Above the Permafrost Line

Flows of Goods and People

Canada's Territories

- **40%** The territories make up 40% of Canada's land mass.
- **200,000** people live in the territories.
- **+50%** of the territories' population are Indigenous Peoples.

Degrees of Nordicity

- **Arctic Canada**: area above the Arctic Circle line but often refers to the area above 55° parallel line. See map.
- **Northern Canada**: area above the 50° parallel line but often refers to area above the permafrost line. See map.
- **Permafrost line**: limit of ground (soil, rock, sediment, etc.) that has remained at or below 0°C continuously for at least two years.

Arctic and Northern Canada

- In Canada, there are 6 cultural areas of Indigenous Peoples and 2 areas that are located above the permafrost line.

Cultural Areas

- **Arctic Region**: Home to the Inuit for the past 1000 years. 73% of the total Inuit population lives in Inuit Nunangat (see map).
- **Subarctic Region**: Home to multiple Indigenous group such as the Dene, Cree, Ojibwa, Atikamekw, Innu, and Beothuk.

Sources:
Arctic and Northern Canada is home to some residents who live off of wages, some residents who rely on traditional hunting and gathering methods, and other residents who depend on both. ⁸

**TOP 4 INDUSTRIES IN THE TERRITORIES** ⁹
(Approximate % of GDP for The Northwest Territories, The Yukon, and Nunavut, 2018)

- ³¹% *Public Sector*
- ²⁶% Mining, Quarrying, and Oil/Gas Extraction
- ¹⁰% Construction
- ¹⁰% Real Estate, Rental, and Leasing

In 2017, the territories exported CA$ 2.45 billion of mineral products, accounting for 99.5% of the territories' total exports. ¹⁰

**INFRASTRUCTURE DEVELOPMENT** ¹¹

*How do remote communities transport goods and people?*

- Seasonally
- Sea roads
- Winter roads
- Year-round
- Air

Infrastructure gaps increase the overall cost and difficulty of moving goods and people in and out of Arctic and Northern Canada and are obstacles to social and economic growth.

In 2019, Canada's federal government, Indigenous peoples, Inuit, First Nations and Métis, and 6 territorial and provincial governments **together agreed** on **3 infrastructure priorities** for future investments.

**INFRASTRUCTURE PRIORITIES**

- Reliable and Clean **Energy**
- Safe and Efficient **Transportation**
- **Communications** (High Speed Internet)

*The Public Sector includes educational services, health care and social assistance, and public administration.*

**EXPANDING INFRASTRUCTURE SECTORS**

**ENERGY**
Innovations in batteries, microgrids, and renewable energy (solar parks, hydroelectricity, etc.) are expected to reduce remote communities' reliance on diesel transportation, winter roads, and nonrenewable energy.

**TRANSPORTATION**
Incorporating more all-weather roads, permafrost-infrastructure, precise weather and climate monitors, ice thickness trackers for winter roads (i.e. Enhanced Satellites and Ground Penetrating Radar) in Northern and Arctic Canada is increasing the reliability, safety, and efficiency of transporting goods and people.

**COMMUNICATIONS**
Building more broadband satellites and underwater broadband cables will make internet-connected devices and applications (reliable weather reports, wildlife reports, and applications in Indigenous languages, etc.) more usable and allow residents to share information with each other. It is also expected to facilitate trade and transportation and increase safety and the quality of life.

**INTERNATIONAL TRAFFIC & COASTLINE INDUSTRY EXPANSION**

- There is 162,000 km of coastline in Arctic Canada.¹⁵
- Since 1979, Arctic ice has melted at a rate of approximately 12.9% per decade.¹⁶
- Using the Northwest Passage in the Arctic instead of the Panama Canal cuts shipping journeys between Eastern Asia and Western Europe by approximately 43%.¹⁷
- An estimated 80% of the undiscovered petroleum resources in the Arctic is offshore under contested waters.¹⁸

International traffic and industries complementary to coastlines are expected to expand in the Arctic.¹⁹

**EXPECTED INDUSTRY EXPANSION**²⁰

- Shipping
- Natural Resources
- Commercial Fishing
- Military
- Border Security
- Foreign Affairs
- Tourism
- Scientific Research
- Cultural Industries

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¹³ Zingel, CBC, 2019.
¹⁵ The Canadian Encyclopedia, Canadian Arctic Sovereignty, 2018.
¹⁸ NASA, 2019.
¹⁹ USGS, 2008.
²⁰ Canada, “Canada’s Arctic and Northern Policy Framework,” 2019. ibid.