

Sustainable Infrastructure Development

A Presentation to the Conference of
Parliamentarians of The Arctic Region
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The Cold Arctic is Heating Up

- ▶ Climate Change and high demand for resources is pushing development in the Arctic
- ▶ Authority and control over Land and Resources is moving towards Indigenous peoples
- ▶ Cost of Living is increasing rapidly in the north and more people are living near poverty
- ▶ There is greater income disparity in regions of high development



Defining Sustainable Northern Infrastructure

- ▶ Any physical structure, practice, policy or principle that leads to a future that enhances the long term stability, prosperity or the self sufficient state of northern people
 - ▶ This refines the traditional definition of “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”
 - ▶ In other words, it’s not good enough to be neutral to future generations, we must add to their likelihood of success
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Case Studies of Three Northern Mine Developments in the Northwest Territories

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- ▶ Giant Gold Mine, Yellowknife, 1947 to 2004
- ▶ Cominco Lead Zinc Mine at Pine Point, NT, 1964 to 1987
- ▶ Ekati, Diavik, Snap Lake Diamond Mines, Slave Geological Province, 1997 to Present



Giant Mines, Prosperity, with a Future Debt

- ▶ Near to the community, assisted in the development of hydro power, roads, all measure of infrastructure.
- ▶ Encouraged the long term settlement of miners with families, in a multi faceted community.
- ▶ Huge environmental legacy which will be an expensive and dangerous liability for the foreseeable future



Pine Point, Pluses and Minuses

- ▶ Large Government investment in Roads, Hydro Facilities, Railways and a complete townsite
 - ▶ A short mine life, with a complete abandonment of the community afterwards
 - ▶ Infrastructure was sustainable bonus to the region, clean affordable energy, transportation system.
 - ▶ Environmental impact remains on the land
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Diamond Mines are not Forever

- ▶ Mines are remotely located, fly in work force, resupply on seasonal ice roads.
- ▶ Mines run on diesel fuel, which has appreciated by 400 per cent over the working period
- ▶ Mines have very finite life spans, they have created many job opportunities and business ventures for NWT residents
- ▶ There is no legacy infrastructure created



Presently in the NWT

- ▶ The NWT over the last decade, through the expansion of mining had a very high rate of increase in its GDP

A study on the Cost of Living and Income in the NWT shows that there was an increase in income inequality during that period

- ▶ In a number of small northern communities located within the mining region, the rate of poverty actually increased

Problems of Sustainability

- ▶ Transportation costs are high and increasing in throughout the north
- ▶ Food security is threatened by increasing costs of supply, retail distribution, and energy
- ▶ Traditional harvesting has been impacted by cultural changes, depletion of resources, and cost of harvesting
- ▶ Education and training remain difficult for remote communities
- ▶ Energy choices are underlying all activity



Energy is a Big Problem

- ▶ Total yearly use of imported fuel oil in the NWT is in the order of 500 million litres.
- ▶ In 2000, the cost of fuel oil in the major center of Yellowknife was \$.30/ litre. In 2014, it exceeds \$1.35/ litre. In smaller isolated communities, the price can reach \$1.80/ litre
- ▶ Electricity from fuel oil can cost \$.45/kwh simply for the fuel.

The Importance of Local Economies

Analysis from the 2013 Cost of Living Study shows that Income increases from mining development and public sector employment and business activity not having a significant impact on the local economy in the communities.

NWT small community economies have moved towards consumer based models, away from traditional models of self sufficiency.

Wealth generation from resource development and from the provision of government services needs to have multiplier effect in the communities

Sustainable Development Policies that are Working in The NWT

- ▶ Transportation improvements can make a difference, i.e. Inuvik Tuktoyaktuk highway
- ▶ Moving to Renewable Energy through a NWT Energy Strategy that includes an aggressive solar deployment and Canada leading biomass heating.
- ▶ Community Gardening Program along with an investment in a northern agricultural training center
- ▶ 70 million dollar investment in fibre optics throughout the Mackenzie Valley



Pan Arctic Sustainability

- ▶ **Denmark**

- ▶ Denmark's Arctic areas are to be developed in an environmentally friendly, sustainable, and safe manner, with adherence to the strictest environmental standards, in terms of research and development, and maintained so it is sustainable, in terms of longevity of usage and minimal environmental impact.

- ▶ **United States**

- ▶ The 2013 National Strategy for the Arctic Region has as its second goal Pursuing Responsible Arctic Stewardship

- ▶ **Finland**

- ▶ The third of Finland's four pillar Arctic strategy is Finland Complies with the Principles of Sustainable Development and Respects the Basic Conditions Dictated by the Arctic Environment.

- ▶ **Canada**

- ▶ 2nd pillar of Arctic policy Protecting Environmental Heritage

- ▶ **Norway**

- ▶ 3rd political priority of Arctic policy: Be Environmental and National Resource Stewards

- ▶ **Russia**

- ▶ 3rd of the 4 National interests in the Arctic policy; Preserving the Arctic Ecosystem

- ▶ **Iceland**

- ▶ 12 Principles for Arctic policy development includes: Prevent Human-Induced Climate Change and its Effects for the Wellbeing of Arctic Community

- ▶ **Sweden**

- ▶ Sets climate and the environment as its top priority under Sweden's Strategy for the Arctic Region (2011)

Cooperation can make a Difference

Arctic Council

Kiruna Declaration

- ▶ Recognize the value of sustaining Arctic ecosystems and biodiversity and that the Arctic environment needs to be protected as a basis for sustainable development, prosperity, lifestyles and human wellbeing, and commit to pursue the conservation and sustainable use of Arctic biological resources.

Nordic Council

- ▶ The Environment and Natural Resources Committee deals with issues concerning the environment and nature preservation as well as exploitation of natural resources in the agriculture, fisheries and forestry industries.

University of the Arctic

- ▶ Among the goals of UArctic's Research Area are to increase research cooperation between UArctic member universities and research organizations, improve opportunities and conditions for research funding, and to promote cooperation with international science organizations.

The Beneficiaries of Sustainable Infrastructure

