

Resilience in the Canadian North

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The Northern Context



3 northern territories plus northern regions of 7 provinces

The Context

- **Vast distances**
- **Small populations**
- **Limited infrastructure**
 - Few roads
 - Unreliable power supplies
- **Severe and changing climate**
 - Extreme cold
 - Permafrost, muskeg
 - Wildfires
 - Flooding
- **High operating and maintenance costs**
- **Significant Indigenous population**





GEO satellite



Submarine fiber



Microwave



LEO satellite



**Parker Lake wildfire near
Fort Nelson, BC: May 2024**

**Repairing fiber after
remote wildfire, 2023**



Flooding damage



Strategies to increase Resilience in the North

- **Complete network rings** – can route traffic in either direction
- **Redundancy**
 - **Facilities: Additional technologies such as satellite as backup or alternatives**
 - **Facilities: Additional terrestrial networks**
 - e.g. ECN, Northern Quebec, summer 2023
 - **Wholesale access for additional service providers**
 - e.g. Indigenous ISPs, mobile providers
- **Local employees/technicians: train and hire**
 - **Can troubleshoot some problems without fly-in techs**
 - **Have incentive to ensure access**
 - **Create local jobs**
- **Operational subsidies**
 - **High costs of maintaining services, low population to spread costs**

Thank You!

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