

Worldwide specialists in heavy lifting and transport



MAMMOET



**northern transportation
company limited**



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CANADA'S ARCTIC GATEWAY

**Arctic Logistics
Calgary, Alberta**

Presented by: David Foster, NTCL





Mammoet

- Mammoet
 - Dutch founded Organization
 - Global reputation for successfully completing complex projects
 - Operations in approximately 90 locations/50 countries
- Specialize in industrial heavy-lifting and multi-modal transportation
- Completed previous projects in similar environments (e.g. from the Philippines to Alaska)





Mammoet

- Globally recognized for full services from factory-to-foundation
- Executing/managing intercontinental transport and installation of heavy items on new developments and existing sites
- Capacity to provide customized engineering solutions
- Received the Best Safety Performer award from WORKSAFE ALBERTA two years in a row







Northern Transportation Company Ltd.

NTCL

- Part of the NorTerra group of companies
 - 100% Aboriginal ownership
 - Established in 1934 voyage sailed from Fort McMurray to Aklavik.
 - Operated in the Arctic for 50 years.
 - Offices/terminals across the North and eastern Canada.
- Specialize in Marine transportation throughout the arctic and shallow water river systems of the North
 - Demonstrated Capabilities within the Arctic, Mackenzie River, Slave and Athabasca rivers





Northern Transportation Company Ltd.

- Fleet of 11 mainline tugs, over 90 barges and 2 Arctic Class II supply ships, capable of anchor handling and towing in Arctic and International waters
- Significant infrastructure throughout the North
- Completed a trip similar to the one contemplated by this project in the summer of 2006
- Re-establishing a historic route







Arctic Gateway

- East & West Options
- Staging Areas
- Arctic Window 5 – 6 Weeks
- 4 Stages
 - Trans Pacific/Trans Atlantic
 - Tuktoyaktuk to Fort Smith
 - Fort Smith to Fort Fitzgerald
 - Fort Fitzgerald to Client Site





Asia to Dutch Harbour

- First stage of route is open year-round
- Modules loaded on barges in Asia
- Modules loaded onto barges (towed by ocean-going tugs) for crossing to Dutch Harbour
- Barges stand by at Dutch Harbour while waiting for Point Barrow to clear of ice)





Dutch Harbour to Mackenzie River Delta

- Route is open August 1 to October 1
- Barges are towed around Point Barrow once ice clears
- Ocean-going tugs are changed for river-going tugs before going up the Mackenzie River





Mackenzie River Delta to Fort Smith

- Stage two of the route is open May 15 to October 15
- Barges are towed by river tugs up the Mackenzie and Slave Rivers



Barge in the shallow Ramparts



Slave River at Fort Smith



Fort Smith to Fort Fitzgerald

- Phase three. Portage from Bell Rock to Fort Fitzgerald on self-propelled modular trailers or hydraulic pull-type trailers





Fort Fitzgerald to Fort McMurray

- Stage four is open May 15 to October 15



DARGAS

Athabasca River delta at Lake Athabasca (looking south)





Commercial Prospects

- Significant interest by owners in the oil sand business
- Potential to reduce lead time
- Access to fabrication facilities on a global scale, Asia as well as Europe
- Solutions currently engineered up to 2000 metric ton





Business Pursuing Opportunities in the North

- Establishing a North to South marine route
 - Increases dimensional shipping envelope
- Establishing large volume delivery routes via Arctic Gateway
 - Facilitates lower transportation costs
 - Assists viability of projects in Northern regions
 - Provides an alternate delivery route to winter roads





Specialized Load Transport

- We are working with a transportation envelope in which dimensions, length, width and height including centre of gravity as well as weight have been determined
- By adding axle lines axle weights can be reduced to accommodate requirements of the road





Capacity of Available Equipment

- Engineered a 2000 tonne module move
 - Limitation relates to water depth
 - Requires specialized equipment
- Capacity of existing equipment – 1200 tonnes.
- Volume relates to size/weight and potential of over-wintering.





Risk Attached to the Arctic Gateway

- Low water levels
 - Mitigated through:
 - Introduction of draft reducing technologies.
 - Seasonality
- Heavy ice around Point Barrow or through the Northwest Passage
 - Mitigated through:
 - Shallow draft ocean barges – remain grounded ice.
 - Ice Breaker support



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QUESTIONS ?



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