

The Alliance – Fairbanks, Alaska
October 4, 2018

Alaska and Arctic investment



Mead Treadwell

Lt. Governor of Alaska, 2010-2014

Chair and Commissioner, U.S. Arctic Research Commission, 2001-2010

Recent relevant anniversaries

- KAL 007, September 1, 1983
- "Friendship Flight" to Provideniya, 1988
- September 11, 2001 Terrorist Attacks
- Permanent Fund Dividend paid today

The Arctic...



- Feeds the world
- Fuels the world
- Provisions the world
- Protects the world
- Connects the world
- Inspires the world

Alaska's Arctic Agenda 2018

- A safe, secure, reliable Arctic Ocean
- LNG, rail, shipping service opportunities worth billions to Alaska's economy
- Food, Energy and mineral production as economics, climate, geopolitics change
- Global Inspiration: tourism, exploration

Relevant headlines

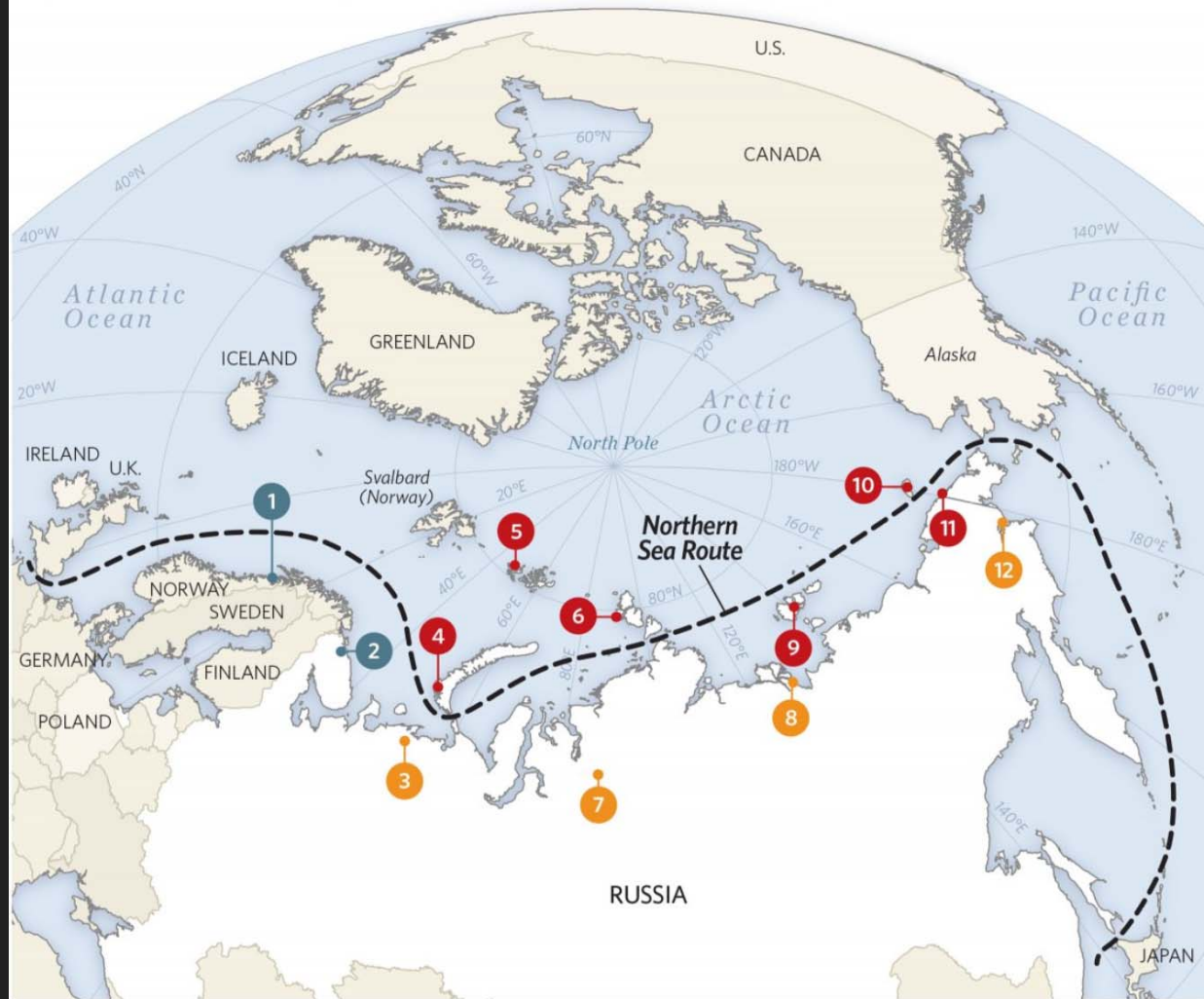
- Cold War thaw began with a “friendship flight” over Bering Strait ADN: 11.3.2013
- “The Damn Thing Melted,” quoting Navy Secretary Richard Spencer
<https://www.newsecuritybeat.org/2018/04/the-damn-melted-arctic-security-blue-water-era/>

Relevant headlines

- How a potential Chinese-built airport in Greenland could be risky for a vital US Air Force Base Defense News, 9.7.2018
- To Counter China, US Plans to Invest More Overseas Wall Street Journal, 9.10.2018

Russia Fortifying Bases in Arctic Region

● Key regional headquarters
 ● Confirmed bases Russia is building/upgrading
 ● Bases Russia may upgrade



Key Locations

- | | |
|---|--|
| 1 Bodø, Norway's National Joint Headquarters | 6 Sredny Ostrov |
| 7 Alykel | 8 Tiksi |
| 2 Severomorsk, home of Russia's Northern Fleet | 9 Temp |
| 3 Naryan-Mar | 10 Zvyozdny |
| 4 Rogachevo | 11 Mys Shmidta |
| 5 Nagurskoye | 12 Ugolny |

Source: Heritage Foundation research.

Relevant headlines

- China just received its first LNG shipment to arrive directly from the Russian Arctic by ship Arctic Today, July 20, 2018

Yamal LNG Project launched 12.8.2017



- *Project is JV between Novatek (60%), Total (20%) and CNPC (20%)*
- *Three 5.5 million metric tons per annum LNG Trains. Start-up 2017. Capex \$18.4 bn.*
- *Yamal decided to dredge channel rather than build jetty offshore in deep water*
- *Terminal basin has a warm water and air bubbling system (BIMS) to control ice formation*

Confidential Information proprietary to D.G.Clarke

Yamal LNG Export Routes to Far East



Confidential Information proprietary to D.G.Clarke

Russian Register Arc7 ice-class standard Dual Acting LNG Vessel for Yamal LNG Project



- *Equivalent to a level between Polar Classes 3 and 4*

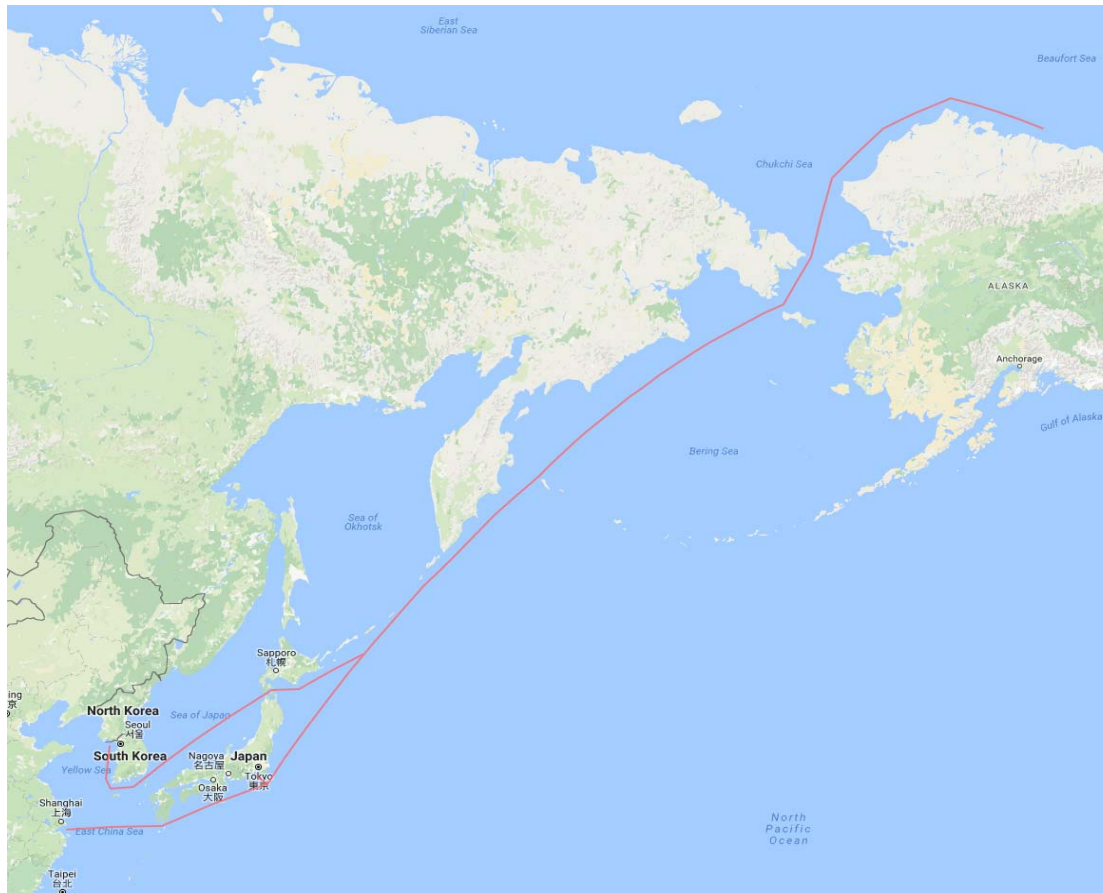


Icebreaking LNG Tanker docks at Sabetta



The Christophe de Margerie, an ice-class tanker fitted out to transport liquefied natural gas, is docked in Arctic port of Sabetta, Yamalo-Nenets district, Russia March 30, 2017. (Olesya Astakhova / Reuters)

North American LNG, Direct to Asia?



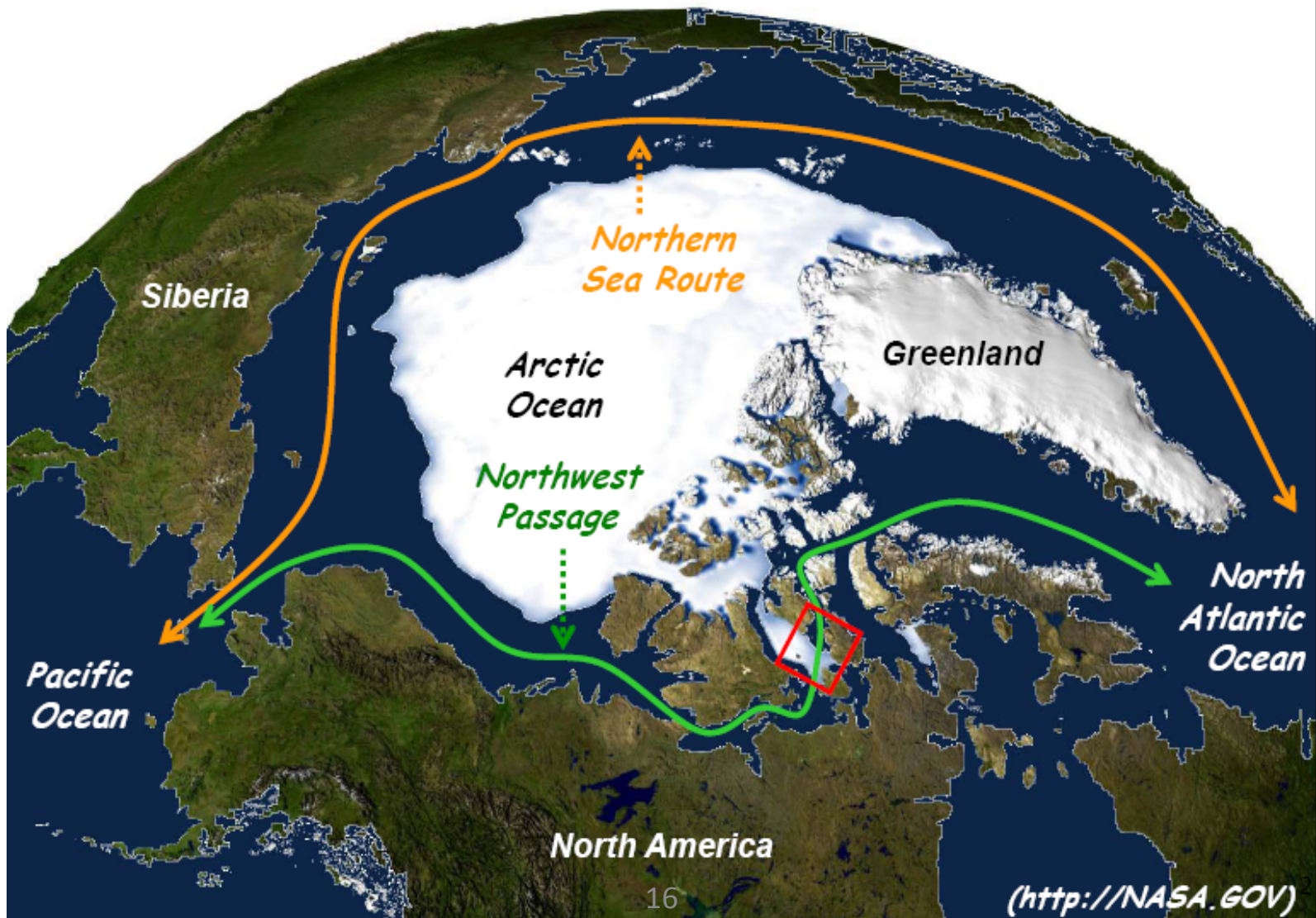
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Relevant headlines

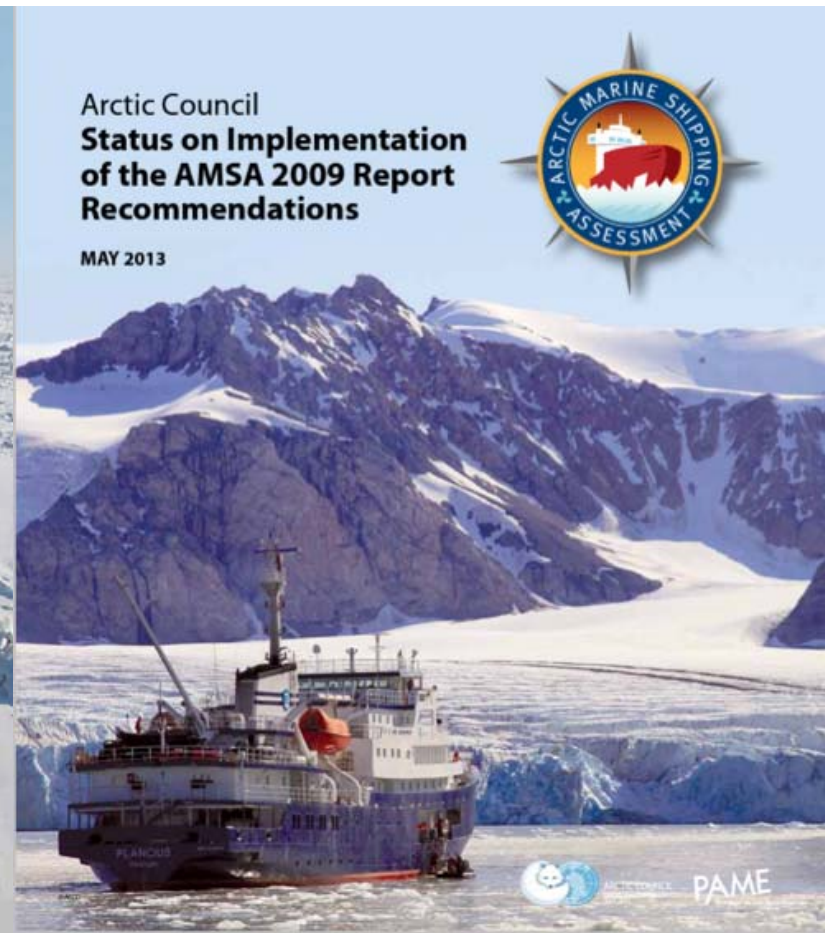
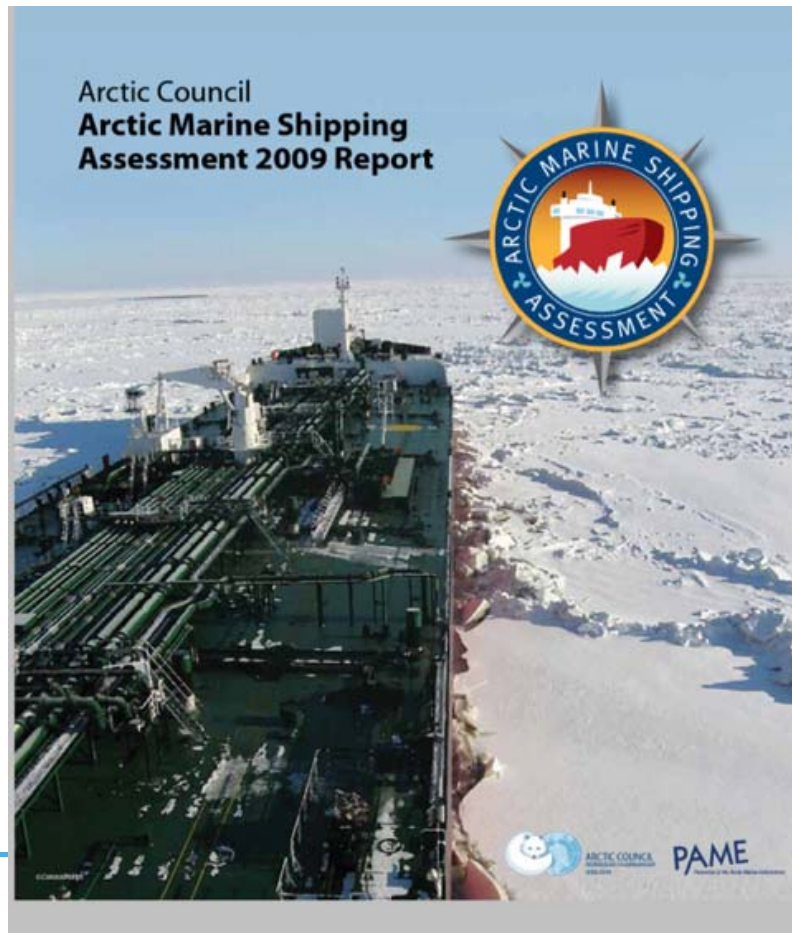
- World's Largest Shipping Company Heads Into Arctic As Global Warming Opens the Way NPR, August 22, 2018
- Historic Alaska Fuel Shipment reaches North Slope on barge Associated Press, 9.8.2018

Relevant headlines

- A cruise ship runs aground in Canada's Arctic Waters High North News, August 28, 2018
- Ice returned to the Northwest Passage this summer, forcing cruise lines to change course Anchorage Daily News, 9.23.2018



Eight Nations Set a Safety Agenda in 2009



WHAT DOES THE POLAR CODE MEAN FOR SHIP SAFETY?

EQUIPMENT



WINDOWS ON BRIDGE
Means to clear melted ice, freezing rain, snow, mist, spray and condensation



LIFEBOATS
All lifeboats to be partially or totally enclosed type



CLOTHING I
Adequate thermal protection for all persons on board



CLOTHING II
On passenger ships, an immersion suit or a thermal protective aid for each person on board



ICE REMOVAL
Special equipment for ice removal: such as electrical and pneumatic devices, special tools such as axes or wooden clubs



FIRE SAFETY
Extinguishing equipment operable in cold temperatures; protect from ice; suitable for persons wearing bulky and cumbersome cold weather gear



OPERATIONS & MANNING



NAVIGATION
Receive information about ice conditions



CERTIFICATE & MANUAL
Required to have on board a Polar Ship Certificate and the ship's Polar Water Operational Manual



TRAINING
Masters, chief mates and officers in charge of a navigational watch must have completed appropriate basic training (for open-water operations), and advanced training for other waters, including ice

DESIGN & CONSTRUCTION



SHIP CATEGORIES
Three categories of ship which may operate in Polar Waters, based on:
A) medium first-year ice
B) thin first-year ice
C) open waters/ice conditions less severe than A and B



MATERIALS
Ships intended to operate in low air temperature must be constructed with materials suitable for operation at the ships polar service temperature



INTACT STABILITY
Sufficient stability in intact condition when subject to ice accretion and the stability calculations must take into account the icing allowance



STRUCTURE
In ice strengthened ships, the structure of the ship must be able to resist both global and local structural loads

BACKGROUND INFO

- ❄️ THE INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS WAS ADOPTED NOVEMBER 2014 BY THE IMO MARITIME SAFETY COMMITTEE
- ❄️ IT APPLIES TO SHIPS OPERATING IN ARCTIC AND ANTARCTIC WATERS
- ❄️ THE AIM IS TO PROVIDE FOR SAFE SHIP OPERATION AND THE PROTECTION OF THE POLAR ENVIRONMENT BY ADDRESSING RISKS PRESENT IN POLAR WATERS AND NOT ADEQUATELY MITIGATED BY OTHER INSTRUMENTS



A Business Plan for a New Ocean



ARCTIC SHIPPING IS GROWING.

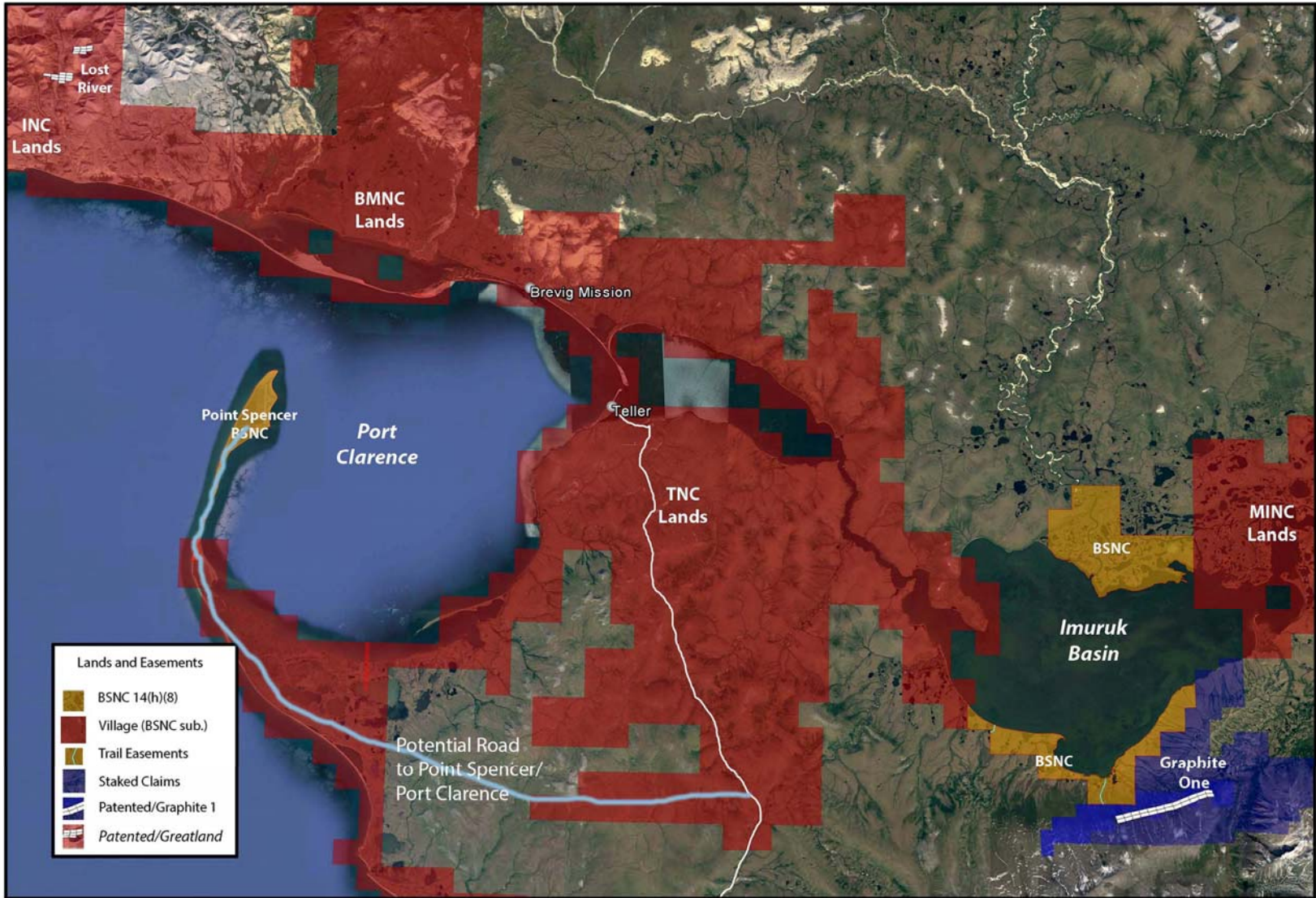
- CAN NATIONS WORK TOGETHER TO ESTABLISH SAFE, SECURE AND RELIABLE SEAWAYS IN THE NORTH?
- CAN A LEAGUE OF ARCTIC PORTS HELP GLOBAL SHIPPERS BENEFIT FROM NEW, SHORTER SHIPPING ROUTES?
- HOW DO WE PAY FOR SUSTAINABLE ARCTIC SHIPPING INFRASTRUCTURE?

St. Lawrence Seaway as a model



Applying the St. Lawrence Model to the Arctic

- Parallel legislation or international agreement to offer service
- Revenue/Regulatory Model to support Icebreakers, Navigational Aids, Safety
- Support from insurers, salvors
- Respect legal differences in waters status; perhaps by invoking UNCLOS Article 234.





Far East
Development Fund



FAR EAST AND
BAIKAL REGION
DEVELOPMENT
FUND

NORTHERN SEA ROUTE

KEY ECONOMIC CHARACTERISTICS

February 2017



PROJECTS

PROJECTS

**7 ice-class
containerships**



US\$1.2 bn

**Surrounding
Infrastructure**



US\$[...] bn

2 port hubs



US\$0.55 bn

Capital expenditures

- Capital expenditures of the project: **1 760 mln USD**:
 - **1 206 mln USD** 7 vessels (ice class Arc8¹, capacity 5 000 TEU each);
 - **554 mln USD** transshipment port hubs in Petropavlovsk-Kamchatsky and Murmansk

Northern Sea Route market niche

- In 2015 annual trade turnover between selected ports in Japan, South Korea, North China and Northern Europe accounted for 4.1 mln TEU
- Northern sea route is 25% shorter than traditional Suez route for these ports

[1] Aker Arctic (Finland) 5000 TEU vessel is considered to be used as a prototype for Arc8 ice class container vessel

Relevant headlines

○ When will Europe's Arctic railway be built? That could depend on cargo volumes High North News, 8/29/2018

○ Churchill's port, railway could soon reopen under new ownership Arctic Today, 9.6.2018

Nordic vs. Russia Competition



When will Europe's Arctic railway be built? That could depend on cargo volumes

By
Hege Eilertsen, High North News
-
August 29, 2018

Finland hopes to link with China's Belt and Road Initiative and forge a transport corridor — railroad and tunnel — from the Arctic Ocean to central Europe. (Arctic Corridor / Region of Northern Finland)

ALBERTA TO ALASKA RAILWAY Opportunity



Alaska ports are
2 - 4 days shorter
to Asia than
ports farther
south

The Alberta to Alaska Railway (“A2A”) provides an incredible economic opportunity for the region

- Connecting the Alaskan transportation system and Fort McMurray will allow:
 - Transport of stranded Canadian bitumen
 - Dual direction freight to and from North American destinations, and access to the Arctic
 - Economic connectivity that makes stranded resource projects viable, increasing regional growth potential

Linking North America to World Markets



The Alberta to Alaska railway will create a link between Alaska and North America. It will empower Alaskan ports to move trade in world markets. It will allow stranded Canadian bitumen to move economically to tidewater. A2A is a superior infrastructure investment because it will be a high-value asset with long-term, stable revenue streams.

- **Design, Permit, Build & Operate a multipurpose railway from Alberta to tidewater**
- **Canadian First Nations and Alaska Natives are currently being invited to participate in project sponsor ownership**
- **Capacity to move commodities, goods, people & data (fiber optics)**
- **Potential to also connect Alaska to lower 48 states**



Partner in the development of 1,516 miles of railway to enable stranded commodities to get safely to market. Over 200 miles of this will be in Alaska, connected with the 500-mile Alaska Railroad system.

Takeaway points...

- Economic opportunities and national security needs in the Arctic will be met together
- Global cooperation and new shipping regimes can attract major new investment
- Arctic residents are not bystanders, but major players in these efforts – and must remain so

