructure** projects, and help the region's communities **adjust to changing economic and environmental conditions**.

With the creation of CanNor, our Government wants to **empower Northerners** and ensure that this region's unique challenges are addressed with input from those right here with their boots on the ground.

- Prime Minister Stephen Harper, Iqaluit, August 18, 2009
Our Government also believes in the **power of partnerships** to get things done throughout Canada’s North. We need to continue to take concrete action to **unleash the human and economic potential of the North**, and to ensure our valuable Northern resources benefit the next generations to come.

- Minister for CanNor, Chuck Strahl, Whitehorse, March 10, 2010

Strong communities are founded on three key elements: **sustainable economic growth, modern infrastructure** — and on **good community government**...Our government is very proud to be creating a northern economic development agency for Canada’s North because we **understand the unique nature of economic development in this region**.

- John Duncan, Parliamentary Secretary (INAC / CanNor), Watson Lake, April 21, 2009
CanNor's Added Value

Unique Economic Lever and Vision
• CanNor is often one of the first investors in new projects. The Agency's investments attract private and public sector dollars that then build Northern economies. Being involved with many economic development opportunities at the point where they are ideas being tested for feasibility provides the Agency with a unique advance perspective on how and where the Northern economy will evolve.

Strategic Partner
• CanNor convenes key players around critical economic issues. Its role as the only federal department headquartered in the Arctic provides the Agency with the networks and the credibility needed to bring together diverse interests, including Aboriginal organizations and governments, to respond to Northern challenges.

Federal Coordination
• CanNor has powerful levers for federal coordination, including the Northern Projects Management Office. By coordinating federal interests, CanNor helps to yield maximum return on federal government investments across the Arctic.
CanNor’s Programs

• The **Strategic Investments in Northern Economic Development (SINED)** initiative is CanNor is also the Northern lead for implementing Canada’s **Economic Action Plan**
  – The **Recreational Infrastructure Canada Program** is a national fund that is investing $500 million in recreational facilities across Canada over a two-year period
  – The Community Adjustment Fund is providing $1 billion over two years to address the short-term economic needs of Canadian communities impacted by the global recession

• Delivery agent for key federal programs in the North
  – INAC Aboriginal economic development programs
  – Infrastructure Canada programs
  – Close collaboration with Human Resources Development Canada

• The Northern Project Management Office provides information and guidance to project proponents, co-ordinates the work of the federal government during the regulatory process, and maintains the official record for Crown consultations on projects in its portfolio.
Today, northern infrastructure remains underdeveloped. Heavy reliance on air transport and diesel generated power. Introduction of satellite transmissions and the internet, however, has vastly improved communications.
Growing International Interest

- Around 13 percent of the world's undiscovered oil and 30 percent of its undiscovered gas lies under the Arctic seabed
  - July 2008 study by U.S. Geological Survey

- Increasing foreign interest and investment in Northern natural resources, Northern transportation, and Northern sovereignty

- Players in the Canadian Arctic:
  - China
  - United States
  - United Kingdom
  - Germany
  - France
Exciting possibilities are on horizon for the North in areas of renewable energy supply, broadband connectivity, transportation enabling development, and harbour construction promoting the northern fishery.
Conclusion

• All eyes are looking North and the race is not a domestic one but a global one.

• The Government of Canada demonstrating leadership through its Northern Strategy and Foreign Policy.

• CanNor is uniquely positioned to leverage, focus and integrate economic interests in the North.

“Canada a world 'superpower' in waiting -- A top U.S. Geographer says Canada will emerge as a major world power within 40 years as part of a climate driven transformation of global trade, agriculture and geopolitics highlighted by the rise of the "Northern Rim" nations.

By the year 2050 Canada could be enjoying newfound status as a global superpower blessed with a developed north, plenty of fresh water, a growing population and new shipping lanes through the Arctic.”

The World in 2050 – Four Forces Shaping Civilizations Northern Future, By Laurence C. Smithy