



Mineral Development in Nunavut – *Successes, challenges and opportunities* –

To: Nunavut Mining Symposium

By: Priya Sharma & Tom Hoefer – May 2022

Who is the Chamber of Mines?

- Since 1967, champion and supporter of northern mineral resource development
- Our Vision:
 - *A vibrant and sustainable exploration and mining industry in the NWT and Nunavut which has the support of the peoples of the North.*
- Our Mission:
 - *To provide leadership on, and advocate for, responsible and sustainable mineral exploration and development in the NWT and Nunavut*
- We represent many members with interest in a strong Nunavut minerals industry, including:
 - Mining & exploration Companies
 - Service & supply companies – both Indigenous and non-Indigenous
 - Individuals
- 2 Offices: Yellowknife, NWT and Iqaluit, NU

www.miningnorth.com

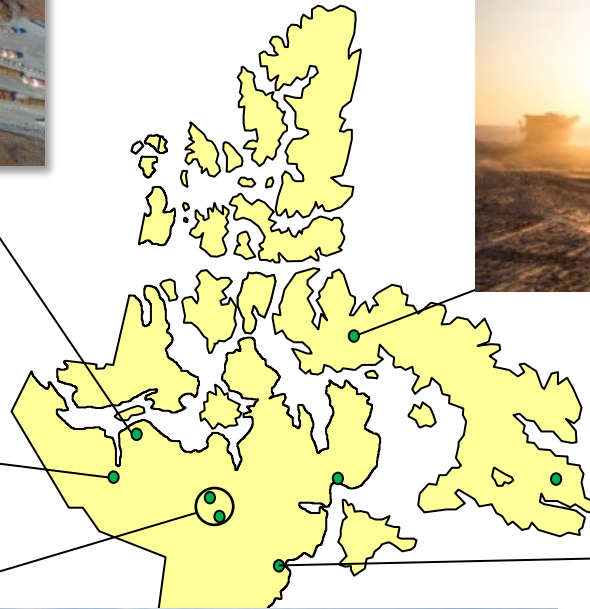
Key Messages

- Mineral production and benefits remain strong despite COVID
- Exploration investment needs work
- Challenges to address
- Opportunities for benefits

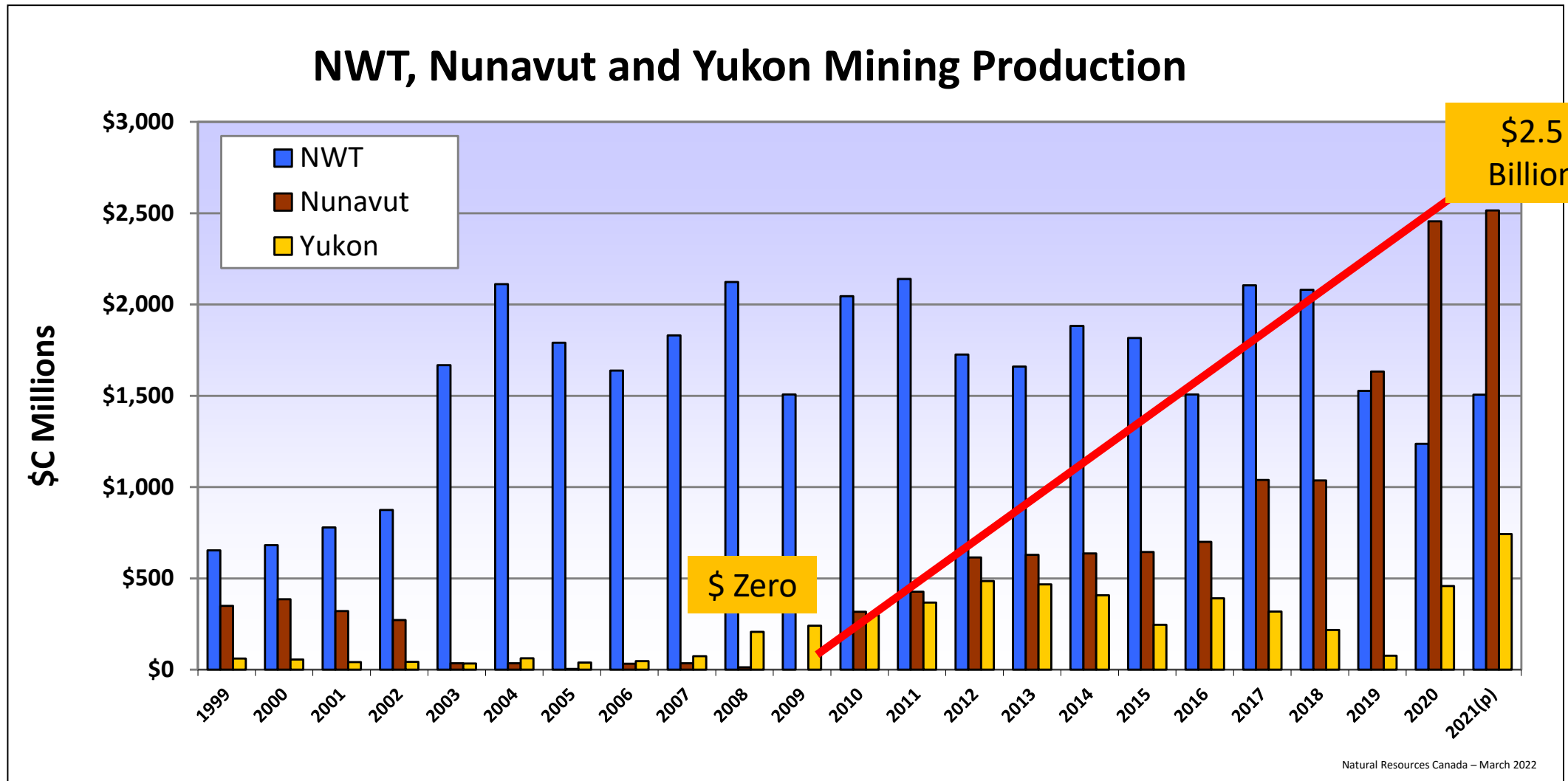
COVID Kudos

- Chief Public Health Office and Officer
 - Working with our industry to keep operations and communities safe
- Operating mines and advancing projects
 - Respecting and protecting your northern workforce and their communities
 - COVID testing labs, Hygiene protocols and many other mitigations
 - Providing worker support and community support
 - Maintained operations and their important contributions to the economy
- Exploration companies
 - For respecting communities' needs, even postponing projects where asked
 - For surviving with no financial assistance
- Governments
 - For supporting members with tenure assistance when exploration plans went sideways

Mining today: 4 Operating Mines and 1 under construction



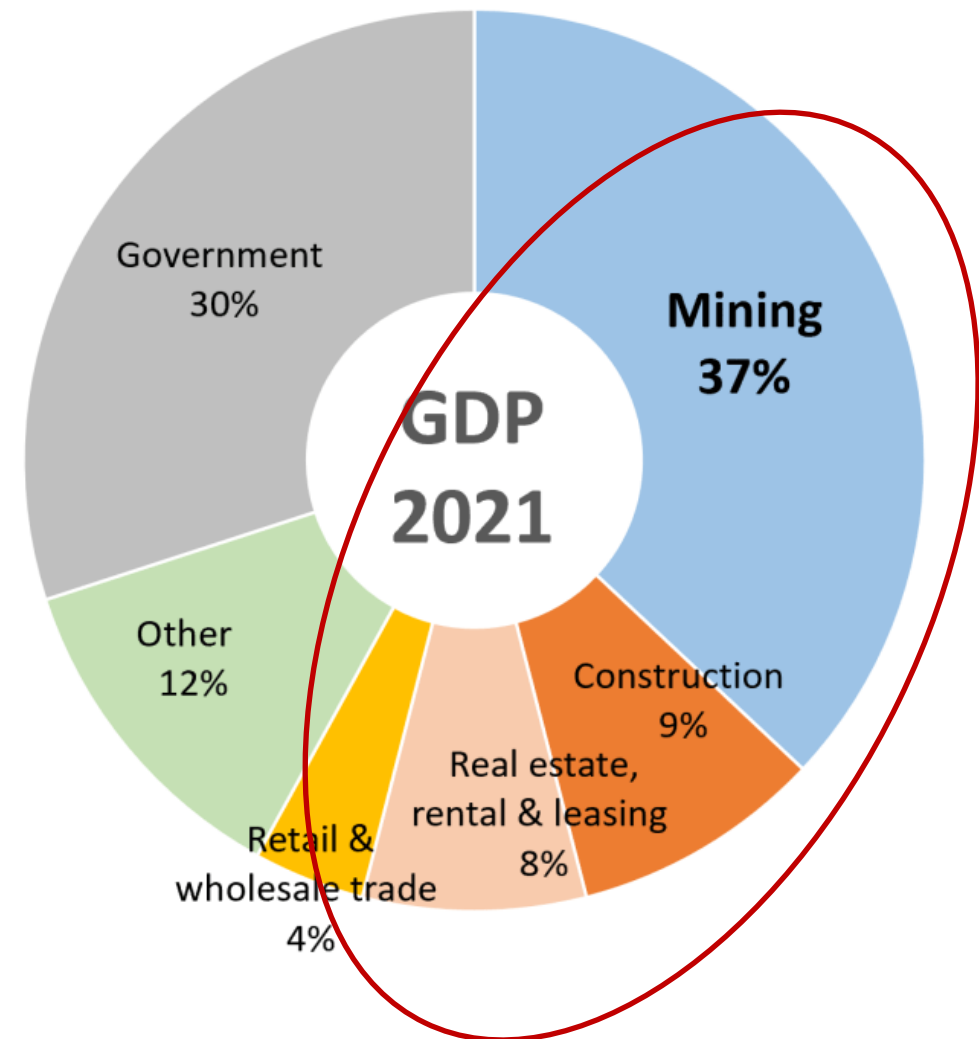
Value of Nunavut mining production continues to grow



- **Despite COVID, Nunavut production continues to increase significantly. NLCA Vision paying off.**
- **Markets helped Nunavut: Compare NWT, where COVID really damaged the diamond market**

Again, mining was the largest part of Nunavut's 2021 economy

- Direct mining contributions are very significant
- And mining adds more indirectly
 - through other sectors like construction, real estate, transportation, trade, etc.

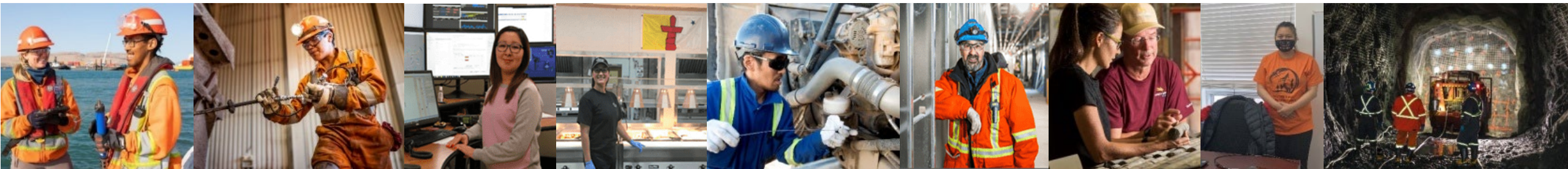


Mining's growing socio-economic benefits

Nunavut mining benefits (2009-2020)

- 30,000 person-years of employment
 - Average 19% northern/81% southern
 - 5,270 FTE jobs in 2020, down ~ 8% due to COVID
- \$10.8 Billion in business
 - \$5.2 Billion northern and Indigenous (48%)
- \$Billions in taxes and royalties to public and Inuit governments
- \$100's million dollars to communities in IBA payments, scholarships, donations, & community wellness projects

Source: Compilation of mines' annual socio-economic agreement data

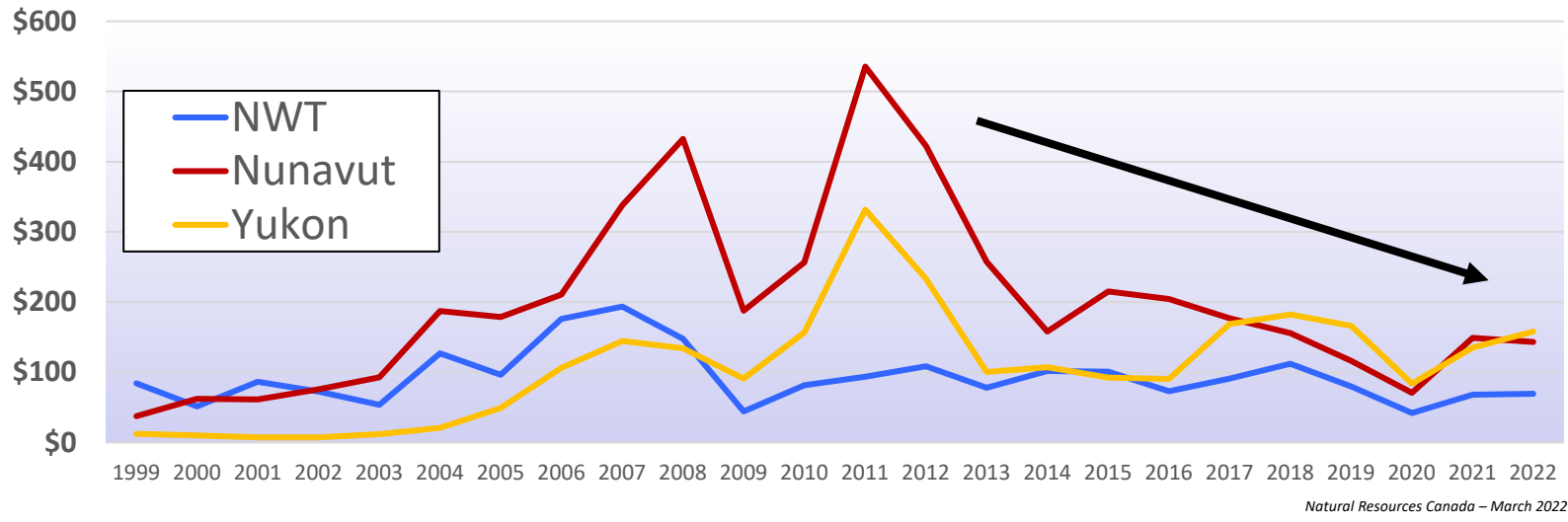


Significant growth in Nunavut mining supply businesses

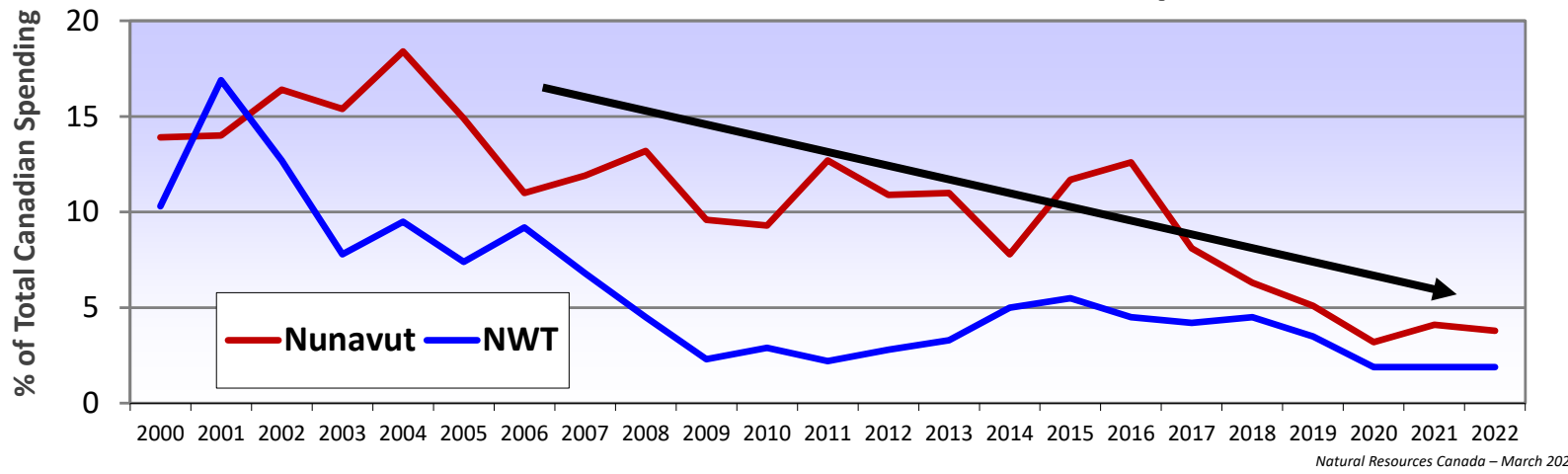
- ABF Arctic
- ACASTA Heliflight
- AGLU Consulting & Training
- Akhaliak Consulting
- Arctic Fuels Ltd
- AV Nunavut Fuels
- Baker Lake Contracting & Supply
- Eskimo Point Lumber & Supply
- Forest North Aviation & Logistics
- Geotech Ekutak Ltd
- Inukshuk Construction
- Jago Services
- Kasuk Exploration
- Keewatin Piling Ltd
- Kiluk Ltd.
- Kissarvik Coop
- Kitikmeot BBE Expediting
- Kitikmeot Blasting Services
- Kitikmeot Camp Solutions
- Kitikmeot Caterers Ltd.
- Kitikmeot Cementation Mining & Develop't
- Kitikmeot Environmental Ltd
- Kitnuna
- Kivalliq Communications
- Kivalliq Contractors Group Ltd
- Kivalliq Expediting & Storage
- Kivalliq Mechanical Solutions
- Kivalliq Tire
- Kusugak Consulting
- M & T Enterprises
- Medic North Nunavut
- Nagjuk Incorporated
- Nahanni Nunavut Construction
- NEAS Inc.
- NNL Moreau Ltd
- Northern Networks Ltd
- Northwest Company
- NU Environmental
- Numani Stantec Ltd
- Nuna Group of Companies
- Nuna West Mining Ltd
- Nunamiut Lodge
- Nunavut MacLean Inc.
- Nunavut Sealift & Supply Inc.
- Nunavut Semi Construction Inc.
- Nunavut Talbon Construction Ltd
- Nunavut Welding and Fabrication
- Nuqsana Baril
- Nuqsana Golder Eng & Env Consulting
- Nuqsana Promec
- Oomilik Enterprises
- Orica Canada
- PEL Drilling Ltd
- Peter's Expediting
- Qaaqtuq Dyno Nobel Inc.
- Qikiqtani Industry Ltd.
- Qillaq Innovations
- R&T Cleaning Ent
- Sakku Enterprises
- Sarliaq CMAC Inc.
- Sarliaq Fournier
- Sarliaq Holdings
- Savik Construction Corp
- Summit Air Kitikmeot Ltd
- Tangmaarvik
- Toromont Arctic

Challenge: Exploration could be much stronger

Mineral Exploration Expenditures (millions)



NWT & NU as % of Total Canadian Mineral Exploration



Investors' perceptions low

- Eg: Fraser Institute Survey

WHY?

- Land access risks – DNLUP
- Higher costs due to Canada's largest and significant infrastructure deficit
- Better government incentives in provinces

The Result:

- Less risky and cheaper jurisdictions are attracting the investment

Not light switches: Long exploration discovery to production times

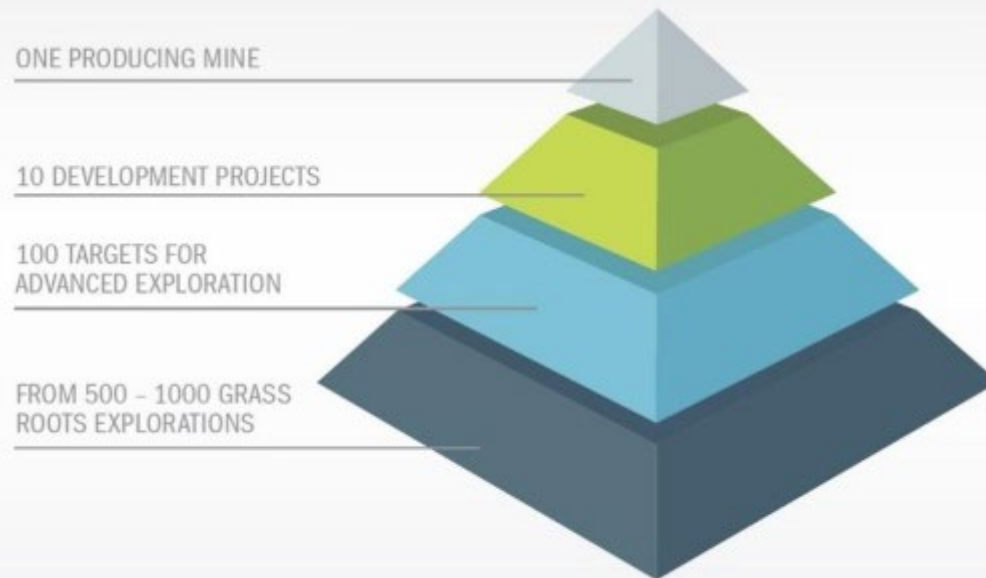
Mine / Project Name	Commodity	Discovery	Start of Production	Discovery to Production (years)
Nanisivik mine	Zinc, lead, silver	1911	1976	65
Polaris mine	Lead, zinc	1960	1982	22
Lupin mine	Gold	1960	1982	22
Mary River mine	Iron	1962	2015	53
Hope Bay mine	Gold	1988-99	2017	18-29
Meadowbank mine	Gold	1987	2010	23
Meliadine	Gold	1989	2019	30
Back River	Gold	1989	2025	36
Hackett	Zinc, lead, copper, silver	1969	?	>50
Izok	Zinc, copper, lead, silver	1974	?	>45
Kiggavik	Uranium	1979	?	>39
High Lake	Copper, zinc, silver, gold	1956	?	>65

- Finding a mine is not easy
- But even if discovered, the time to production can be VERY LONG.
- Many great deposits are still not mines.

IT IS IMPORTANT WE KEEP EXPLORATION INVESTMENT HEALTHY

Reminder: Exploration is Risky – 999 losers to one winner 😞

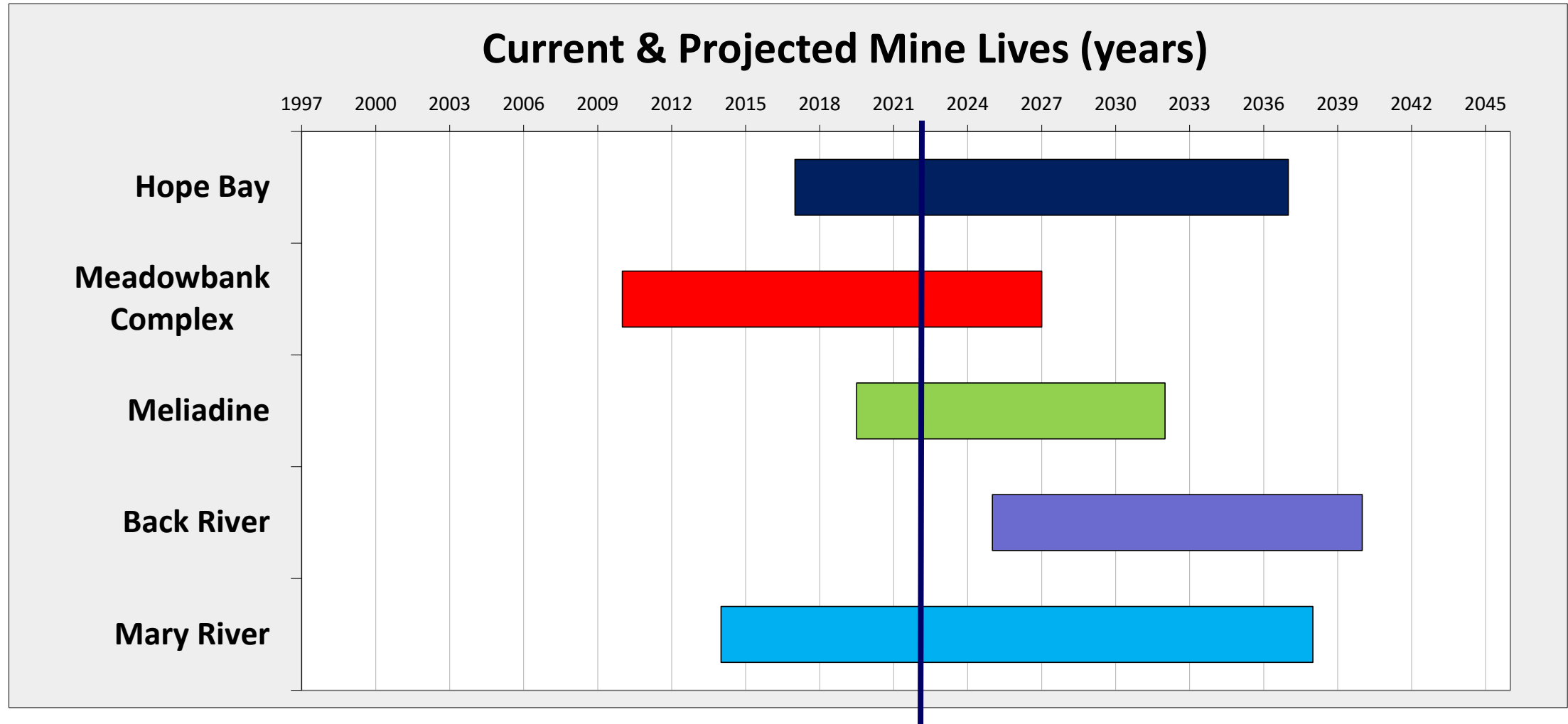
Only 1 in 1,000 exploration projects becomes a mine



- Bingo might have better odds!

- Not every exploration project becomes a mine
- The odds are very much against exploration success, generally only 1 winner in 1,000
- We need “more players, more exploration cards” to increase mine discovery success

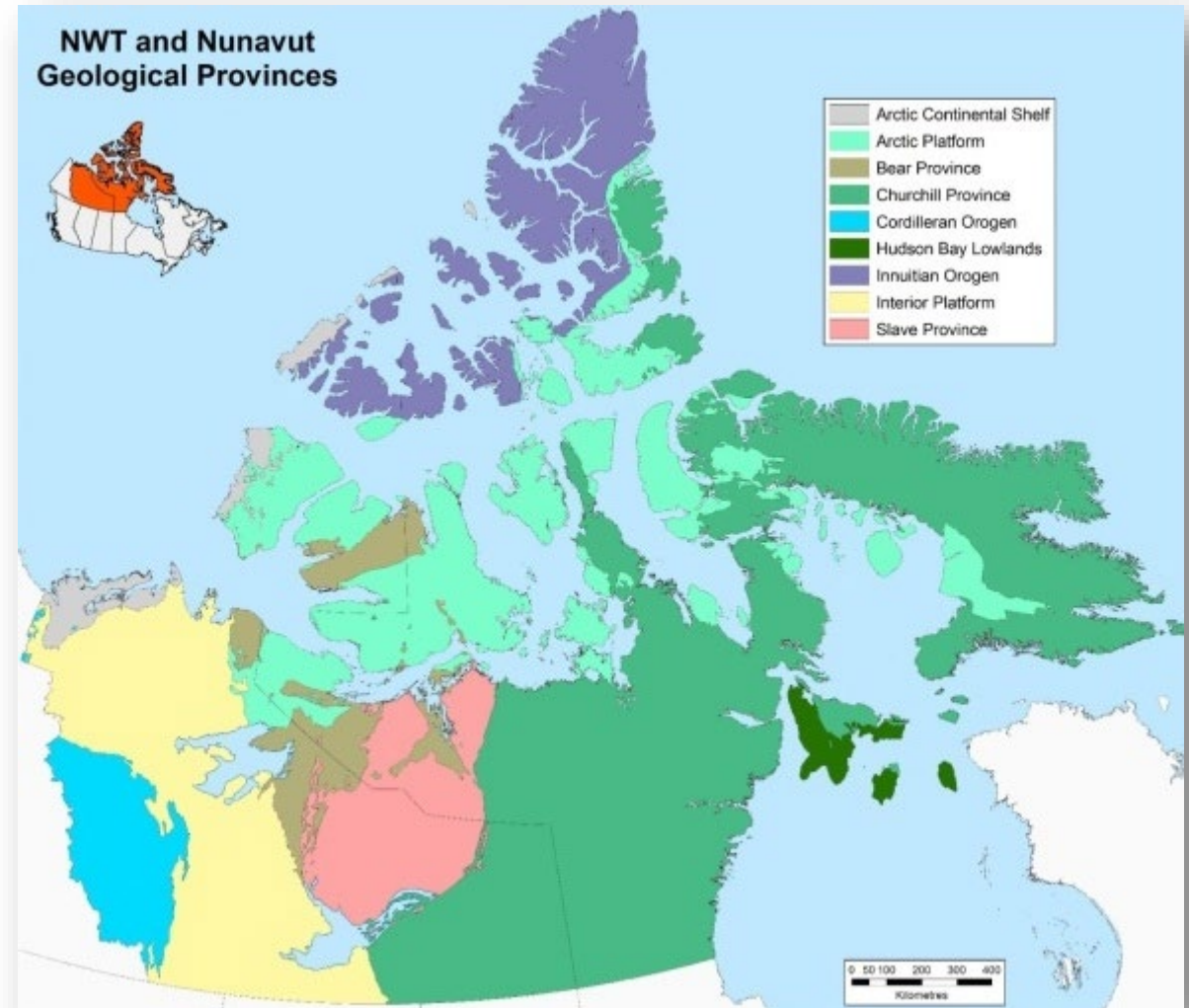
Why exploration is important: Sustain future mining benefits



- Exploration today is to find new mines 10-20 years from now, to replace or extend existing mines.

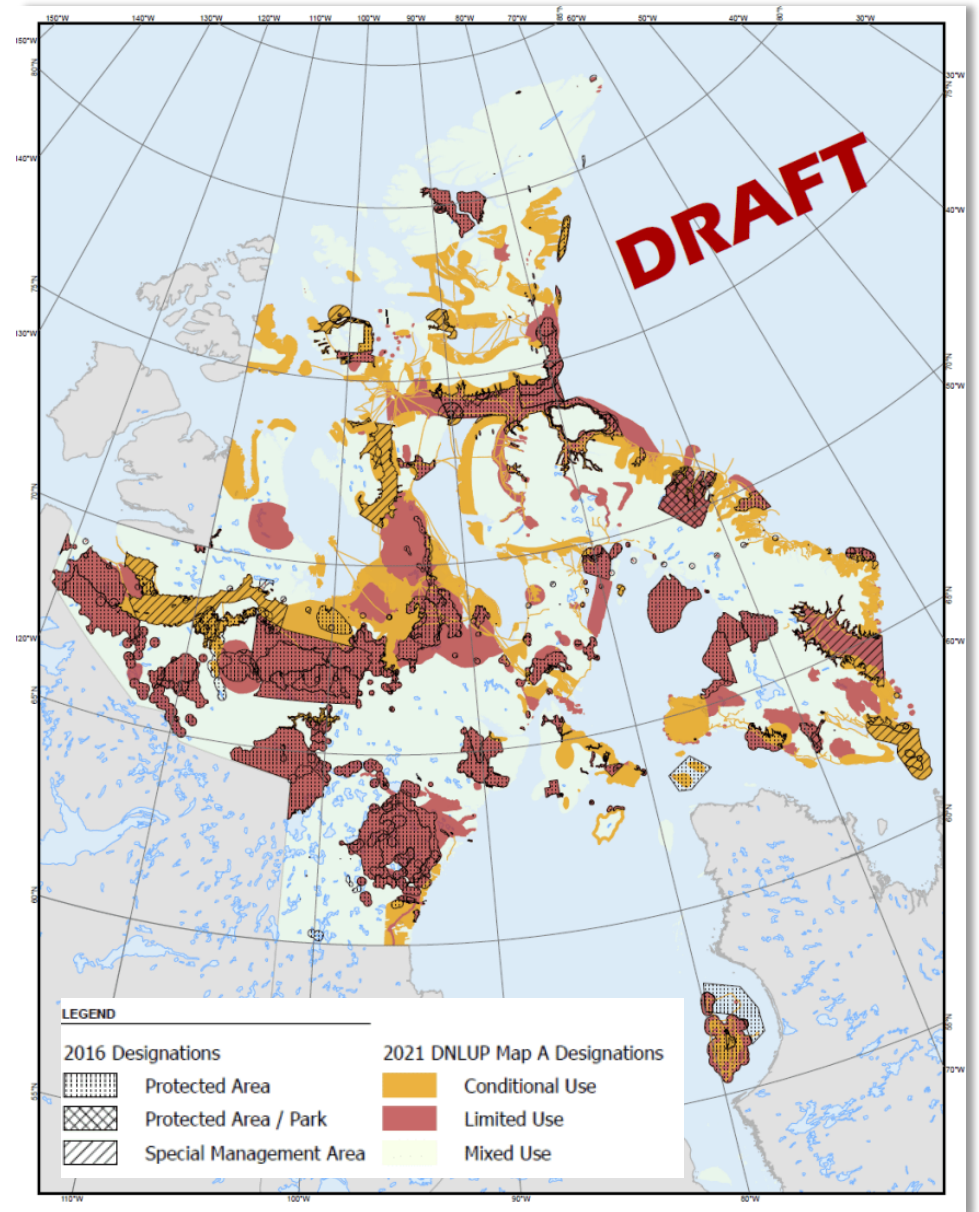
Nunavut has the geological opportunity: Rich Mineral Potential

- The North is as large as Europe
- Great variety in geology
- Diverse mineralogy
 - Gold, silver, diamonds, lead, zinc, uranium, tungsten, rare earths, cobalt, bismuth, nickel, copper, iron, etc.
- Under-mapped & remote means under-explored
- Odds of rich discoveries are high
- Equals tremendous opportunity

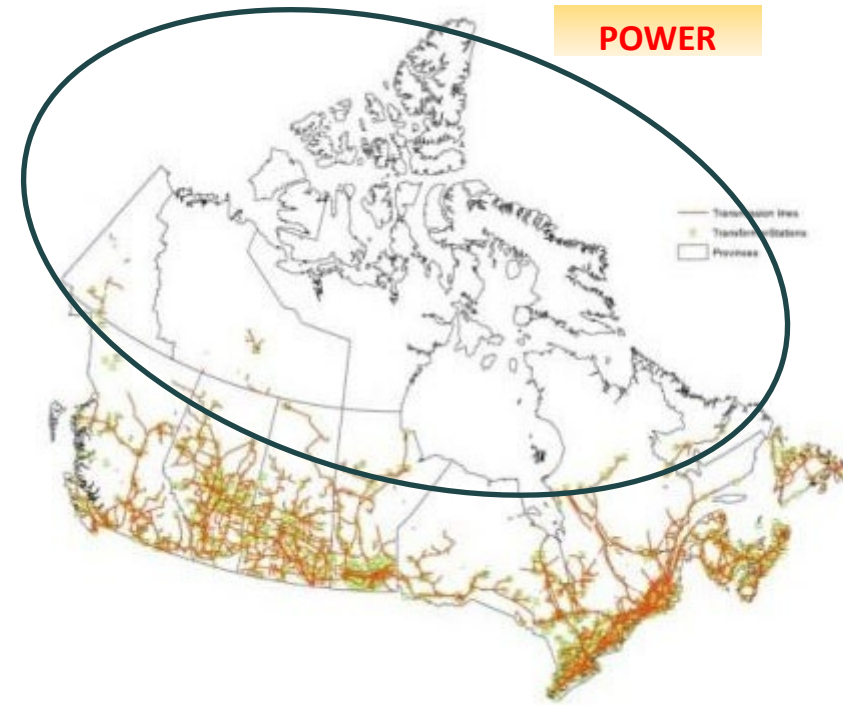
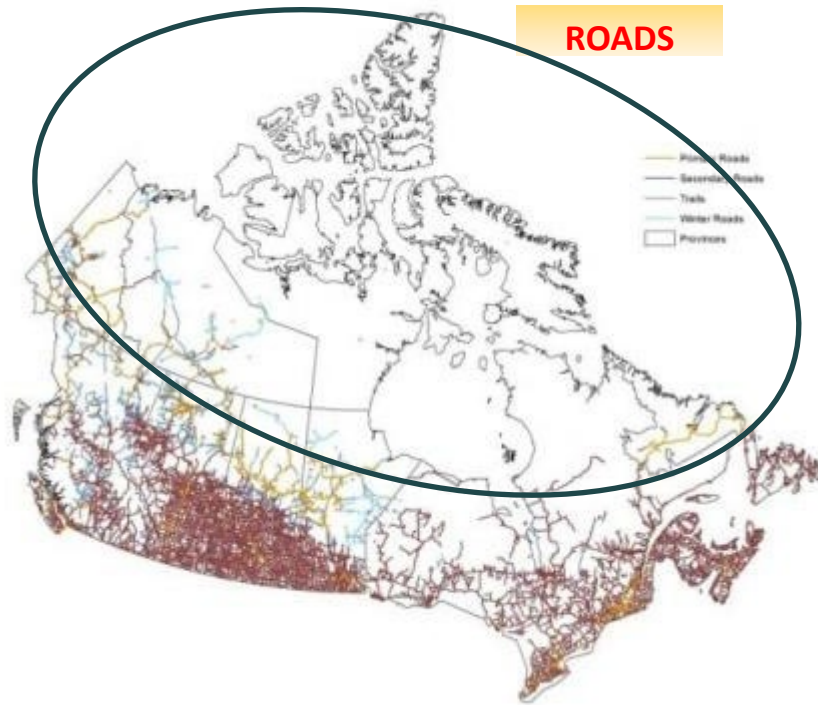


But very concerning land access challenge: DNLUP

- Huge new Limited Use designation
 - Essentially prohibits new exploration & mining
 - Prohibitively constrains existing rights
- Conditional Use adds restrictions
- Significant concerns include:
 - Will compromise development on both Crown and Inuit Owned high mineral potential lands
 - Affects existing projects
 - Grandparenting is overly restrictive
 - Creates significant investment uncertainty
- Reduces other IPGs' responsibilities



Challenge: High costs from large Infrastructure deficit



- Exploration costs up to 6 x higher than the south
- Mine capital costs up to 2.5 times more
- Mine operating costs 30 to 60% higher

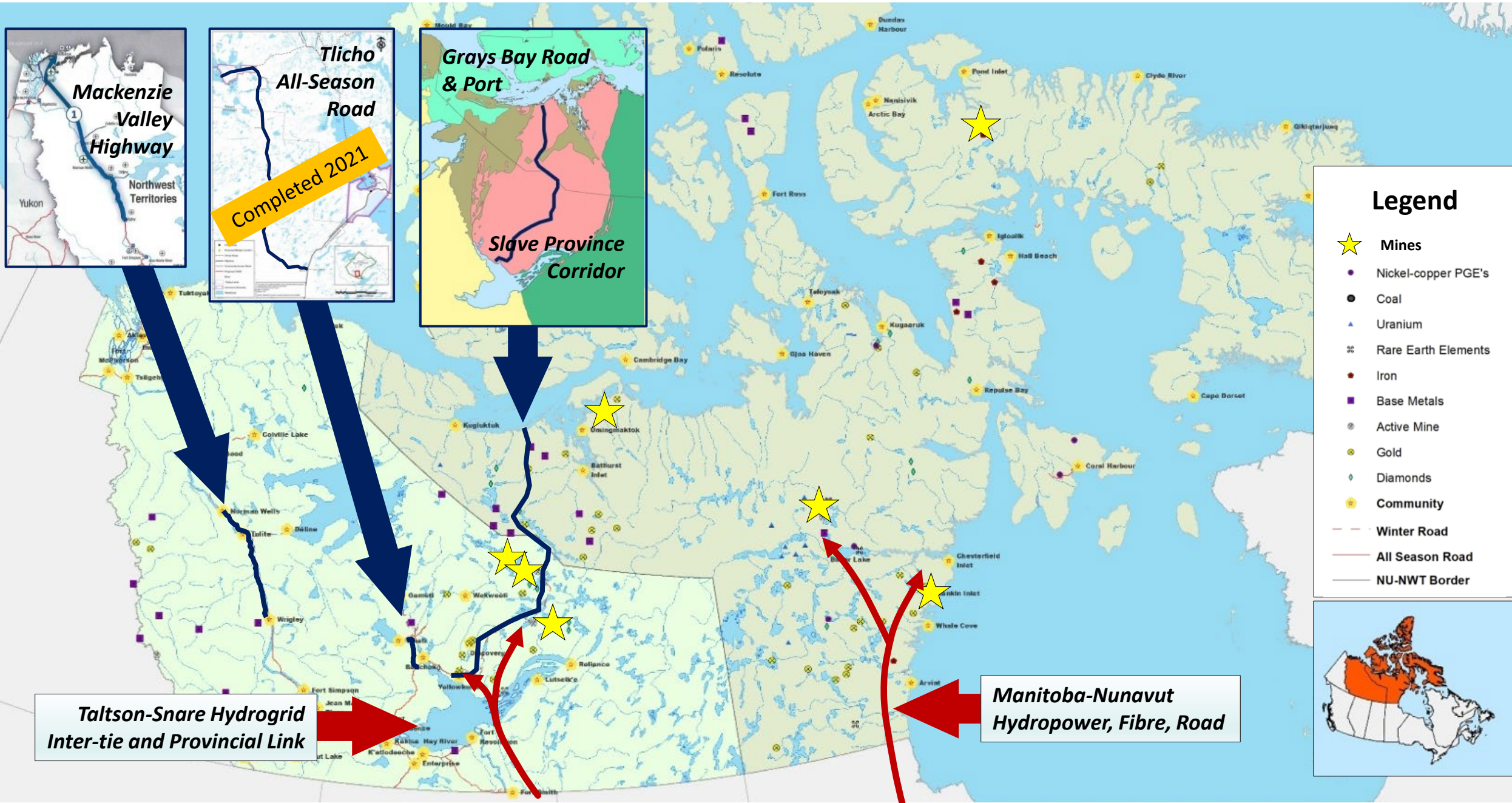
Companies must provide their own power, roads, airports, ports, community services, etc.

Nunavut has many Exciting Opportunities

- Mary River iron expansion
- Hope Bay gold re-evaluation and mine re-start
- Sabina gold construction and start up
- Naujaat and Chidliak diamonds progressing
- Infrastructure – port, road, power, communications
- Increased Nunavummiut mining participation
- And now, a new Critical Minerals opportunity
 - New demand, new strategy, new budget, new promises

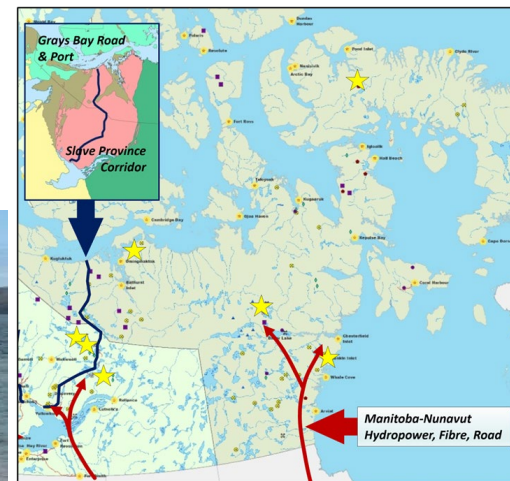


Opportunities: New Infrastructure could help reduce costs, GHG's



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Working together to increase Nunavut employment

- **Raise public awareness**
- **Increase education levels**
- **Train for success**
- **Increase workforce attraction and retention**

Partner for success

- Public governments
- Inuit government
- Companies
- Communities



One tool GN and Chamber are using to help: *MiningNorthWorks!*

Goal: Attract Nunavummiut youth into minerals industry jobs

- New communications tools (translated too!)
 - [Careers catalogue](#) – over 150 different mining jobs
 - [Website](#)
 - Posters, infographics, factsheets, & [‘Mining 101’ booklet](#)
 - Career fair and trade show participation
 - Resource booklet for schools/teachers
- Many positive messages
 - Mining/exploration benefits
 - Diverse careers/role models
 - Did you know?
 - Minerals in our lives



www.miningnorthworks.com



Our latest *MiningNorthWorks!* tool for Nunavummiut youth



Mining North Works!



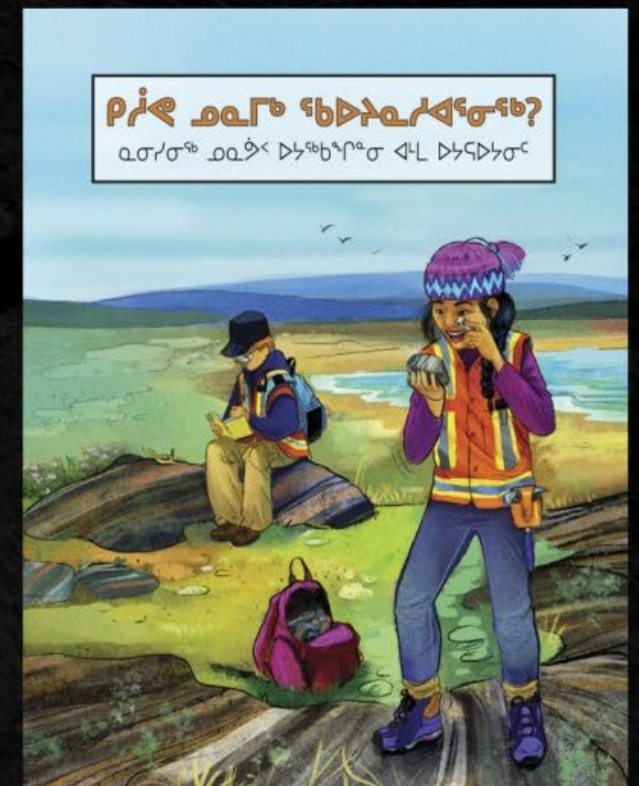
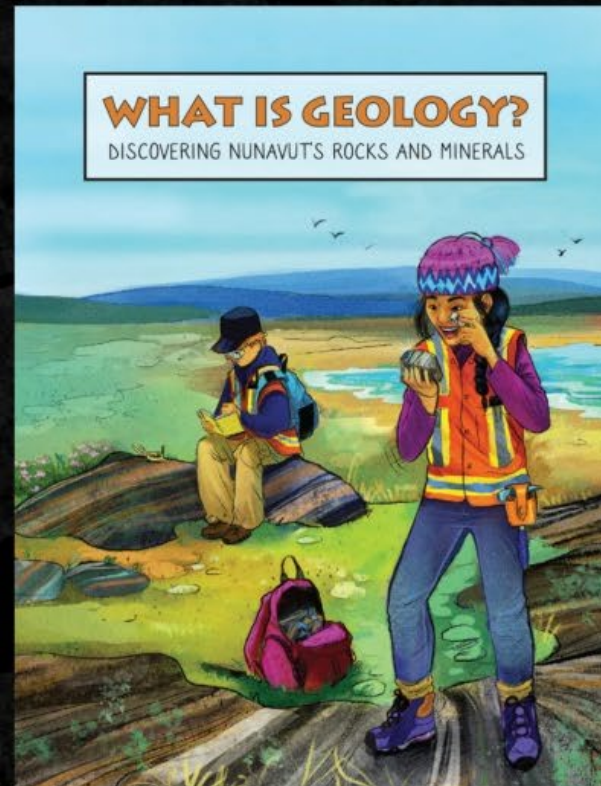
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- Where It Works ▾
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- Careers ▾

WHAT IS GEOLOGY? DISCOVERING NUNAVUT'S ROCKS AND MINERALS

This fun and informative booklet is a great resource for kids to learn more about geology in Nunavut.

CLICK ON THUMBNAILS TO DOWNLOAD PDF

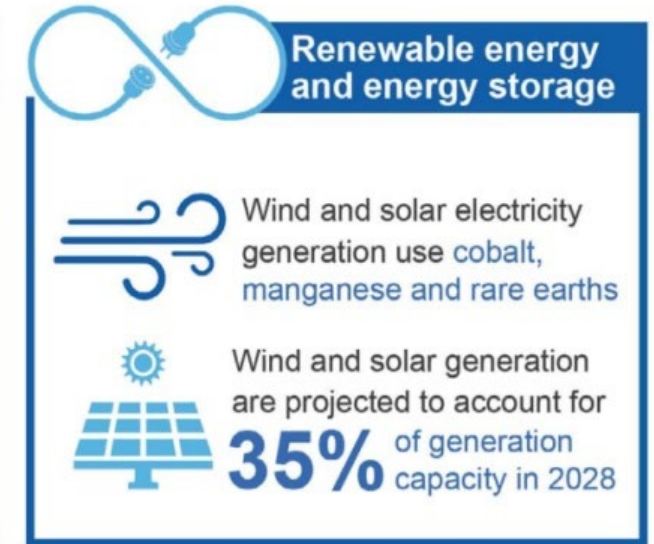
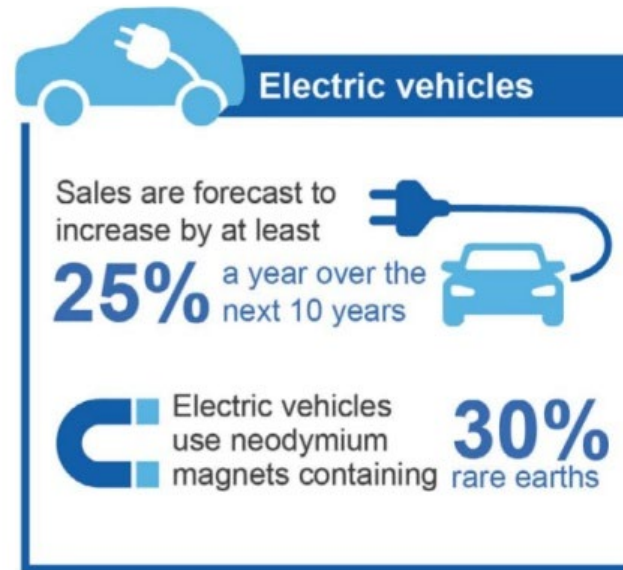


Critical Minerals and Climate Change

- **Critical Minerals play key role in energy transition for:**
- Climate Change
- Defense applications
- Economic well-being of the world's major and emerging economies

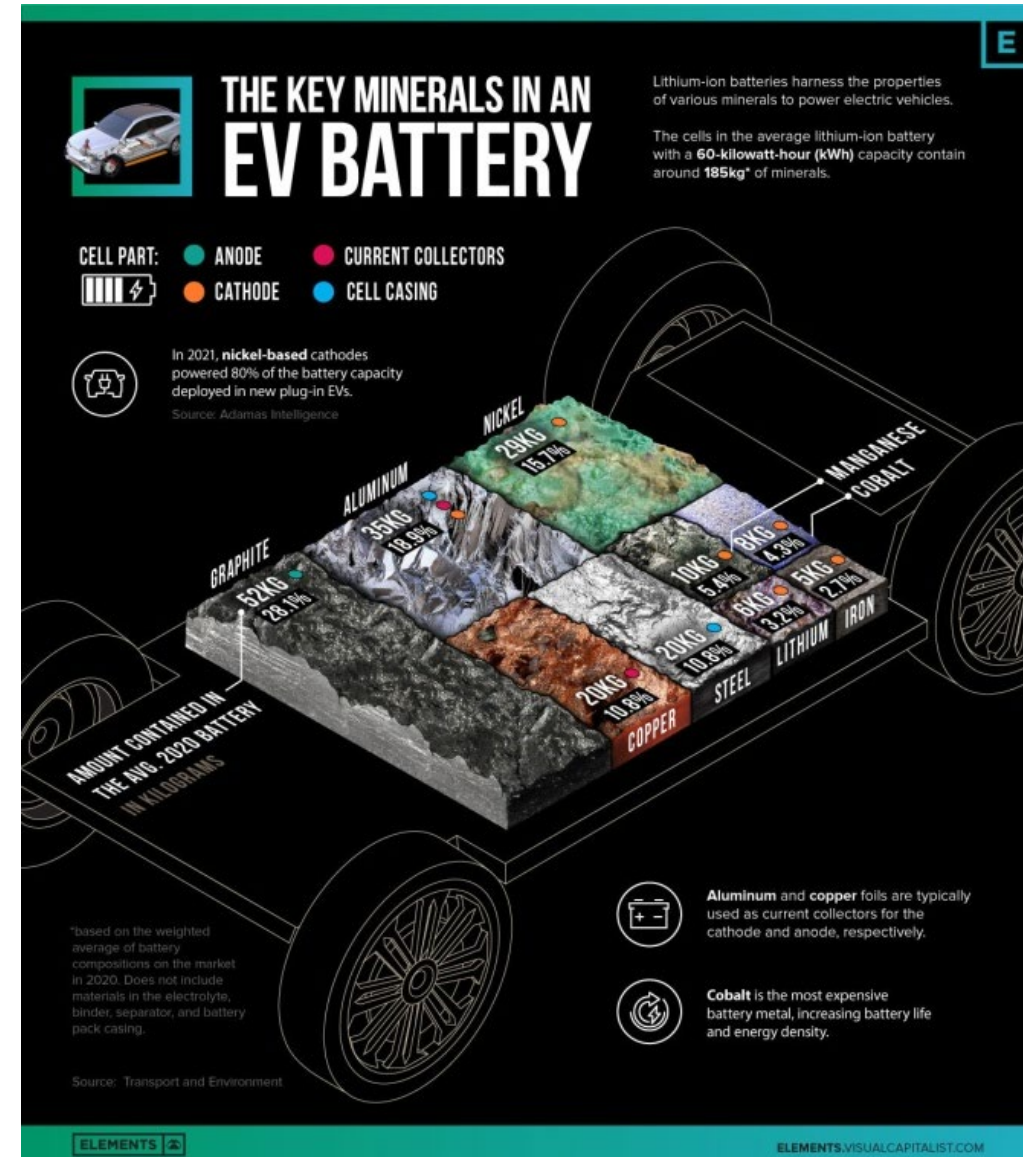
Concerns?

- Supply at risk due to geological scarcity, geopolitical issues, trade policy and other factors.



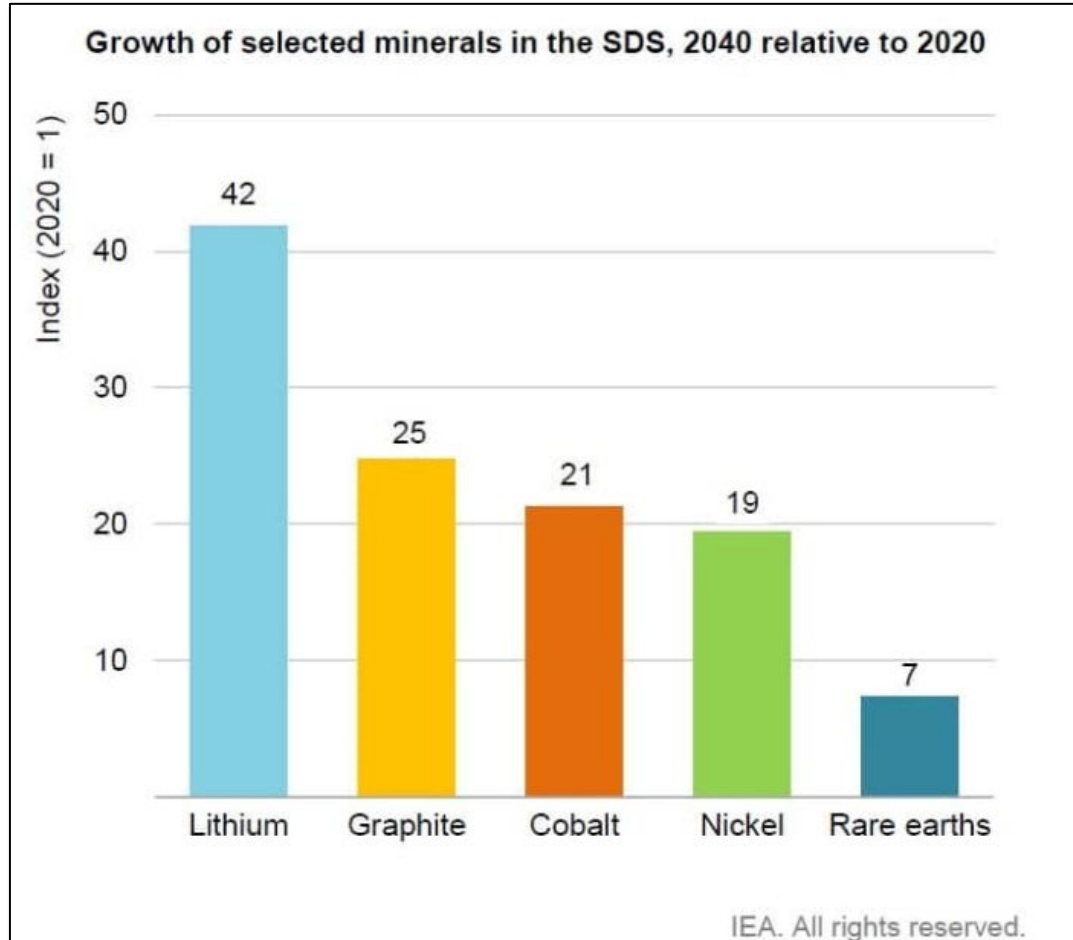
Example: Key Minerals in an EV Battery

- Graphite – 52 kg
- Aluminum – 35 kg
- Nickel – 29 kg
- Copper – 20 kg
- Steel – 20 kg
- Manganese – 10 kg
- Cobalt – 8 kg
- Lithium – 6 kg
- Iron – 5 kg



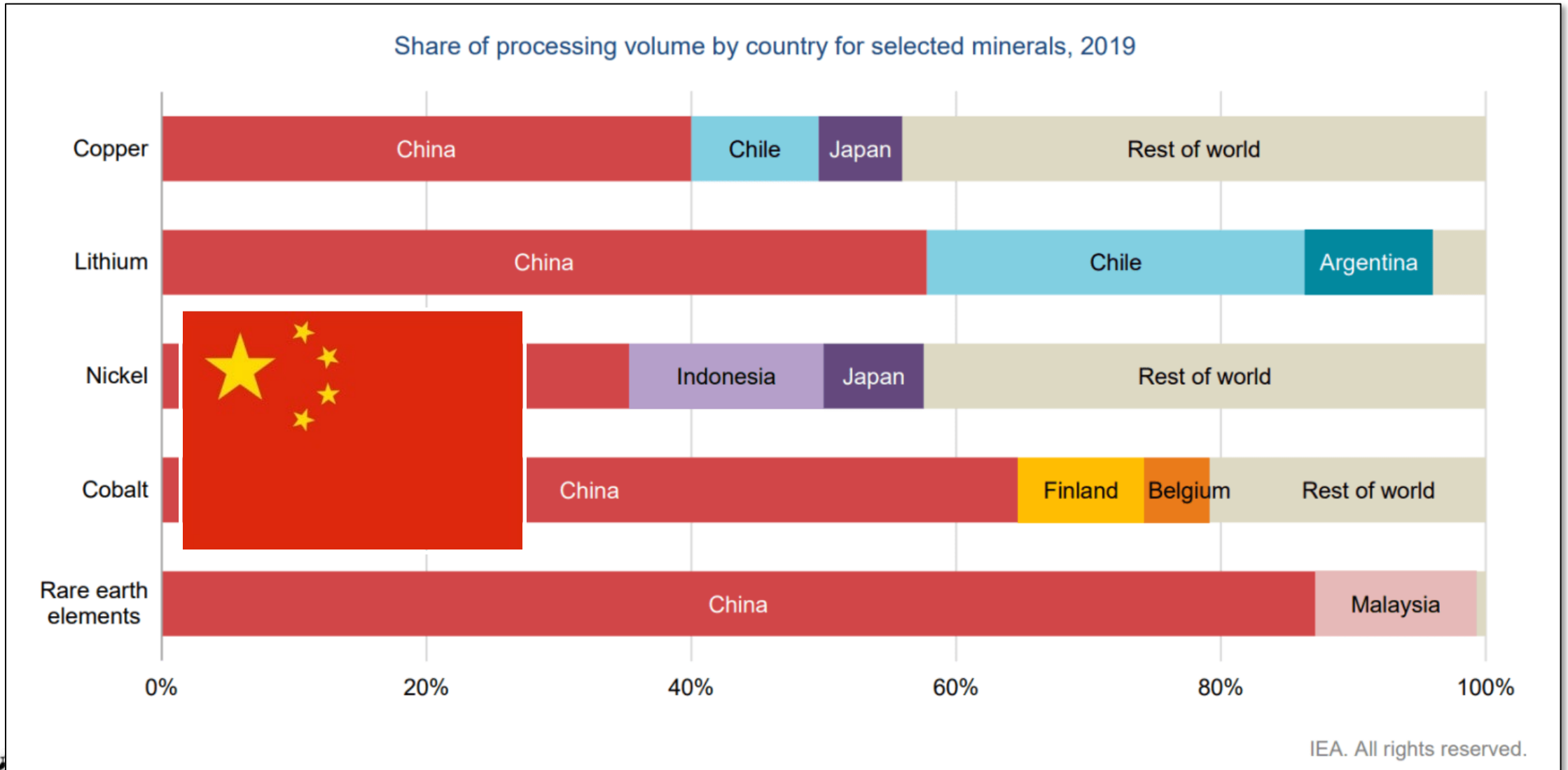
Average 2020 battery - Credit: [The Visual Capitalist](#)

Clean energy needs will “supercharge” critical mineral demand

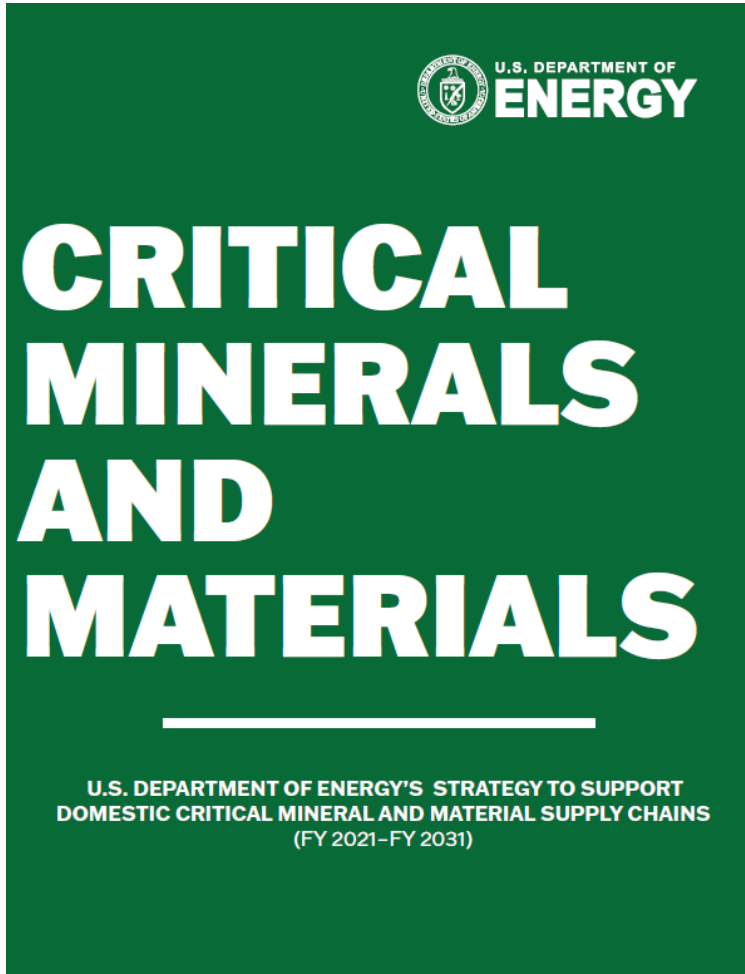


- Paris Agreement goals will require significant increased demand for critical minerals for electric vehicles, battery storage, solar and wind energy, etc
 - 42 times the lithium required
 - 25 times graphite
 - 21 times cobalt
 - 19 times nickel
 - 7 times rare earth elements

Concern: China has dominance in critical minerals processing

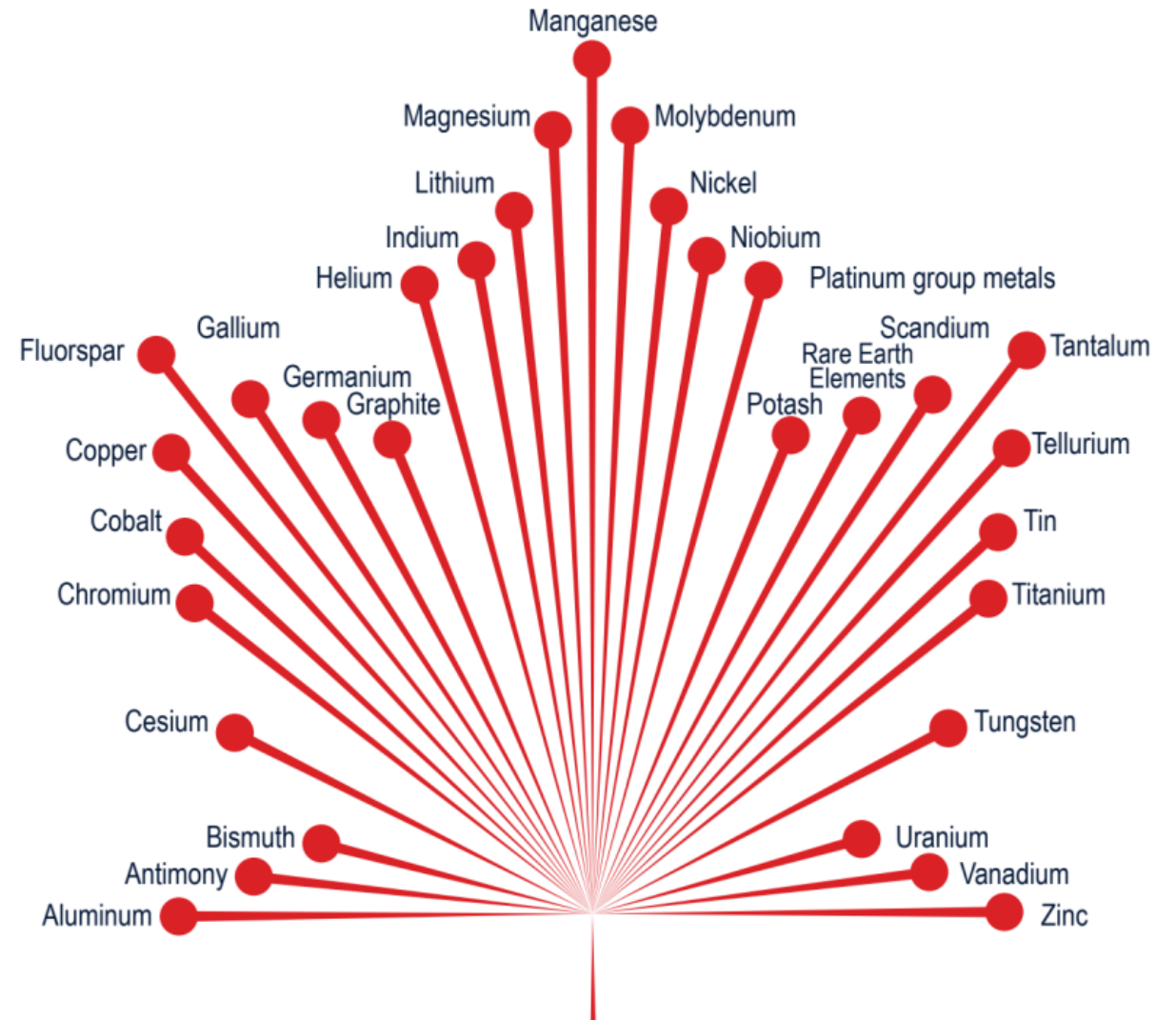


The Western World is taking action to create its own supply



Canada is creating its own Critical Mineral Strategy

- 31 minerals essential to Canada's economic security
- Required for Canada's transition to a low-carbon economy
- A sustainable source of critical minerals for our partners
- NWT is working on its own *Critical Minerals Action Plan*



Canada's recent budget is very bullish on critical minerals

Federal budget proposes \$3.8B to support Canada's critical minerals industry



Finance Minister Chrystia Freeland delivers the 2022 Federal budget

FINANCIAL POST

Canadian miners cheer Ottawa's \$3.8-billion critical minerals budget plan

'This is a game-changer'



Reuters
Ernest Scheyder and Steve Scherer

Trudeau presses for Canada to become a critical mineral powerhouse

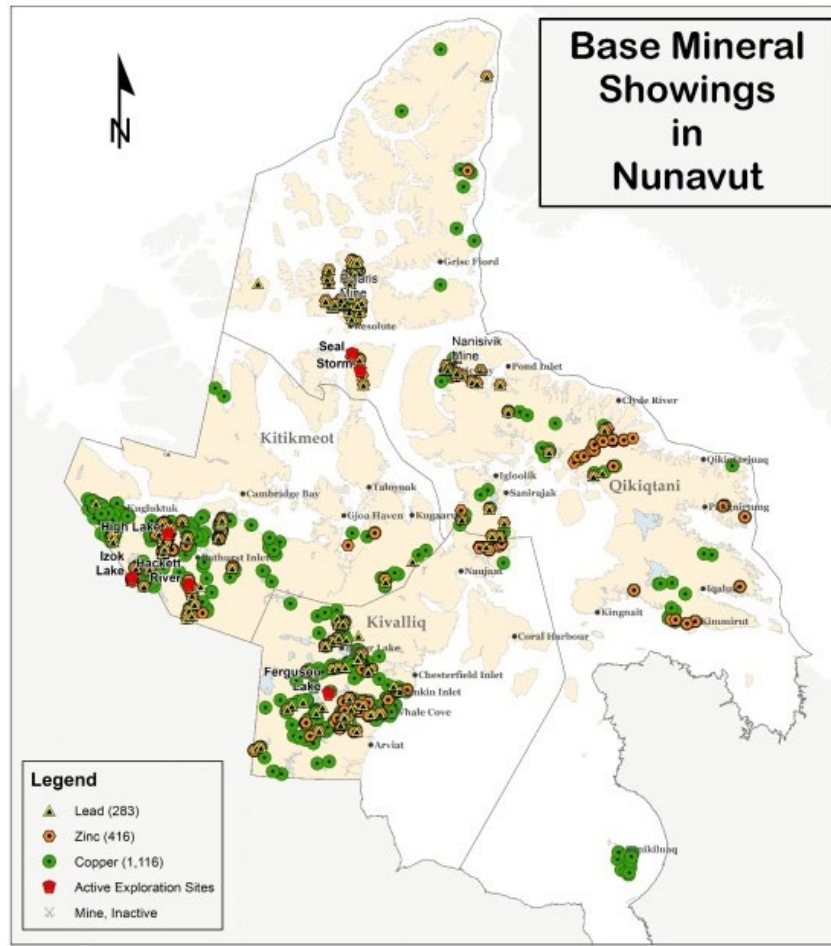
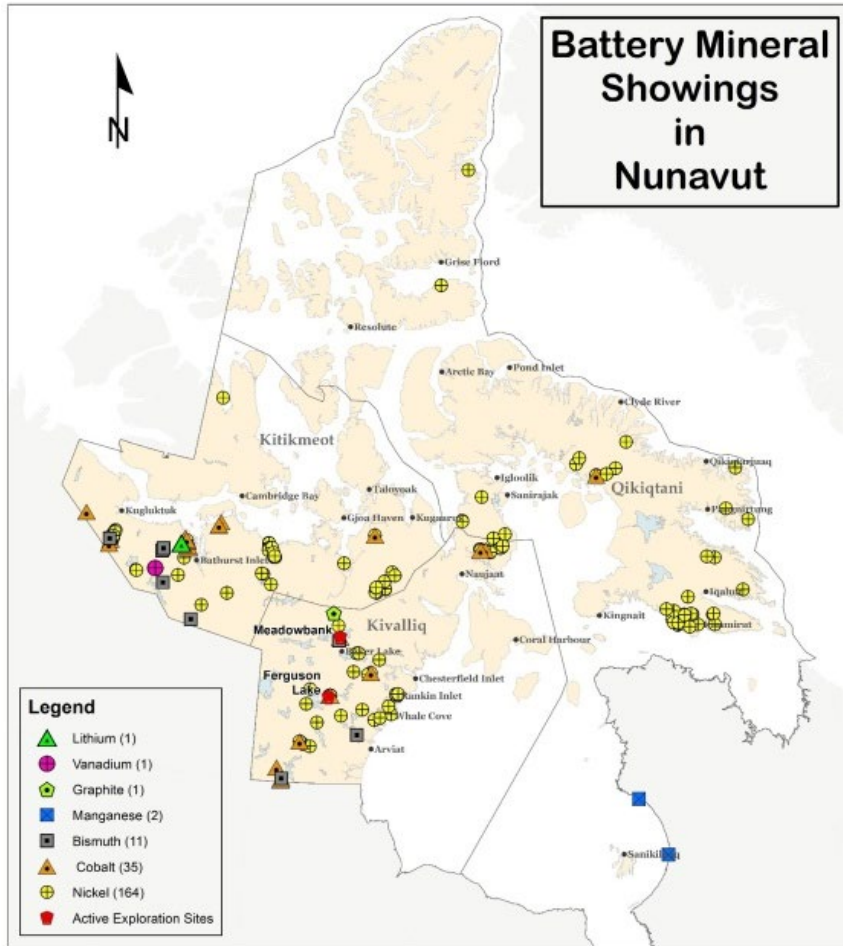
ROBERT FIFE > OTTAWA BUREAU CHIEF
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OTTAWA
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Nunavut has Critical Minerals Opportunities



Nunavut has:

- Occurrences of 8 Critical metals or minerals known
 - Copper, zinc, graphite, lithium, manganese, PGE, REEs, and uranium
- Varying amounts of others
- Battery Mineral Showings
 - Li, Va, graphite, Mn, Bi, Co, Cr, and Ni

Maps courtesy CIRNAC



Reminder: Governments are Resource Partners – need to help

- Governments own the mineral resources NOT companies
- They invite companies to come do what they cannot do themselves:
 - Find, raise and bring money to invest,
 - Absorb significant risks (only 1:1,000 odds of success), and
 - Apply expertise to find, develop and convert mineral resources into public benefits.
- As the resource owner, and the inviter, Governments (Indigenous too) have a role in helping their industry become successful in creating benefits.

Where we are asking governments for help

- Our pre-budget ask of Canada and what they gave:
 - ✓ Reduce regulatory complexity
 - ✓ Provide project specific infrastructure support
 - ✓ Provide critical minerals supply chain support
 - ✓ Provide regional infrastructure in roads, hydropower, ports
 - ✓ Support Indigenous economic reconciliation throughout
 - ✓ Create a “North of 60” Mineral Exploration Tax Credit of 40%

- Hallelujah! Federal Budget 2022 supports virtually all those concepts.
- The North needs Canada to focus Budget commitments on the North.

Remiss if I didn't tell you ...

- Critical minerals are important to our future, without a doubt
- However, frankly all minerals are critical to our Nunavut economy and deserve support, including diamonds, gold, silver, etc.
- Thankfully, we have a number of additional and welcome investors that continue to persevere and finance exploration and development activities
- A rising tide of governments' support would lift all boats



Addressing challenges and seizing opportunities = Nunavummiut success!

