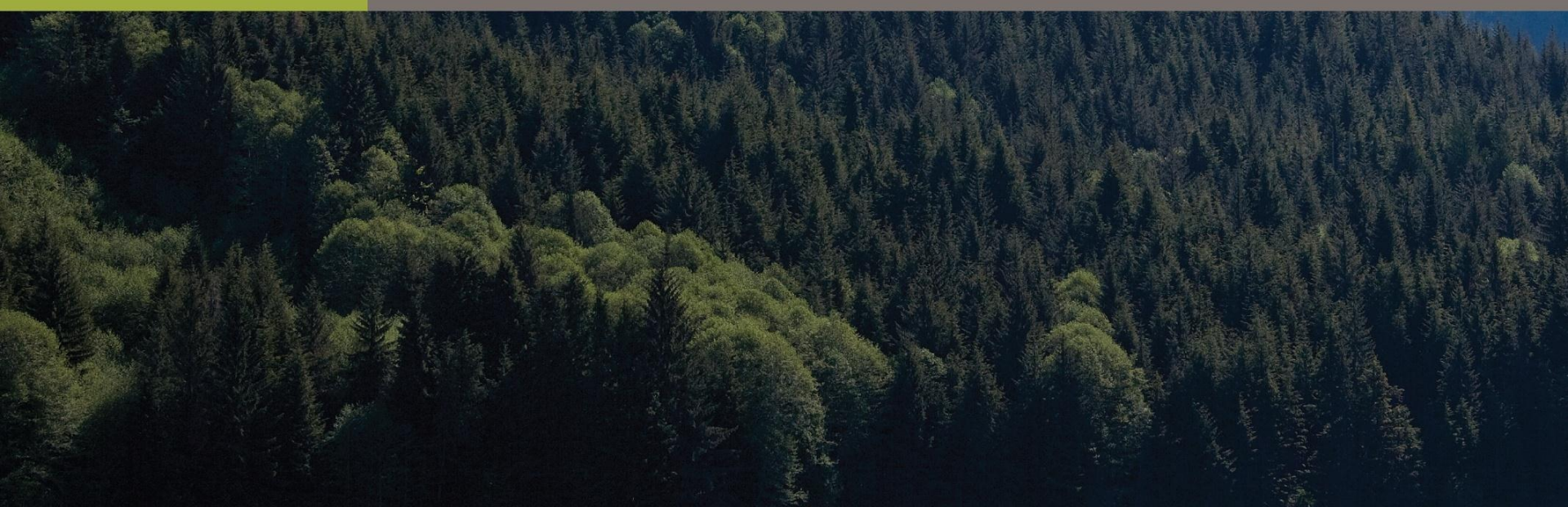


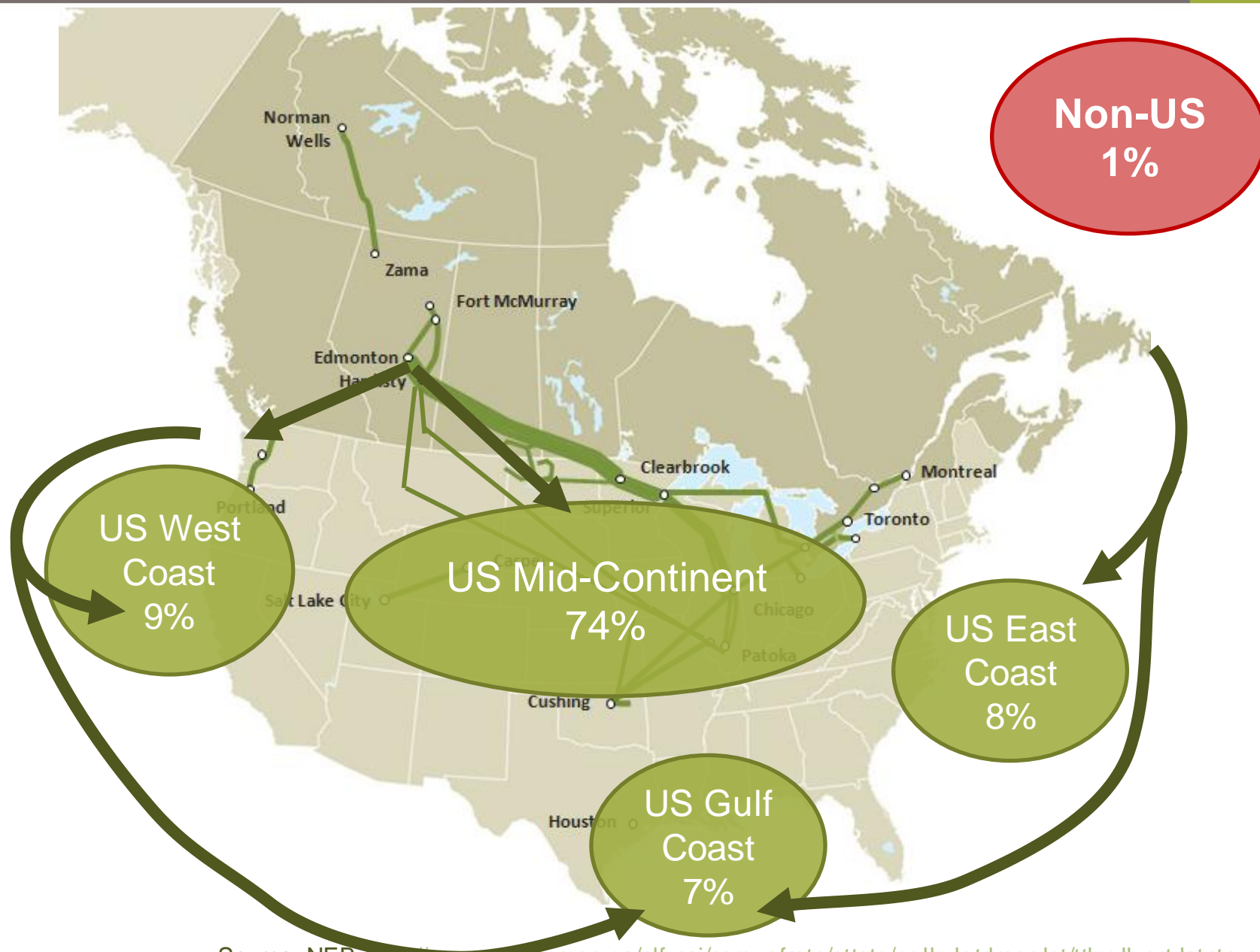


ENBRIDGE
NORTHERN
GATEWAY PIPELINES

Air & Waste Management Association - (CPANS) September 7, 2012

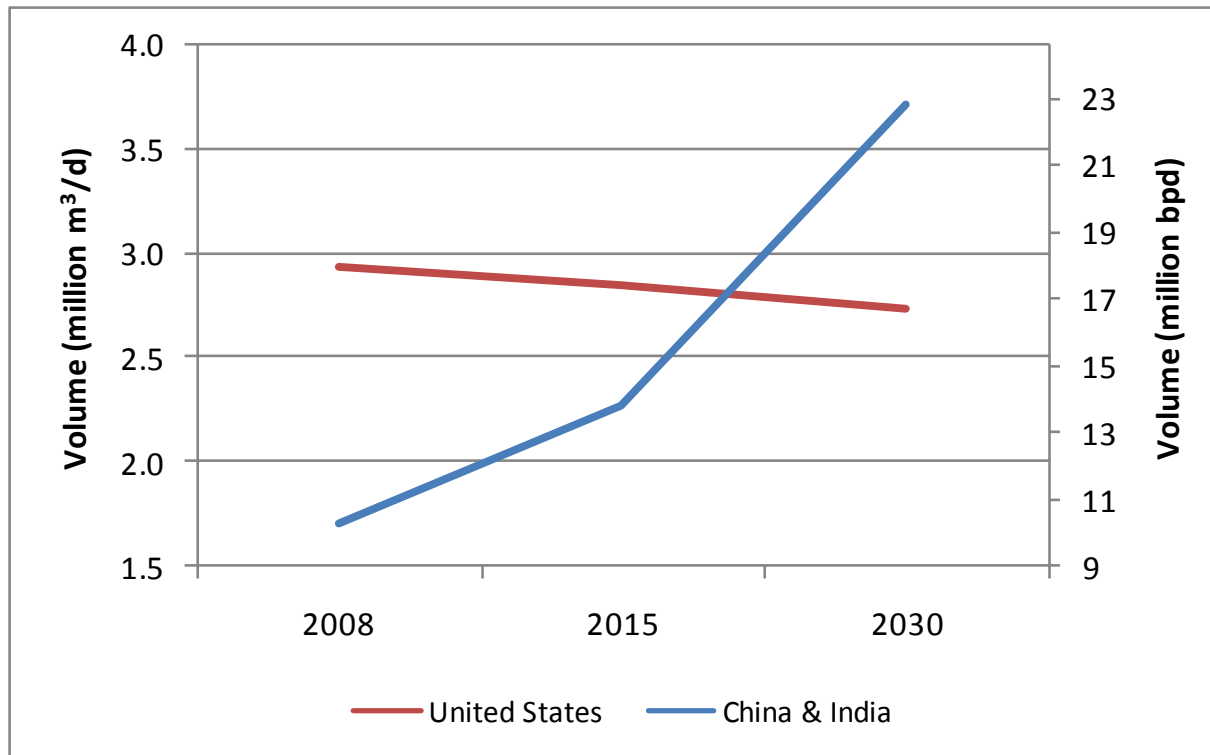


Canadian Crude Oil Exports – By Destination



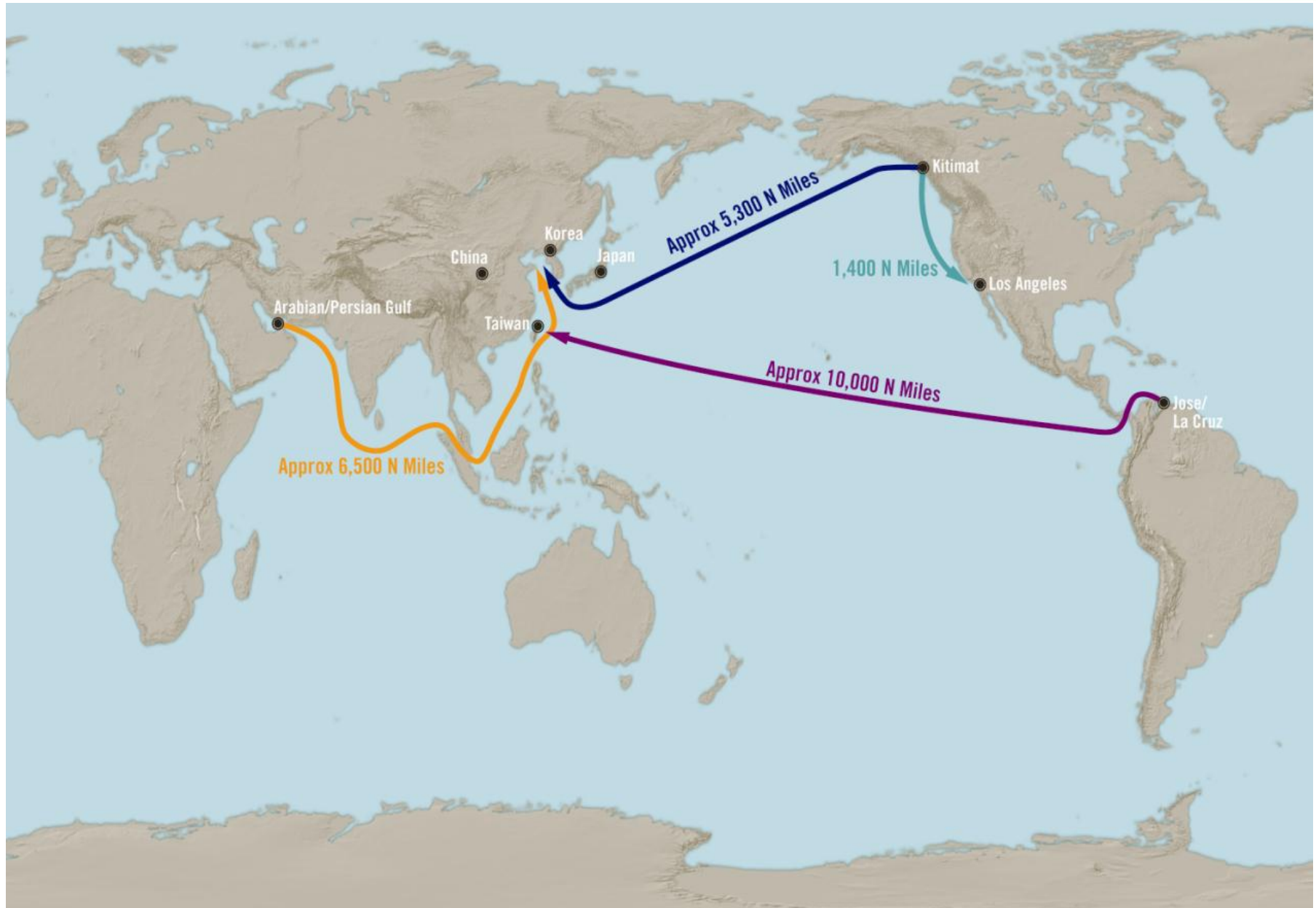
Market Growth for Crude Oil

*Demand: *Through 2030 China and India will experience average annual growth > 3.5% contrasted with the declining demand for oil in the United States*



**International Energy Agency 2009*

CANADA'S WEST COAST IS A COMPETITIVE ADVANTAGE





Major Scope Items:

- 1,177 km crude oil and condensate pipelines
- Marine terminal
- \$5.5 billion project

Pipe Design:

- 525,000 bpd crude oil
- 193,000 bpd condensate

Kitimat Terminal:

- 5 million barrels of storage
- 2 berths
- VLCC ready

- JRP is Canadian Environmental Assessment Agency (CEAA) and National Energy Board (NEB)
- NEB was given its power through legislation
 - **Independent quasi-judicial tribunal**
- Approval from JRP requires Government In Council approval

Additional regulatory agencies include:

- Transport Canada
- Department of Fisheries and Oceans
- Aboriginal Affairs and Northern Development
- Natural Resources





Control centre

- Route and watercourse crossing selection is based upon engineering and environmental studies and input from Aboriginal and Non-Aboriginal Communities
- Stringent steel chemistry & strength testing
- Fusion bond epoxy coated pipe will be used & inspected
- Every weld will be inspected during construction
- Cathodic protection to prevent corrosion during operation
- Strategic location of remote control valves
- Pipe hydrostatically tested
- 24/7 monitoring from control centre
- Regular monitoring of pipeline with in-line inspection tools

Regulatory Requirements:

- Double hulled ships / multi compartment
- BC pilots (plus redundant nav-aid systems)
- Emergency preparedness and response planning



Enhancements to Safety:

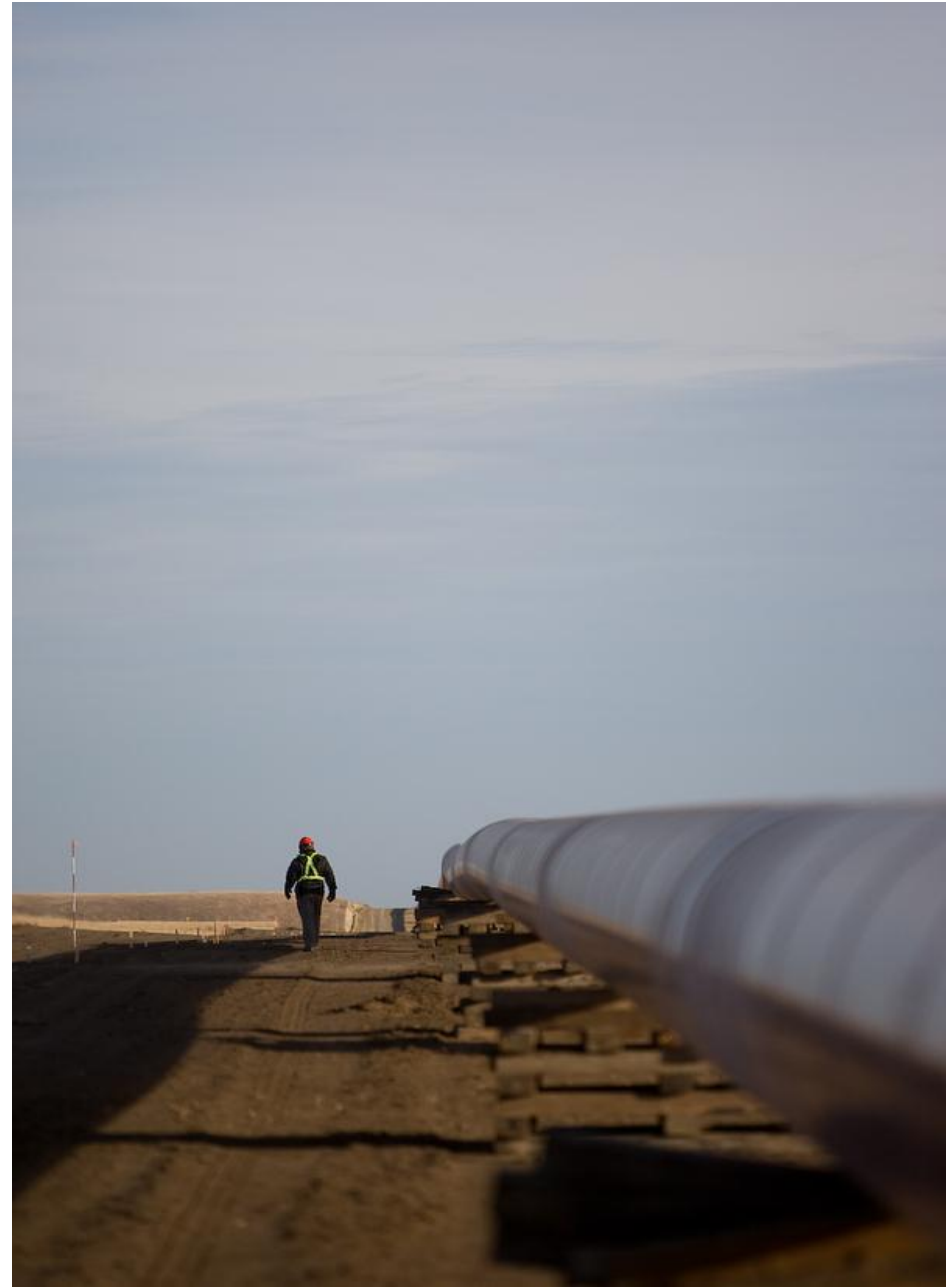
- Tanker route simulation
- Improved navigational aids, new radar
- Vetting of ships and crew
- Weather monitoring criteria for ship transit
- Reduced vessel speeds in marine channels
- Tug escort operations (tethered towing)
- Closed loading and containment booms
- Whale monitoring vessel

- Environmental safeguards paramount
- Equity ownership
 - 10%
- Procurement
 - \$300 Million targeted
 - Based on Enbridge experience
 - Depends on First Nation capacity
- Employment & Training
 - 15% construction target
- Tax on reserve land
- Marine
 - \$300 Million services
 - Map environmental sensitivities
 - Environmental monitors



Aboriginal Business Summit

- \$28 billion of value to industry in the first 10 years alone
- \$270 billion in GDP uplift over 30 years
- \$81 billion in tax revenues
- 558,000 person years of employment
- \$48 billion in labour income



Construction – On-site employment only:

- 4,100 person-years of direct on-site employment in BC
- **1,400** person-years of direct on-site employment in AB
- Between 2000 and 3000 workers will be directly employed during the peak periods of project construction

Construction – Total employment (On-site, Purchases, Indirect, Induced):

- 35,000 person-years of employment in BC
- **15,000** person-years of employment in AB
- 12,000 person-years of employment elsewhere in Canada
- Total of 62,000 person-years across Canada (\$4.3 Billion in Labour Income)

Alberta Regions Defined



	NW Alberta	AB Central	Edmonton Region
Counties/ MD	Grande Prairie, Greenview	Lac Ste. Anne, Woodlands	Strathcona, Sturgeon
Towns/Cities	Beaverlodge, Fox Creek, Grande Prairie, Wembley	Barrhead, Mayerthorpe, Sangudo, Whitecourt	Bon Accord, Bruderheim, Edmonton, Fort Saskatchewan, Gibbons, Legal, Leduc, Morinville, Spruce Grove, St. Albert, Stony Plain, Westlock

Alberta Regional Benefits

	NW Alberta	AB Central	Edmonton
Construction Activity:	280 km + 1 pump station near Smoky River	122 km + 1 pump station near Whitecourt	70 km + 1 pump station in Strathcona County
Direct Construction Employment	720 PY	490 PY	230 PY
Total Construction Employment	1,320 PY	675 PY	1,540 PY
Operational Employment	17 Direct + 25 Indirect	15 Indirect	9 Direct + 35 Indirect
Est. regional goods and services	\$ 142 million	\$ 63 million	\$ 27 million

Alberta Regional Benefits

Estimated Regional Goods and Services \$ millions	NW Alberta	AB Central	Edmonton
Equipment Rentals	\$ 33	\$ 21	\$ 10
Accommodation/Food	\$ 32	\$ 16	\$ 7
Clearing/logging/salvage	\$ 26	\$ 2	\$ 1
Fuel	\$ 16	\$ 7	\$ 3
Stockpiling Pipe	\$ 7	\$ 4	\$ 2
Trucking	\$ 7	\$ 3	\$ 1
Equipment Parts	\$ 6	\$ 4	\$ 2
Surveying	\$ 4	\$ 2	\$ 1
Access Roads	\$ 2	\$ 1	\$ 1
Other	<u>\$ 9</u>	<u>\$ 4</u>	<u>\$ 2</u>
Total Goods and Services	<u>\$ 142 million</u>	<u>\$ 63 million</u>	<u>\$ 27 million</u>

Project Milestones



The above timeline is illustrative and subject to change

gatewaypanel.review-examen.gc.ca



Thank You