Northern Transportation: Effective Solutions

Ottawa, Northern Lights, February 6, 2020

NEAS GROUP

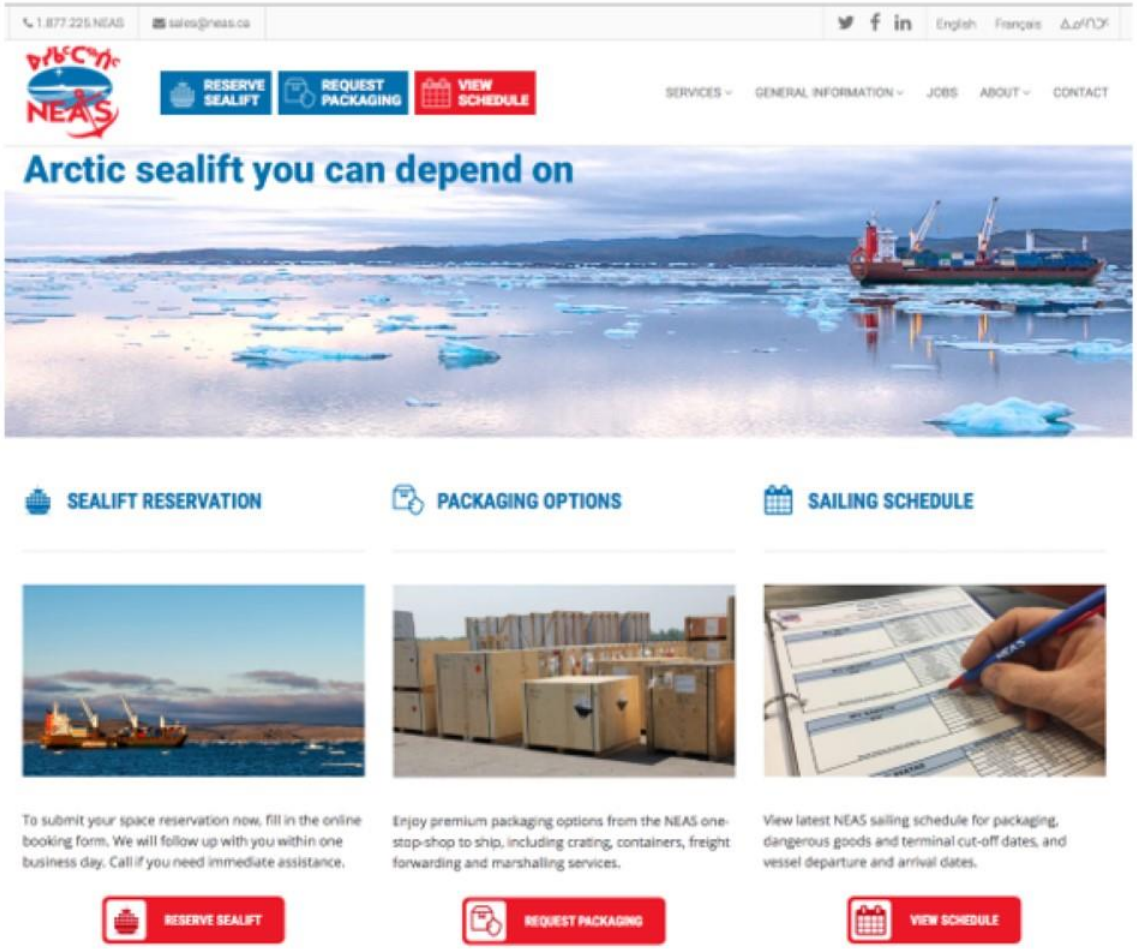
Nunavut Eastern Arctic Shipping Inc., Nunavik Eastern Arctic Shipping Inc., NEAS Inc.

ACROSS THE EDGE FOR YOU

Reliable:

- Sealift
- Containers & Packaging
- Schedules
- Jobs

"Sealift" or "Sea Lift"



SUMMER IS COMING

Annual Summer Sealift and Dry Cargo Marine Resupply

- **Part of the North**: part of annual tradition, Inuit training, employment, promotion and profitable ownership.
- **Success:** based in talent recruitment; investments in re-fleeting; administrative and operational excellence; and corporate values
- **Our Values:**

  People. Community. Service.

Let's Talk

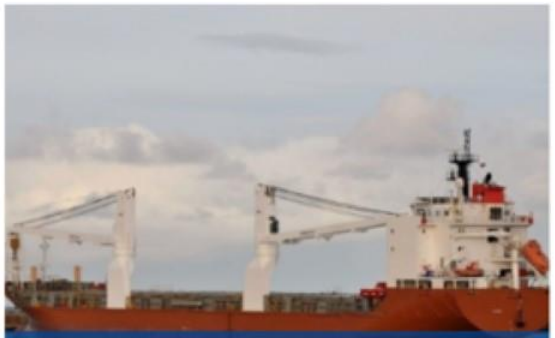
EFFECTIVE SOLUTIONS

- Effective solutions depend on priorities set by shared values
- Theatre of Operation:
  - ***Highly regulated*** industry: capital, vessels, labour, safety, security, sea, land, ports, occasional work areas, local, regional, domestic, international
  - ***Extremes:*** geography, environments, weather, ice, climate, social and economic disparities, information, risk management
- Results-based Management
- Safety first: employees, customers, public

ARCTIC SHIPPING LEADERS

MV QAMUTIK

MV MITIQ



MV NUNALIK

MV AUJAQ

MV SINAA

CND FLAG PRIDE

faces that power success

SOLUTIONS MOVING FORWARD

- Stop Regulatory Instability -

- Work to establish valid local data and comparative research
- Continue work to reduce local infrastructure and data deficits, including improved local marine work areas, nav aids, charts, weather and ice data
- Models for offsets for vessels operating in Canadian waters without port infrastructure
- Stop regulatory instability and uncertainty on fuel for no local benefits defined from shared values of people, community or service…

COST IMPACTS FOR FUEL SWITCH

Asymmetrical impacts based on income disparity of populations

- $1,400 annually per household (*Nunavut)
  - $700 effective Jan 1, 2020 sulphur cap + $700 HFO ban
- 20% increase in rates from $5,000 to $6,000 per 20ft container
- Instability on private investment

Annual Incomes

- ***$25K Nunavut Inuit***
- ***$90K Nunavut non-Inuit***

Table A-2 - Estimated Annual End User Price Impacts of the 0.5% Global Sulphur Cap – Nunavut

Community Resupply Cost Increase	Estimated End User Retail Effects – Community Resupply	Increased End User Prices - Nunavut	Annual Increase in End User Prices per Household
9%	1.5%	CAD$4.8M	CAD$535
12%	2.0%	CAD$6.4M	CAD$713

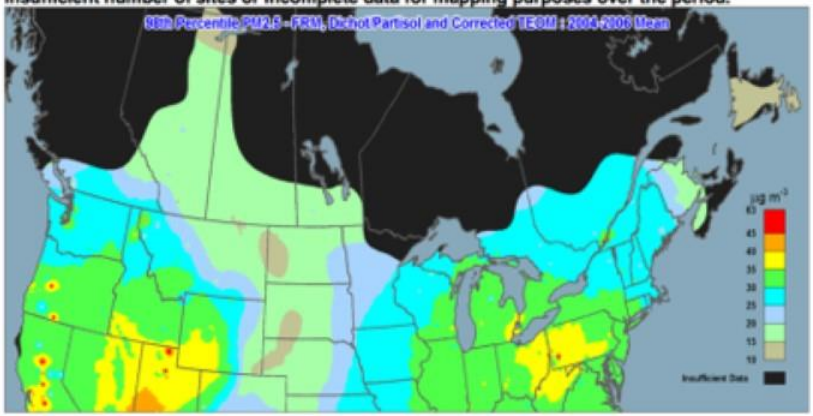
Table 3 - Estimated Annual End User Price Effects based on Use of Distillates – Nunavut with 2020 Sulphur Cap estimates as baseline

Range of Estimate	Community Resupply Cost Increase	Estimated End User Retail Effects – Community Resupply	Increased End User Prices - Nunavut	Annual Increase in End User Prices per Household
Low Range	4%	0.7%	$2.2M	$248
High Range	11%	1.9%	$6.1M	$679

NO MEASURABLE LOCAL BENEFITS

only increases toxic spill risks and pollution

Figure 14.2 Spatial distribution of the 98th percentile 24-h $PM_{2.5}$ concentrations ($\mu g/m^3$) across Canada and the US for 2004–2006. Areas in black depict where there is either an insufficient number of sites or incomplete data for mapping purposes over the period.



In Alberta, both $PM_{2.5}$ peaks and averages are higher in the winter when cold and calm conditions lead to some of the highest concentrations of primary pollutants in Canada. In the Lower Fraser Valley, daily average levels are highest in late summer and early fall, with peaks in fall and winter. This is due to favourable meteorological conditions in the late summer and changes in local activities, including wood burning and space heating in the fall and winter. In the interior of British Columbia, levels also peak in the fall and winter where emissions from the frequent use of residential wood combustion play a role, along with strong inversions due to cold air pooling in the valleys and/or the trapping of air by the mountains. In Whitehorse, Yukon, daily averages are highest during the summer months, and annual variability at this site appears to be influenced by forest fires. In the winter, high $PM_{2.5}$ levels occur due to woodsmoke.

The spatial pattern of the annual mean of $PM_{2.5}$ concentrations in Canada is very similar to the spatial pattern of the CWS metric (Figure 14.2), with the highest concentrations (>8 $\mu g/m^3$) occurring in southern Ontario and southern Quebec.

Table 4. Annual premature deaths attributable to air pollution by province and territory

Region—population	Premature mortality counts[a]					Valuation ($1,000,000)[a,d]
	per pollutant				per 100,000 population	
	NO_2	$PM_{2.5}$	O_3[b]	All[c]	All[c]	All[c]
Canada—35,851,774	940	9,700	4,000	14,600	41	108,000
Alberta—4,196,457	90	740	400	1,200	29	9,100
British Columbia—4,683,139	140	980	440	1,600	33	11,500
Manitoba—1,293,378	30	260	110	400	31	3,000
New Brunswick—753,871	6	110	64	180	24	1,400
Newfoundland and Labrador—527,756	1	36	41	79	15	580
Northwest Territories—44,088	–	5	0	6	13	41
Nova Scotia—943,002	8	160	93	260	27	1,900
Nunavut—36,919	–	0	0	0	1	4
Ontario—13,792,052	400	4,500	1,800	6,700	49	49,700
Prince Edward Island—146,447	1	19	17	37	25	270
Québec—8,263,600	260	2,600	910	3,800	46	28,000
Saskatchewan—1,133,637	16	270	87	380	33	2,800
Yukon—37,428	–	0	1	1	2	5

[a] Values represent mean estimates of health outcome counts and economic valuation. Values are rounded to the nearest integer and given to a maximum of two significant figures for values below 10,000, and three significant figures for values of 10,000 or more.
[b] Acute and chronic exposure premature mortalities combined.
[c] NO_2, O_3, and $PM_{2.5}$ totals may not match because of rounding.
[d] Endpoint valuation estimates expressed in Canadian dollars and based on 2015 currency.

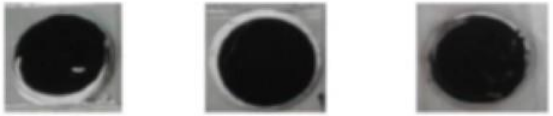
LISTEN TO LOCAL SEALIFT EXPERTS

Understanding from Annual Traditions and Local Knowledge

- Let us continue to invest and innovate
- Scrubbers plus HFO best available option right now
  - cost, environment, and reliability

Samples 1, 2, and 3 below are taken from Sampling Point A (post-turbochargers) burning MGO.

MGO/MDO



Sample 1 Sample 2 Sample 3

Samples 4, 5, and 6 below are taken from Sampling Point C (post-DeSOx Tower) burning HFO.

HFO + Scrubbers

Sample 4 Sample 5 Sample 6

- Diesel fuel (distillate) is approximately 10 to 100 times more aquatically toxic than HFO
- Low sulphur may emit more pollution
- Scrubber + HFO lowest emission options
- Irrational local debate for no benefits
- Cost increases will be passed on and amplified

SUMMER SEALIFT

success between "sea" and "lift"

Shuvinai Ashoona

(1961), Summer Sealift, 2003, Lithograph on paper 56.5 x 76.3 cm Collection of Indigenous and Northern Affairs Canada

THANK YOU

PEOPLE. COMMUNITY. SERVICE.