# Steensby Port

# QIA and BIM Executive Meeting

Aug 31 – Sept 1, 2011

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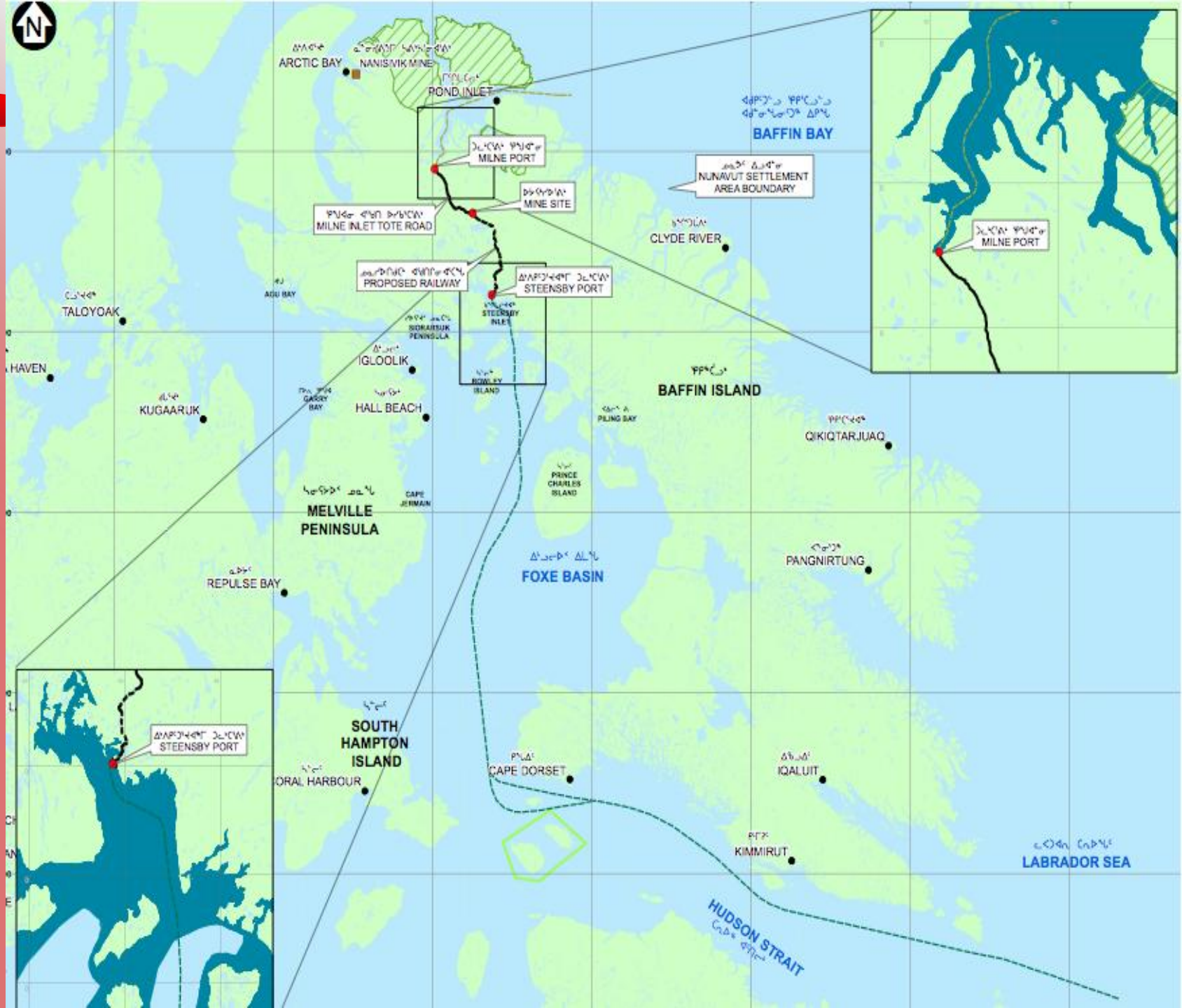
# Project Location



# Project Areas

# Port Location Assessment

Choosing a location for a port was based on two fundamental factors:

- accessible to cape sized vessels year round
- minimal rail distance from mine (reducing train transport, potential environmental impacts, technical challenges and cost)

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# Locations Assessed

Locations considered in the assessment were grouped as follows:

- East Coast Locations
- Milne
- West Coast – including Nanisivik
- Steensby
- Nuvuit
- Iqaluit

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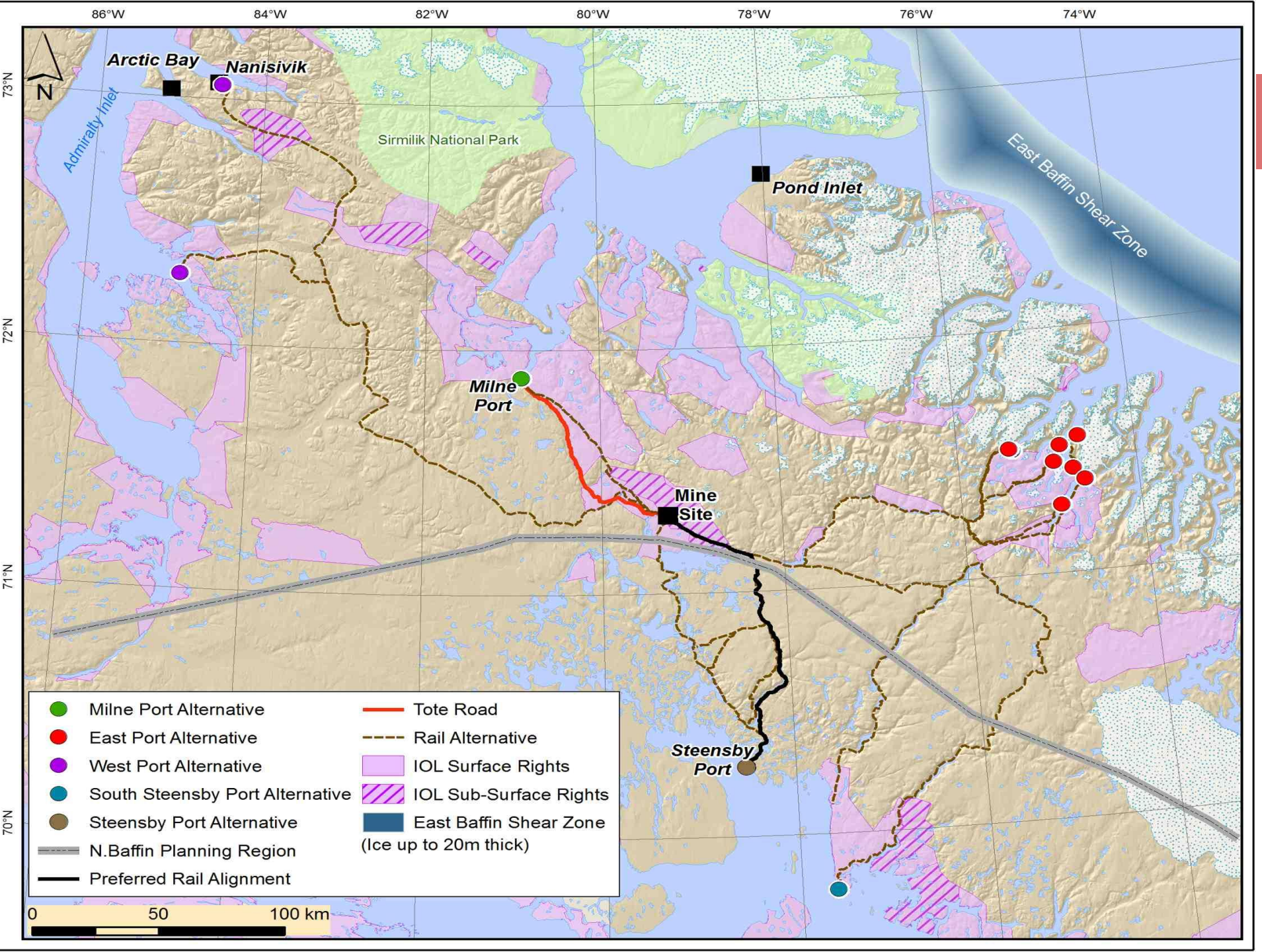
86°W
84°W
82°W
80°W
78°W
76°W
74°W
73°N
72°N
71°N
70°N
N
Arctic Bay
Nanisivik
Admiralty Inlet
Sirmilik National Park
Pond Inlet
East Baffin Shear Zone
Milne Port
Mine Site
Steensby Port
Milne Port Alternative
East Port Alternative
West Port Alternative
South Steensby Port Alternative
Steensby Port Alternative
N.Baffin Planning Region
Preferred Rail Alignment
Tote Road
Rail Alternative
IOL Surface Rights
IOL Sub-Surface Rights
East Baffin Shear Zone
(Ice up to 20m thick)
0
50
100 km

# Overview

- The evaluation done in accordance with the NIRB EIS guidelines, determined that Steensby Port is essential based on evaluation of:
  - Technical feasibility
  - Environmental criteria
  - Economic viability

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# Technical Advantage – Steensby Port

Deep water, suitable grades and space for infrastructure

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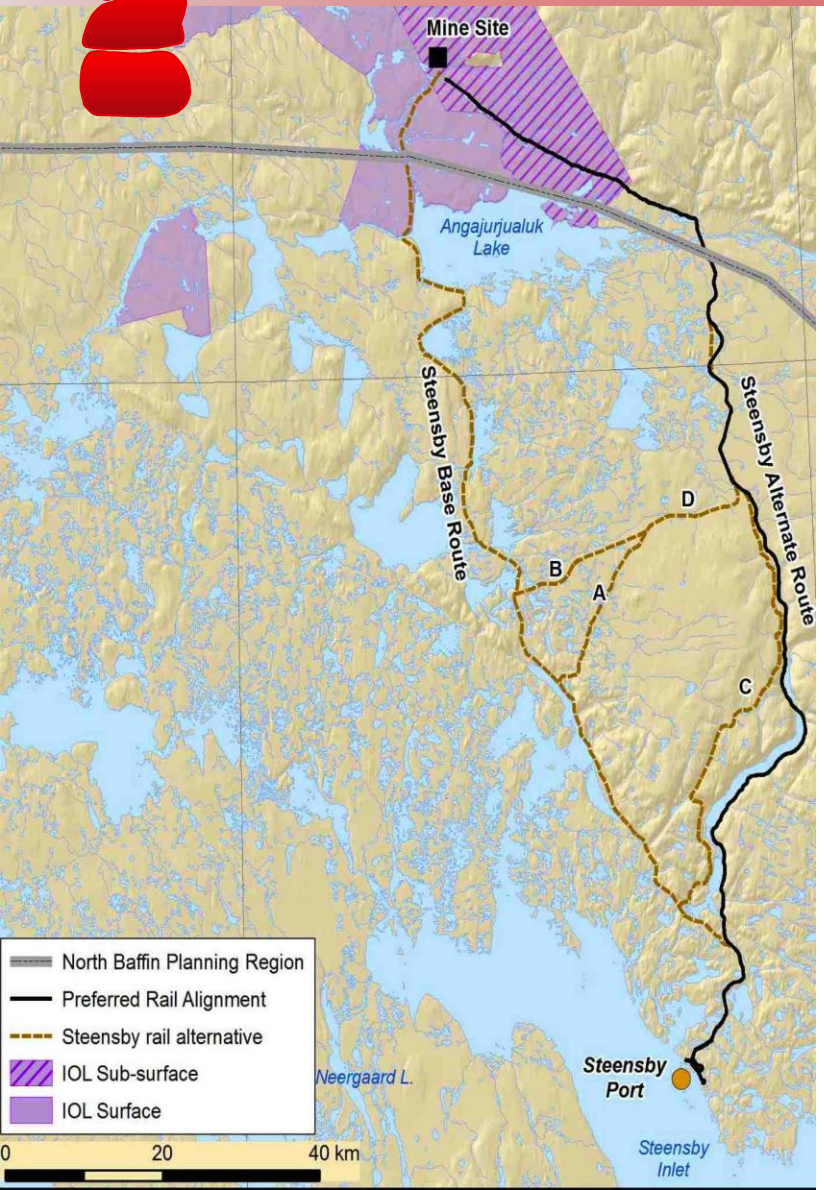
# Technical Advantage – Steensby Rail




- Distance to Steensby is 150km, less than half the distance to Nuvuit
- Several alternates to Steensby considered

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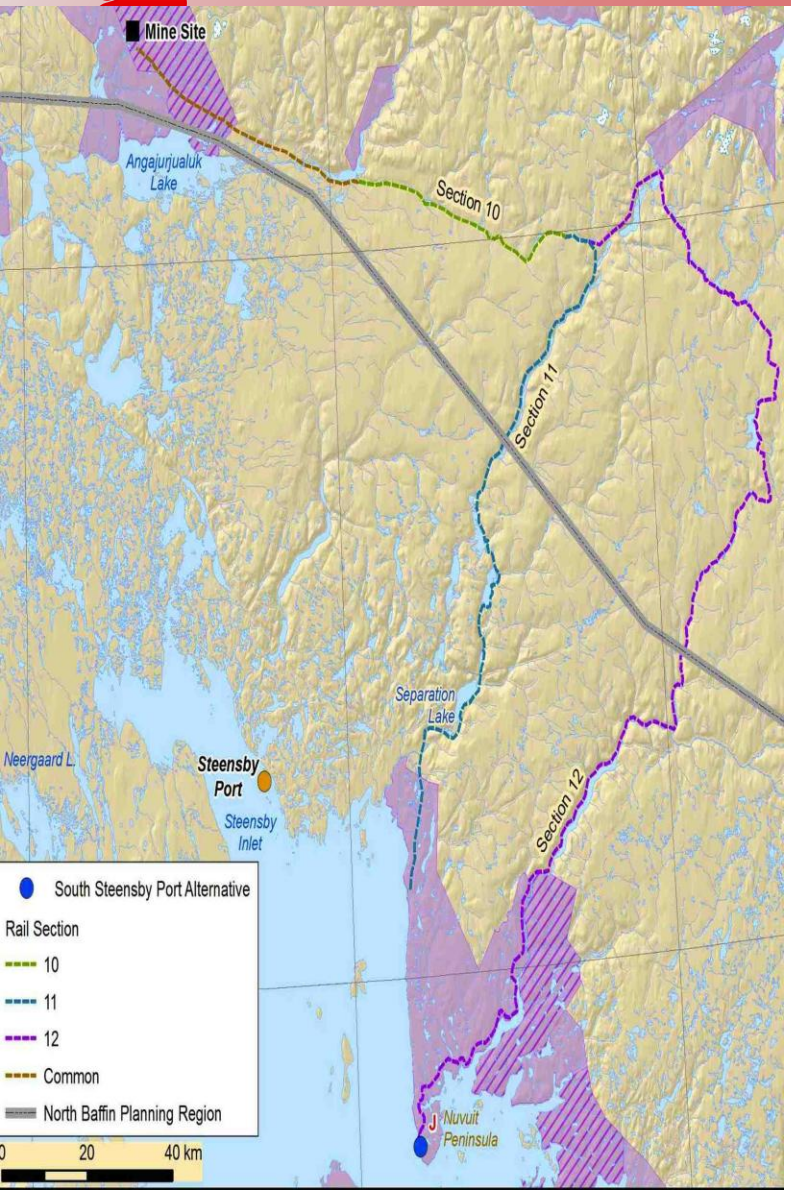
# Technical Disadvantage - Nuvuit




Construction challenges:

- unstable ground
- Additional facilities and airstrip mid rail
- stream crossings
- rock cuts, bridges, tunnels
- 2 more years to construct – safety, cost
- Shallow water (government depth readings)

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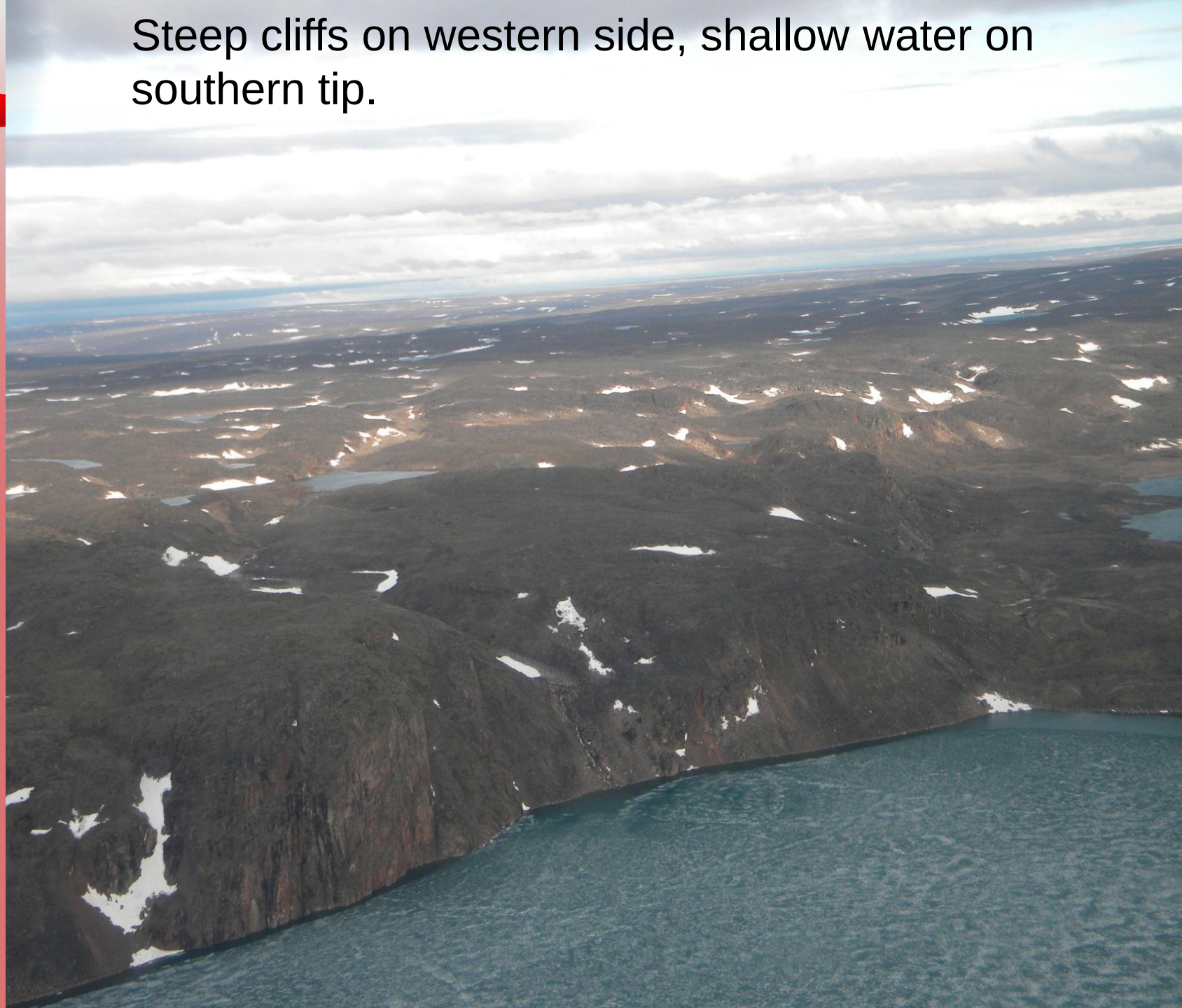
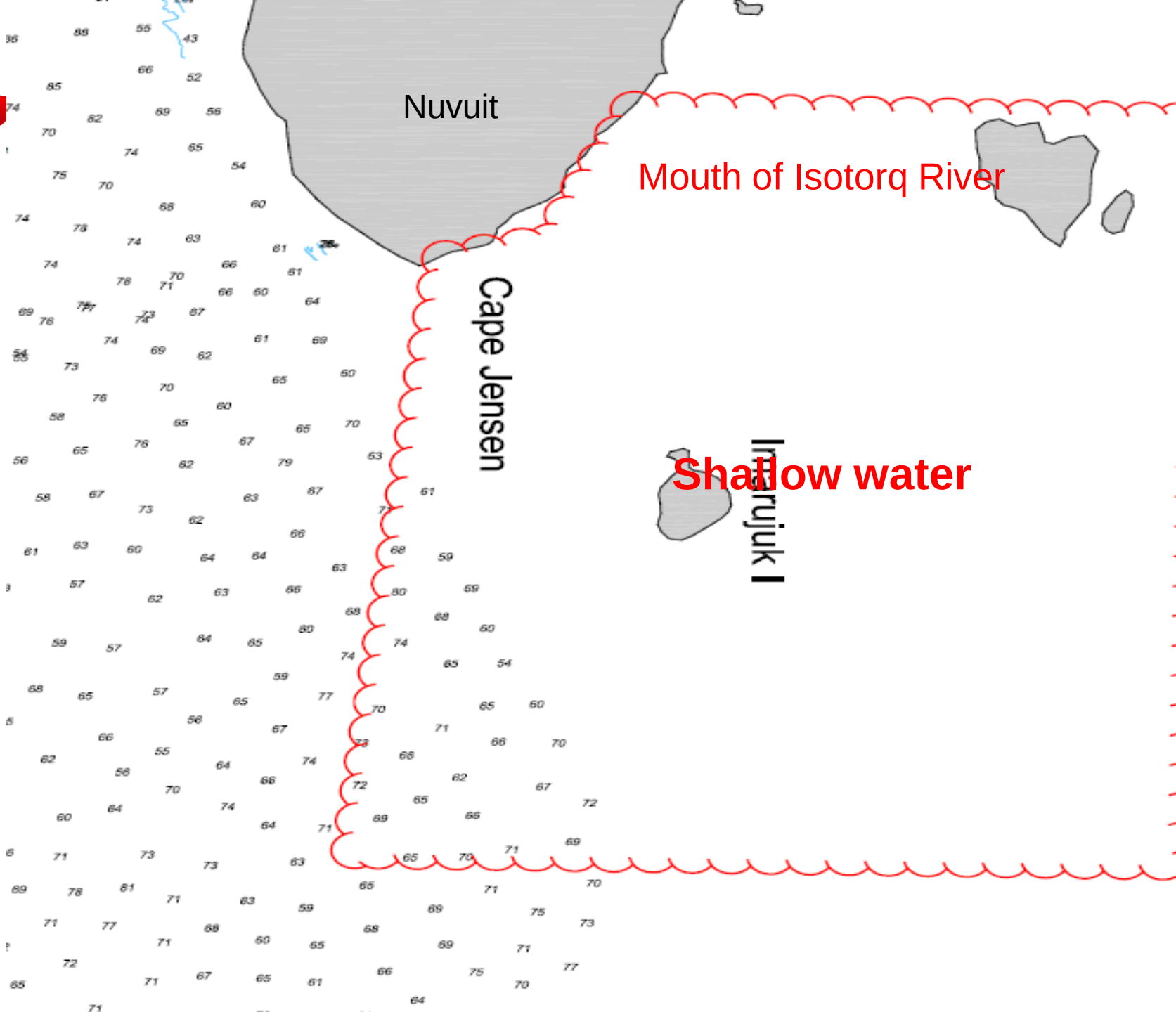
Nuvuit - Port Area

Steep cliffs on western side, shallow water on southern tip.



# Nuvuit - Water Conditions



# Technical Advantages of Steensby

- Reduced environmental footprint of rail(i.e. fewer stream crossings, quarries and less effect on caribou movement)
- Reduced marine footprint with dock structures
- Operable railway (decreased risk)
- Cost effectiveness

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# Economic Viability

- Economic viability is a requirement of any development
- A definitive feasibility study in 2008 determined the cost of the Project to be $4.1 billion
- Construction schedule is driven by time to construct the railway
- Higher Project cost + increased time for construction = Unfavorable Project

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# Economic Viability

- A railway of 325 km to Nuvuit will increase building costs by $1 billion
- 2 years more to construct greatly reduces the attractiveness of the Project being developed
- Operating and maintenance costs are more than double (i.e. 7 trains instead of 3)

• Economic factors of a rail link to Nuvuit make the alternative unviable.

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# Economic Conclusions

- Project capital and operating costs can not support a rail route to Nuvuit
- A larger dock structure would be needed to reach deep water further increasing cost
- These realities must be understood in the overall assessment of environmental and socio-economic effects

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# Rail Operations

Rail operations to Steensby are preferred:

- Trains travelling to Nuvuit cover twice the distance – requiring 7 trains instead of 3
- 3 train meets/day with Steensby compared to 29 train meets/day along the route to Nuvuit – more footprint
- More trains, rail spurs, signaling and operational safety concerns with Nuvuit

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# Rail Operations

From an environmental standpoint:

- Risk of accidental release or collision increases on rail route to Nuvuit
- Fuel consumption of trains increases by 14-15 million liters per year – carbon footprint
- Steensby route has lower impact and is more safe.

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# Marine Environment - Overview

- Loss of marine seabed would be greater at Nuvuit - dock extending to deeper water
- Baffinland is committed to mitigation and monitoring to ensure Inuit lifestyles and values are protected

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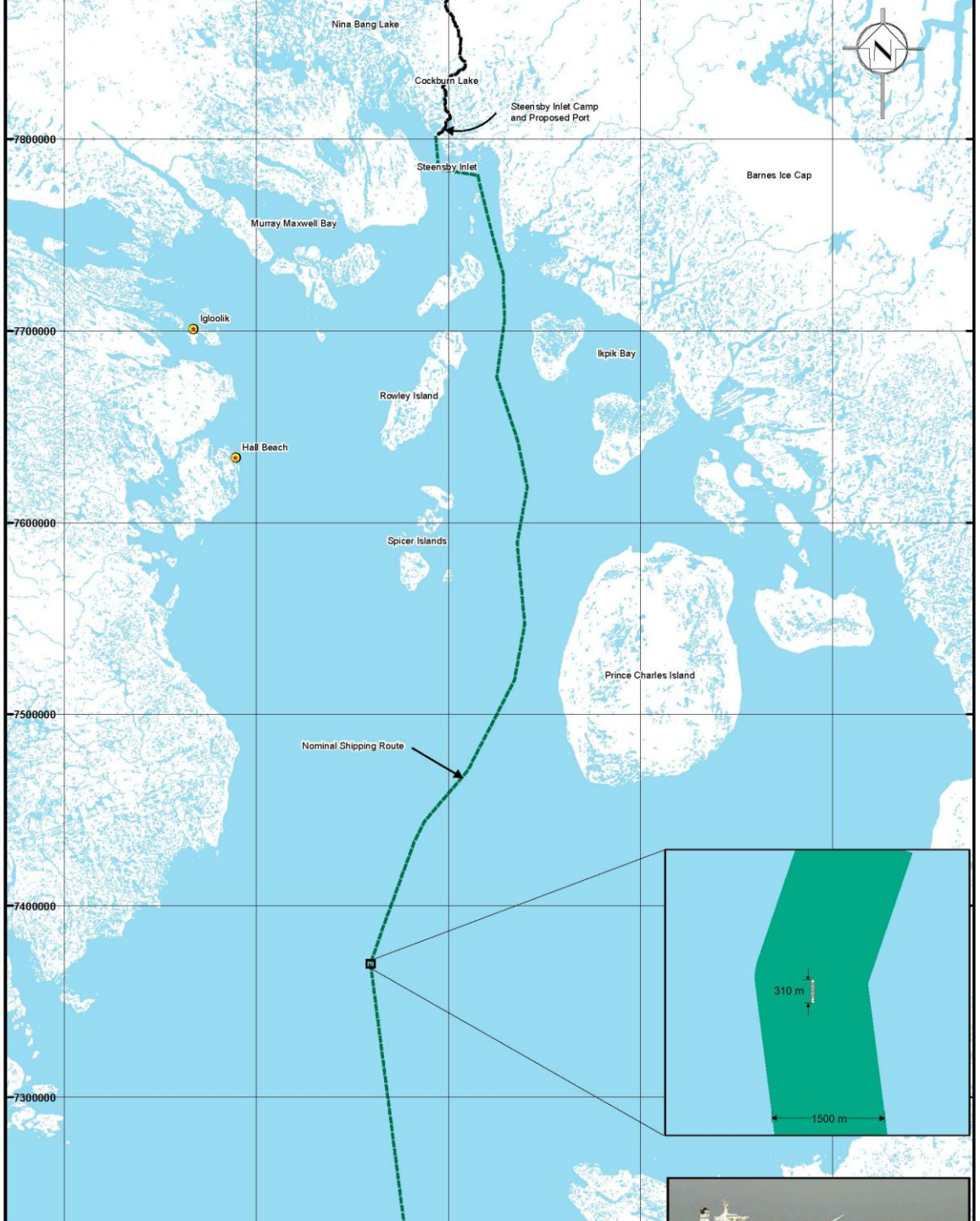
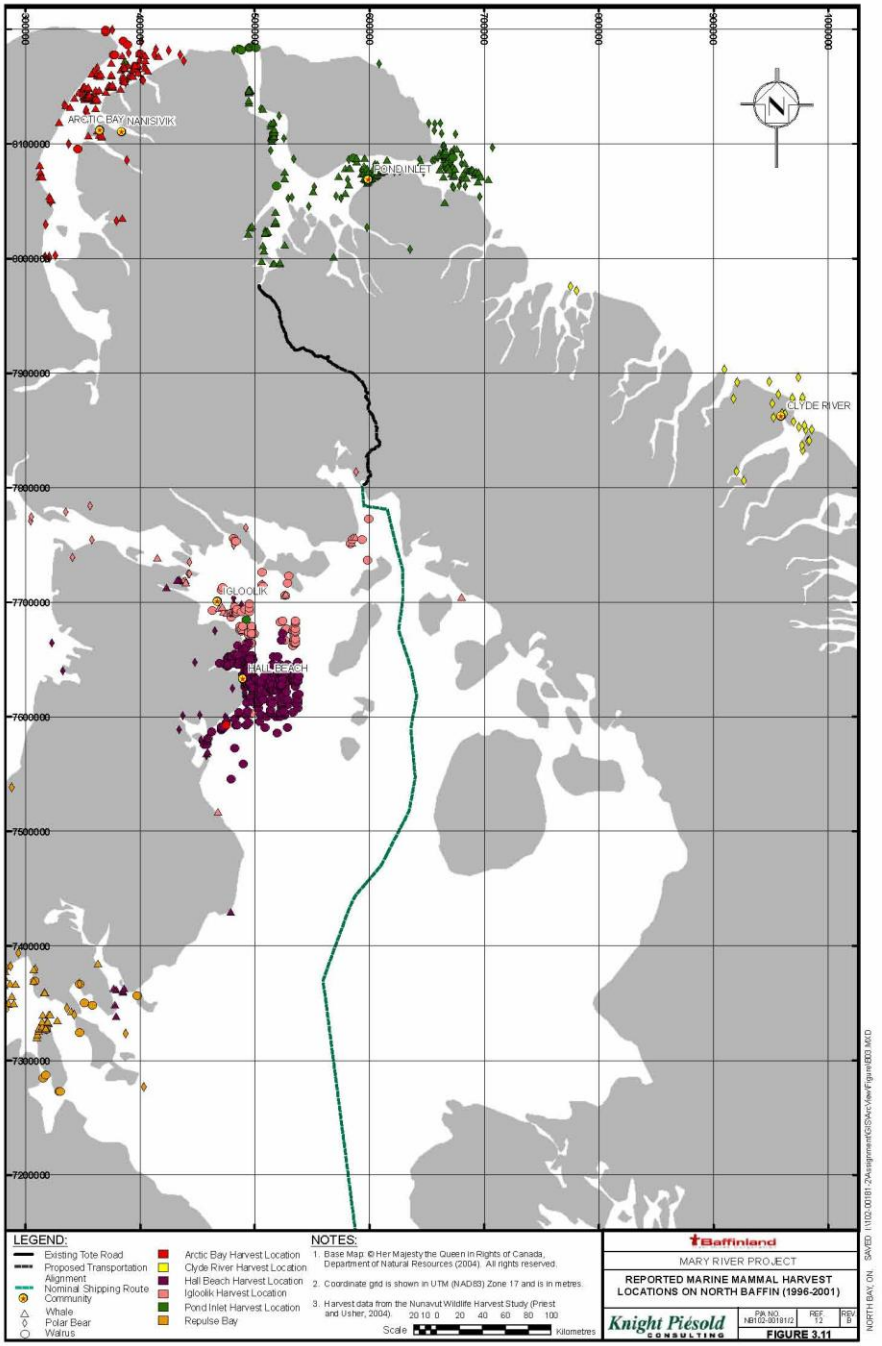
# Shipping Route



Inuit Harvesting




# Interactions with Inuit Marine Harvesting

## Reported Harvest Locations

From:

Nunavut Wildlife Harvest Study

(1996-2001)

LEGEND:

- Existing Tote Road
- Proposed Transportation Alignment
- Nominal Shipping Route
- Community
- Whale
- Polar Bear
- Walrus
- Arctic Bay Harvest Location
- Clyde River Harvest Location
- Hall Beach Harvest Location
- Igloolik Harvest Location
- Pond Inlet Harvest Location
- Repulse Bay

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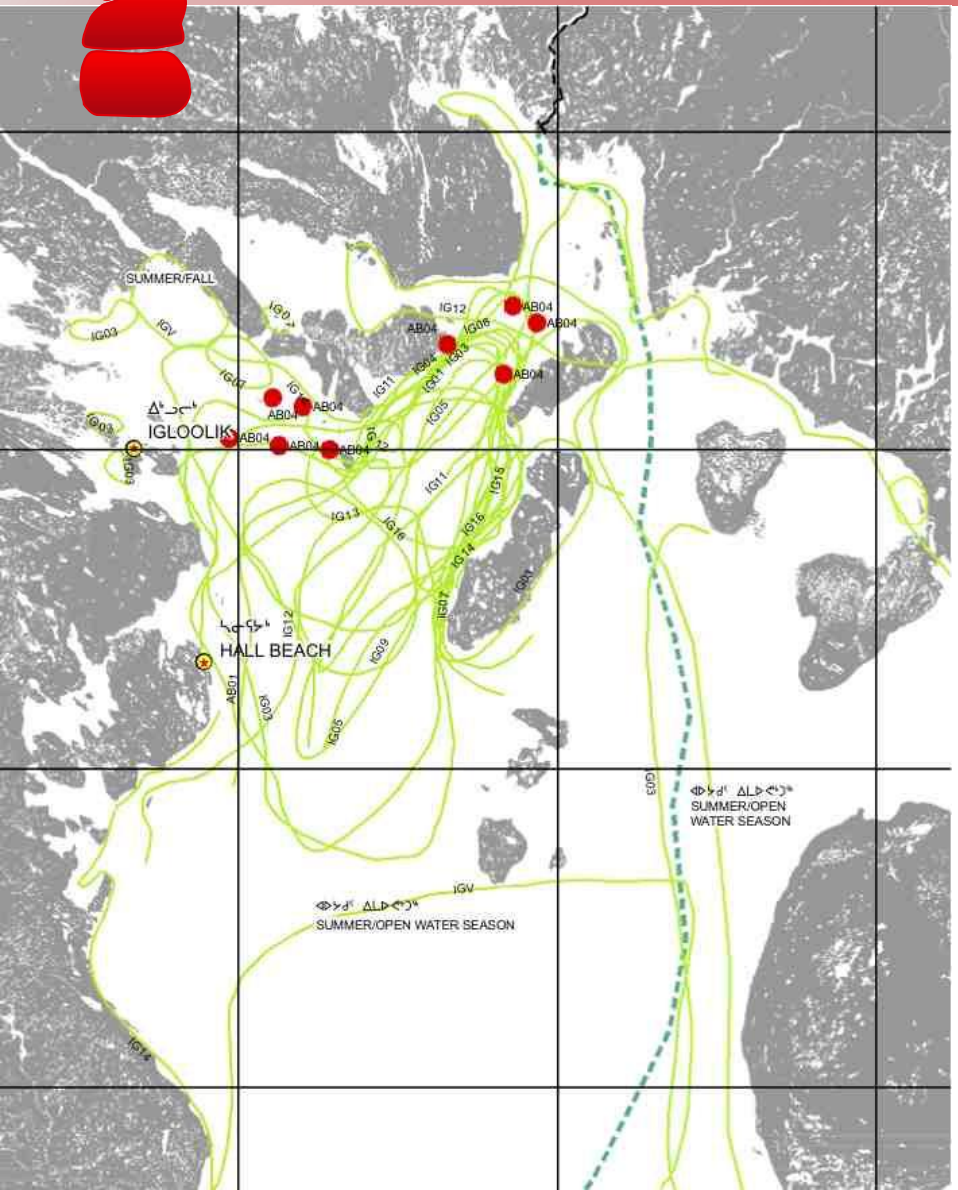
# Inuit Knowledge - Walrus




- Based on the IQ study, the eastern route avoids a number of important walrus calving areas, and other areas where walrus were identified to be found and harvested.

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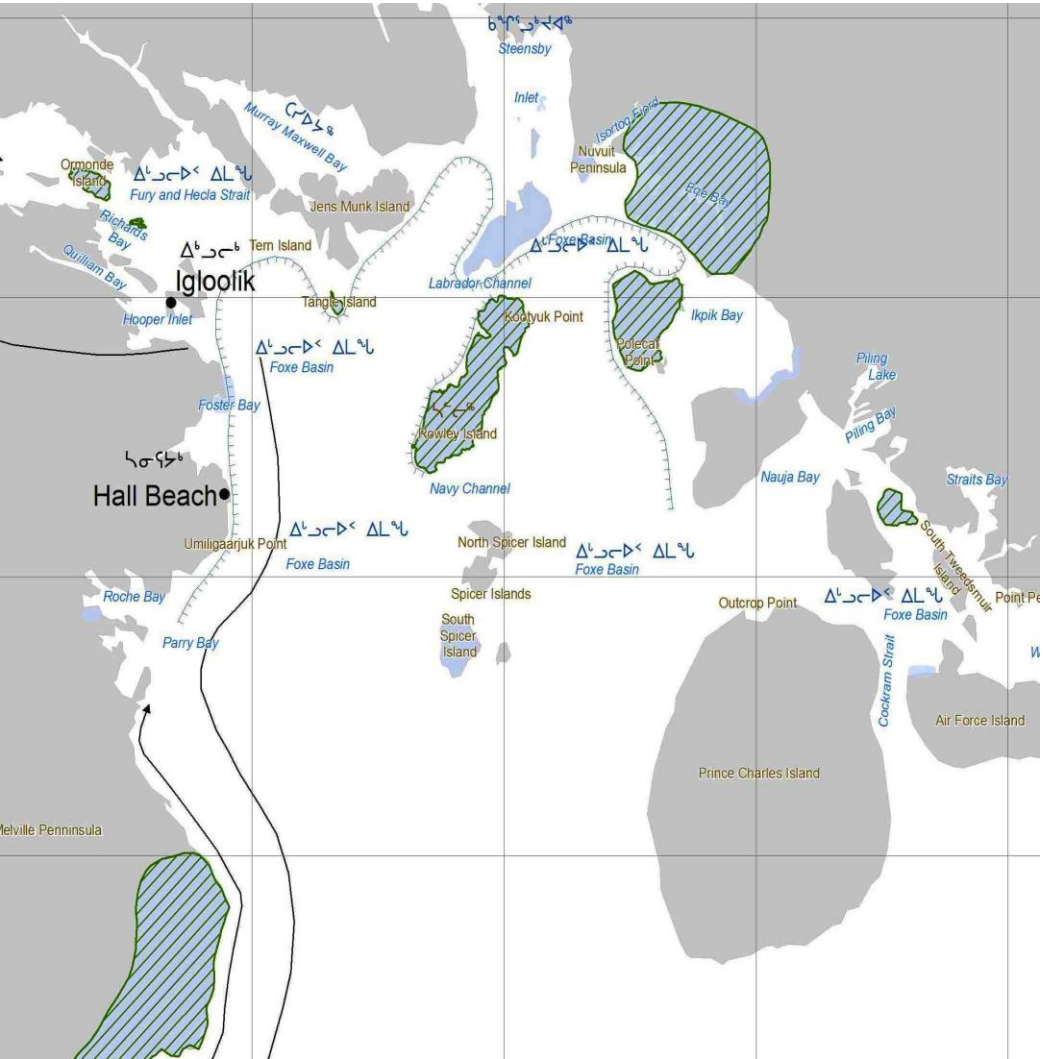
# Inuit Knowledge – Polar Bear




- Based on IQ from workshops hosted in Igloolik and Hall Beach, Steensby Port and associated activities are further removed from polar bear denning areas.

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# Inuit Knowledge – Beluga Whale


- Based on IQ from workshops hosted in Igloolik and Hall Beach, known concentrations of beluga whales are in closer proximity to the Nuvuit location

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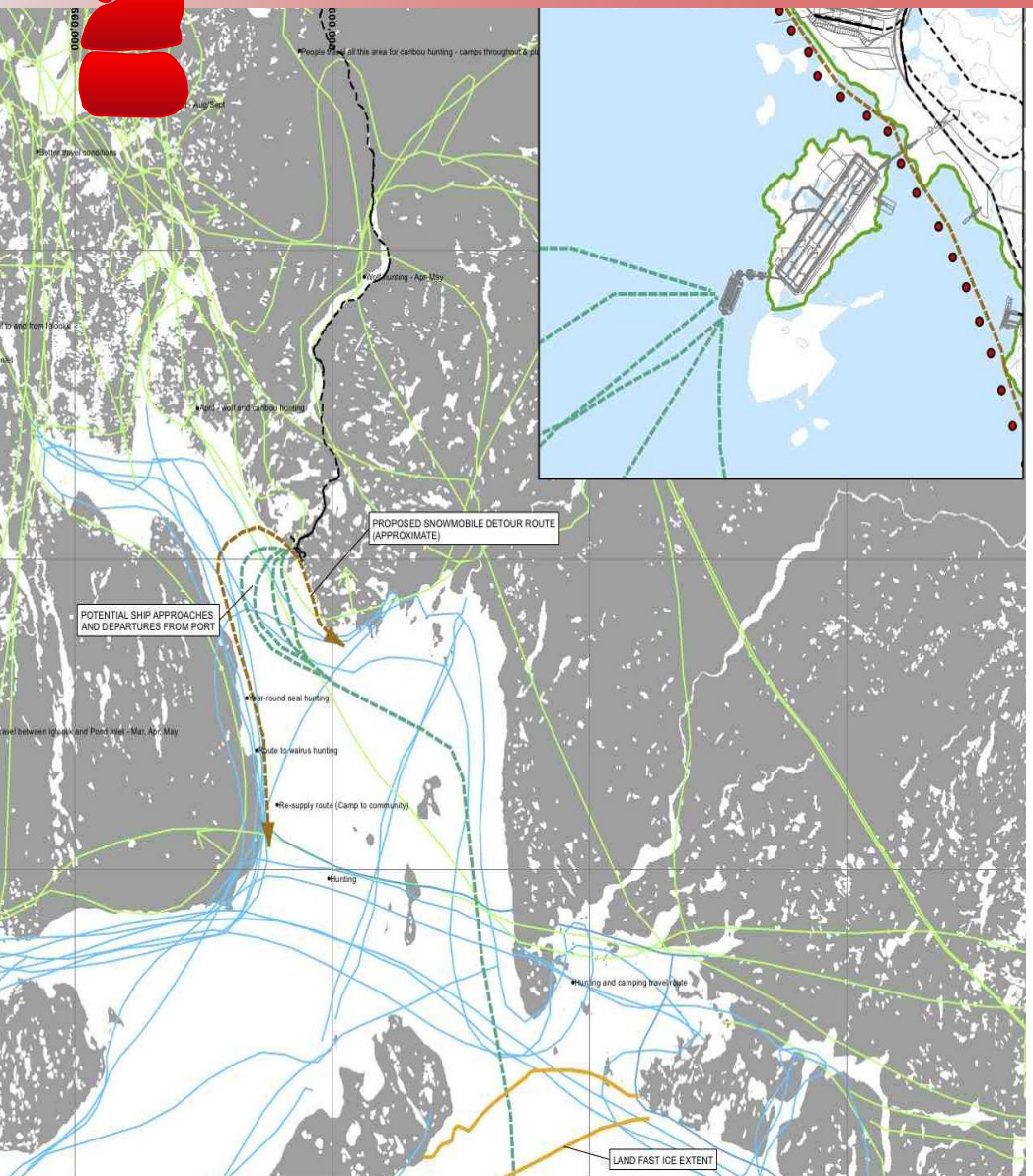
# Routing through Steensby Port




- Route through Steensby Port to avoid ship track
- Compensation to persons will be provided at Steensby Port
  - Fuel
  - Food
  - Accommodation
- Specifics on compensation to be negotiated

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# Ship Track

- The ship track is only slightly wider than the ship (53 meters)
- Ship track closes behind vessel and freezes quickly
- DEIS assessed potential impacts of ice breaking on marine mammals
  - Area of impact is negligible (< 1% of landfast area)
  - DEIS assessment concluded that no significant residual effects on marine life are expected

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# Ship Tracks through Landfast Ice

- Ship track is approximate width of ship
- Ice quickly moves to close track

# Mitigation and Monitoring

- Baffinland is committed to mitigation and monitoring to ensure no residual impacts to marine mammals
- Inuit land use (cultural, harvesting, travel and camps) will be maintained through ongoing engagement, mitigation and monitoring

# Mitigation and Monitoring

- Modern ship design is expected to reduce noise output
- Ore carriers will transit along a previously disturbed section of landfast ice to the extent possible, particularly during the ringed seal pupping period
- Inuit Advisors/Monitors will be able to be onboard ore carriers

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# Conclusions

- Based on evaluation of technical, economic and environmental criteria, Steensby Port is an essential feature of the proposed Project
- DEIS predicts no significant residual effects for the Project
- Baffinland is committed to ongoing discussions to work together to develop appropriate mitigation and monitoring to ensure Inuit livelihood and wildlife is preserved

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**Qujannamiik**

**Thank You**

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