

Mining & Mineral Exploration in the NWT – *A Backgrounder and Guide for Election Candidates* –

The following information is intended to help candidates learn more about the NWT's minerals industry, its importance to the economy, and what steps can be taken to strengthen it.

A reminder: Why is Industry here?

- At Governments' invitation
- To do what governments cannot do
 - Convert rock into benefits – training, jobs, business spending, tax revenues
 - Assume the risks of exploration, mining and the markets
 - Bring considerable investment money to do the job
 - Bring expertise to share and build capacity & wealth
- Industry can do a fine job, but ... it can't do this alone
- Industry needs collaboration and support from all governments – NWT, federal & Indigenous – to maximize resource success

Key Messages

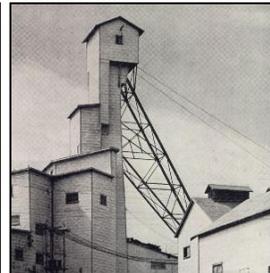
- Part 1 – Why the minerals industry is important
 - Mining’s historical contributions
 - Current mines and advancing projects
 - Industry’s importance to the NWT – communities, business, governments
- Part 2 – What’s possible, but ...
 - Significant opportunity and potential in the wings, but ... challenges
- Part 3 – Rejuvenating the minerals industry and the NWT economy
 - Addressing challenges to sustain and grow opportunities

Part 1 – Why the minerals industry is important

Mining is the NWT and Nunavut's economic advantage

– 80 plus years of mining history –

- 1930s – Eldorado (radium), Con, Negus, Rycon (gold)
- 1940s – Giant, Thompson-Lundmark (gold), Eldorado (uranium)
- 1950s – Rankin (nickel), Discovery (gold)
- 1960s – Pine Point (zinc-lead), Cantung (tungsten), Echo Bay (silver)
- 1970s – Nanisivik (zinc), Terra (silver)
- 1980s – Polaris (zinc-lead), Lupin (gold), Cullaton Lake (gold)
- 1990s – Colomac (gold), Ekati (diamonds)
- 2000s – Diavik, Snap Lake, Jericho (diamonds)
- 2010s – Meadowbank and Hope Bay (gold), Mary River (iron), Gahcho Kué (diamonds), Meliadine (gold)



Mining is the anchor “tenant” contributing to legacy infrastructure

- Mining Communities: Yellowknife, Rankin Inlet
- Roads to Resources, eg: highways to Yellowknife, Pine Point Ft. Resolution
- Railway to Hay River
- All 3 NWT hydro-electric facilities
- Marine shipping & ports
- Microwave communications
- Nunavut “highway system”

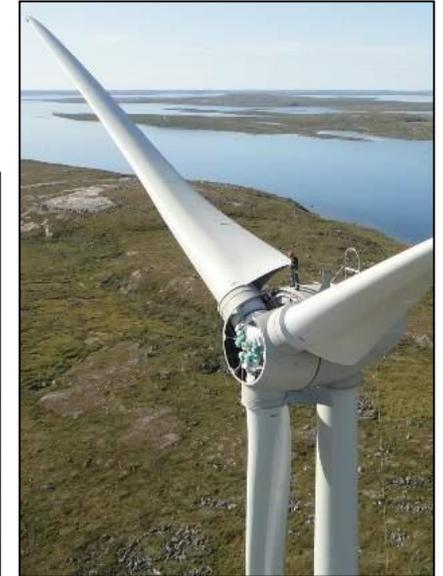


Mining contributes Technical Innovation

- High efficiency diesel power – twice the efficiency of community plants
- Award-winning dikes to allow mining under lakes
- Innovative wind energy at Diavik
- Engineered ice “highways”
- Arctic shipping technology



Heat recovery on diesel electrical power plants



Diavik's wind turbines



MV Arctic ice breaking technology

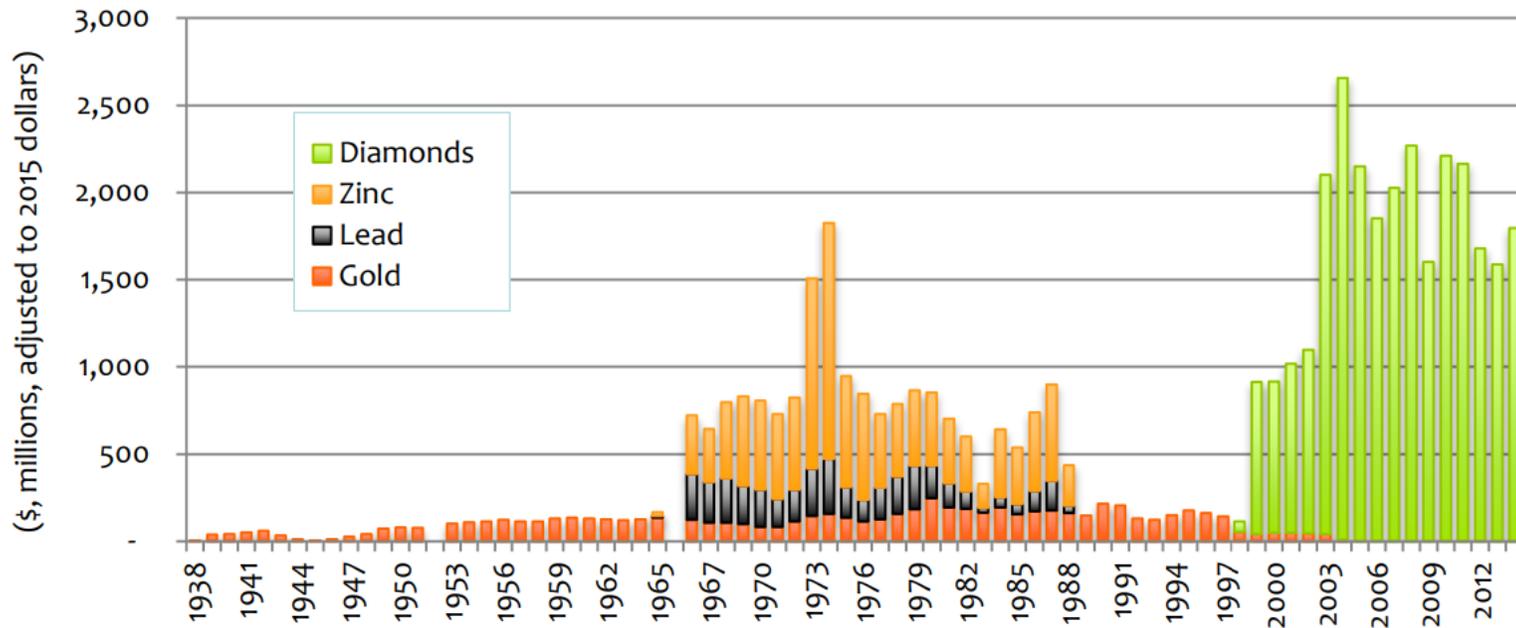


National award winning Diavik dikes



Engineered ice road “highways”

Significant changes in our minerals industry

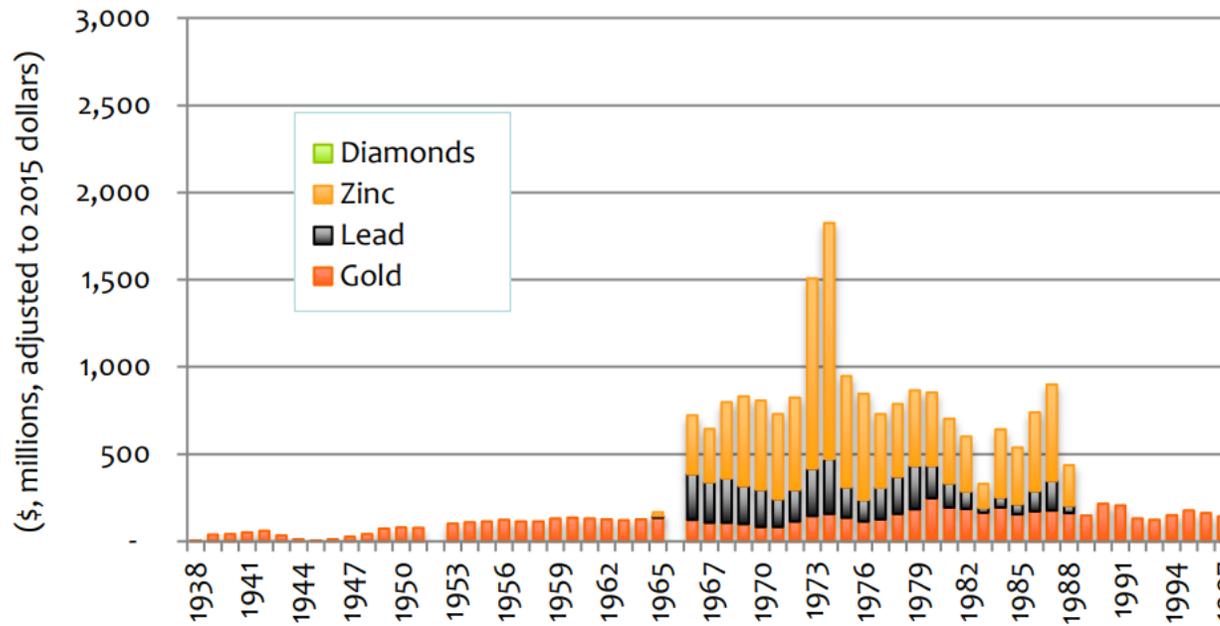


- 4 diamond mines have brought unprecedented new value to NWT, and ...
- Ushered in a new era of “modern mining” (next slide)

Source: NWT Bureau of Statistics, *Mineral Production*; Statistics Canada, *Inflation Rate*.



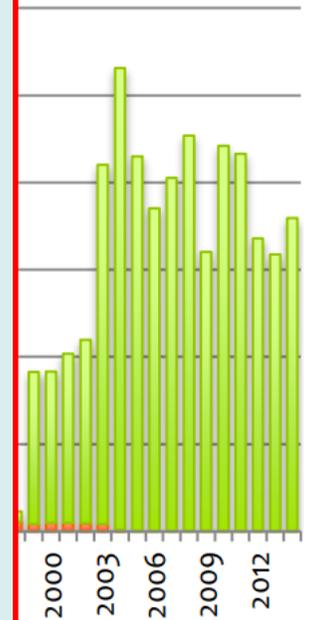
Mining today: It's not our grandfathers' or even fathers' industry



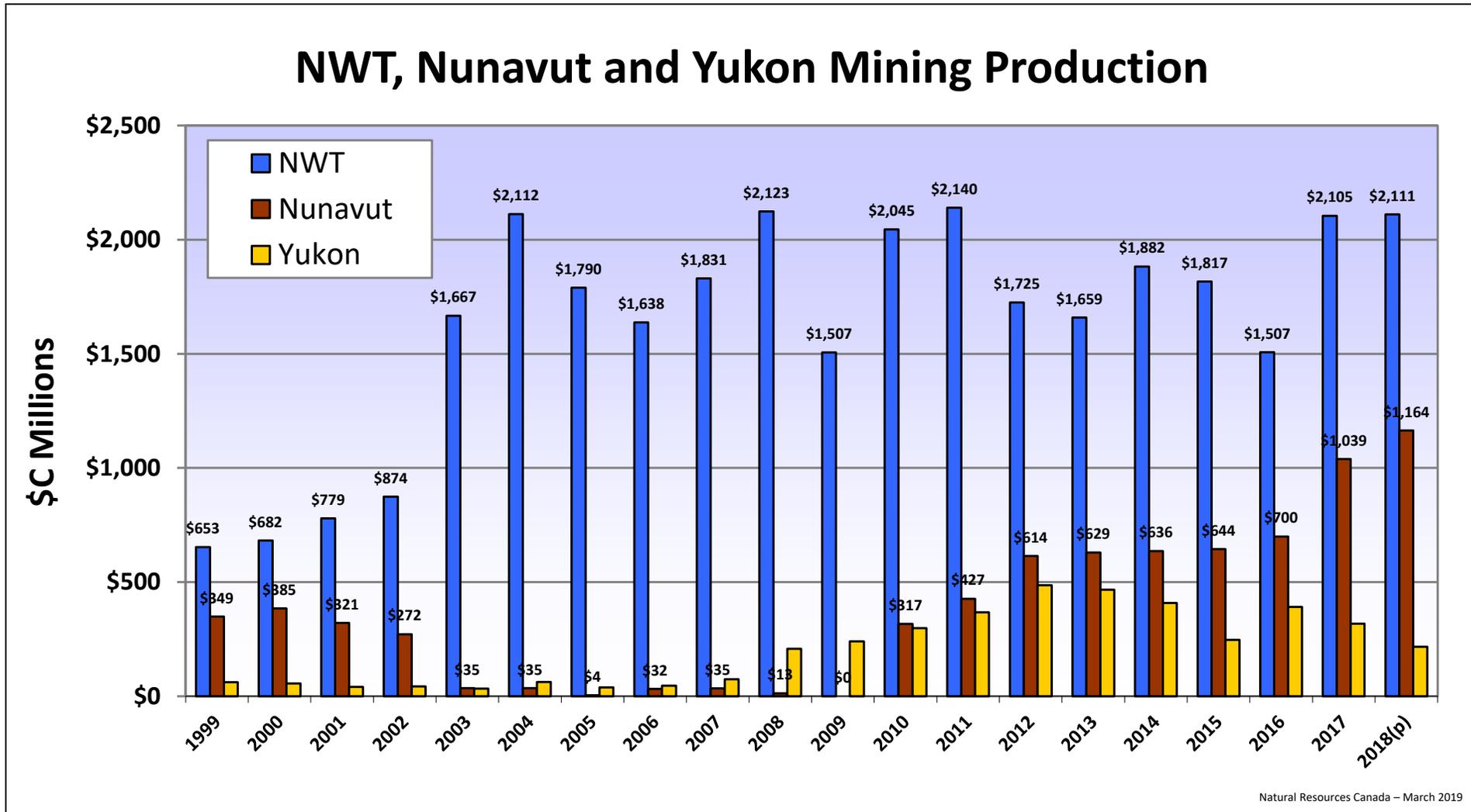
Source: NWT Bureau of Statistics, *Mineral Production*; Statistics Canada, *Inflation Rate*.

Significant improvements in 25 years

- Operate to new land claims based legislation under co-management boards
- Environmental management systems to international ISO14001 standards
- Oversight from individual mine environmental monitoring boards
- Closure planning even before construction
- Mines and exploration fully secured for clean up
- Socio economic agreements for each mine
- IBA's (with scholarships, business, etc.)
- Indigenous training
- Indigenous businesses
- Mines spreading benefits: flying workers in from all over the North
- Significant taxes and royalties to public, and for first time, Indigenous governments

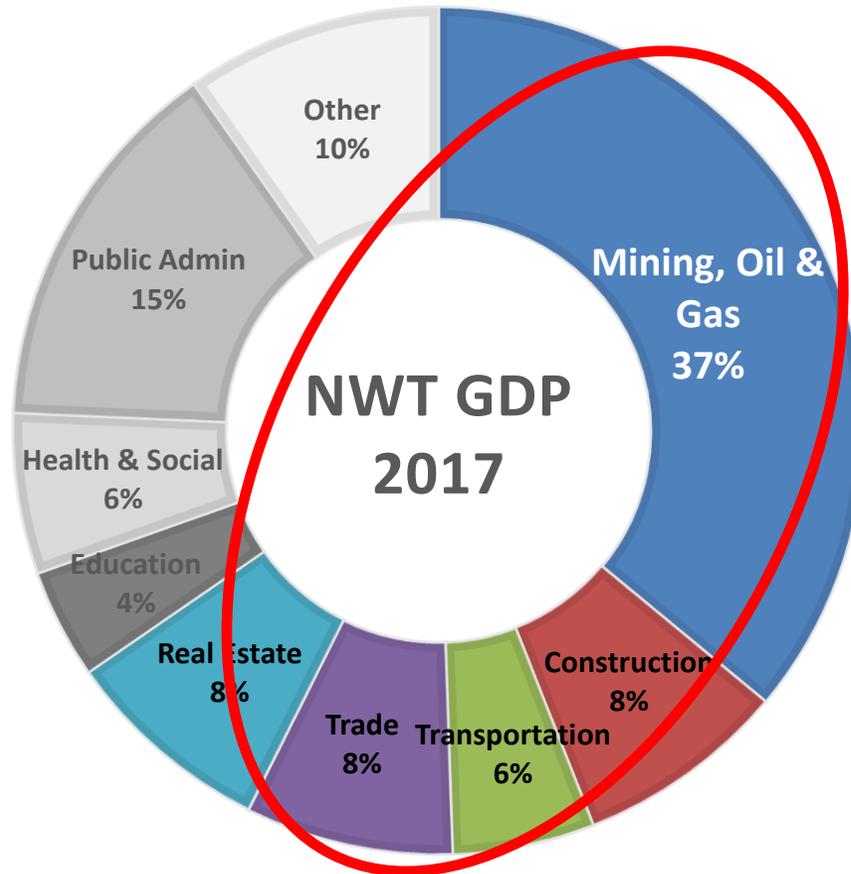


Mines produce significant value



- Short term: NWT mining is currently maintaining production value; long term will see decline
- Nunavut continues on a growth curve, making a comeback from zero production in 2009

NWT's largest private sector economic contributor



“Over the past 3 years, diamond mines contributed 41% of the GNWT's corporate income, fuel, property and payroll tax revenue”

... GNWT Spokesperson

- The largest direct private sector contributor to NWT economy
- And even larger with indirect contributions to other sectors, eg, construction, transportation, etc.

NWT diamond benefits are significant

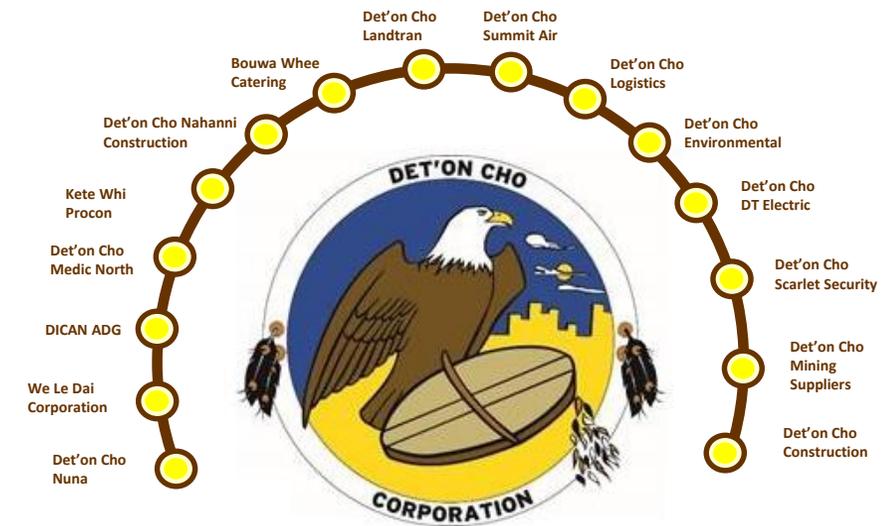
Since 1996:

- 61,495 person-years of employment
 - 48% northern / 52% southern / 24% Indigenous
- \$21.0 billion in business
 - \$14.6 billion northern business of which \$6.3 billion Indigenous
- Well over \$200 million to communities in IBA payments, scholarships, donations
- \$billions in various taxes, royalties to governments (public and Indigenous)



Zoom in: benefits to one Indigenous corporation – Det'on Cho

- **Approximate YKDFN employment:**
 - 100 members are employed directly by the mines and another 100 members indirectly (through companies such as DCC, etc.)
- **Det'on Cho Corporation employment:**
 - DCC has approximately 220 direct employees with an additional 660 workers through partnerships and JVs (Approximately 70% NWT residents)
- **Bouwa Whee Catering:**
 - 160 employees, 90% are NWT residents, 50% are Indigenous
- **DCC contribution to local economy:**
 - Average \$90,000+ / year (higher earning than National avg)
 - \$54M in wages (\$90K * 600) spent in local economy
 - Transfer payment: \$17,650,000 (600 * \$29,431)



Data courtesy Det'on Cho Corporation



Training has been essential to facilitate employment success

Mine Training Society's Results: 1,471 people employed

- 7% of the entire NWT working labour force

Recipe for Success:

- Influential Partners
 - Aboriginal Governments
 - Industry
 - Public Government
- Partner funding: Over \$53 million since 2004
- REAL JOBS after training



Mine Training Society
NORTHWEST TERRITORIES

“Where training and jobs get together”

Indigenous mining business development

Mining has spawned a new generation of Indigenous businesses in NWT and Nunavut

NWT Indigenous Businesses

- Tli Cho Logistics Inc.
- Tli Cho Landtran Transport Ltd.
- Tli Cho Air Inc.
- Tli Cho Road Constructors Ltd.
- Tli Cho Blasting Services Inc.
- Denesoline Western Explosives
- Aboriginal Engineering Ltd.
- Tlich Engineering & Environmental Services Ltd.
- Ventures West Transport Ltd.
- Metcrete Services Ltd.
- Metshaw Freighters Ltd.
- Kete Whii Ltd.
- Kete Whii Procon J.V.
- Sodexho Alliance
- Exploration Medical Services
- Kitikmeot Cementation Mining & Development
- Lac De Gras Constructors
- Nishi Khon SNC Lavalin Inc.
- North Slave Logistics
- Nuna Logistics
- Malca-Amit (NWT) Ltd.
- Nishi Khon / SNC Lavalin Inc.
- Tundra Site Services North
- KBEX

- Ekati Services
- Det'on Cho Earth Energy
- Det'on Cho DNX
- Bouwa Whee Catering
- Det'on Cho Foraco
- Det'on Cho Hazco
- Det'on Cho Nahanni Construction
- Det'on Cho New North
- Det'on Cho NUNA
- Det'on Cho Pure Earth Elements Environmental Solutions
- Det'on Cho Scarlet Security
- Det'on Cho Stantec
- Det'on Cho Training & Conference Centre
- Det'on Cho Logistics
- Det'on Cho Medic North
- Det'on Cho Mining Supplies
- DICAN / ADG
- Kete Whii / Ledcor
- Kete Whii / Procon
- Akaitcho Helicopters
- Dene-Emco Ltd.
- Denesoline/Air Tindi Joint Venture
- Denesoline/Arcan Construction
- Denesoline/De Beers Labour Contract
- North Slave Freighters Ltd.

- Northcan Freighters Ltd.
- Denesoline/Discovery Mining Services – Logistics Expediting
- Denesoline/Deton Cho/Procon
- Denesoline/Deton Cho/Ledcor
- Denesoline/Dyno Nobel
- Denesoline/ESS Compass
- Denesoline/McCaw Drilling & Blasting
- Denesoline/Nuna Logistics
- Denesoline/Tlich Logistics
- Lutsel K'e Air Services
- A.T.B. Construction
- Trinity Helicopters

Nunavut Indigenous Businesses

- Kitikmeot Caterers
- Kitikmeot Cementation Mining & Development
- Geoteck Ekutak
- Medic North Nunavut
- Nunavut Sealink & Supply
- Nanami Stantec Ltd
- Toromont Arctic Ltd
- Kitikmeot Blasting Services
- Kitikmeot Tire
- Kusugak Consulting
- Qikiqtani Industry Ltd.

- Nuna Group of Companies
- AGLU Consulting & Training
- Kitikmeot Caterers Ltd.
- Medic North Nunavut
- Baker Lake Contracting & Supply
- Forest North Aviation & Logistics
- Eskimo Point Lumber & Supply
- Kivalliq Expediting & Storage
- Kitikmeot Blasting Services
- Kitikmeot Cementation Mining
- M & T Enterprises
- Kasuk Exploration
- Jago Services
- Qillaq Innovations
- Toromont Arctic
- Kitnuna
- Oomilik Enterprises
- Akhaliak Consulting
- Qillaq Innovations
- Kiluk Ltd.
- Peter's Expediting Kitnuna



Taxes and Royalties

– Significant to public & Indigenous governments –

- Taxes

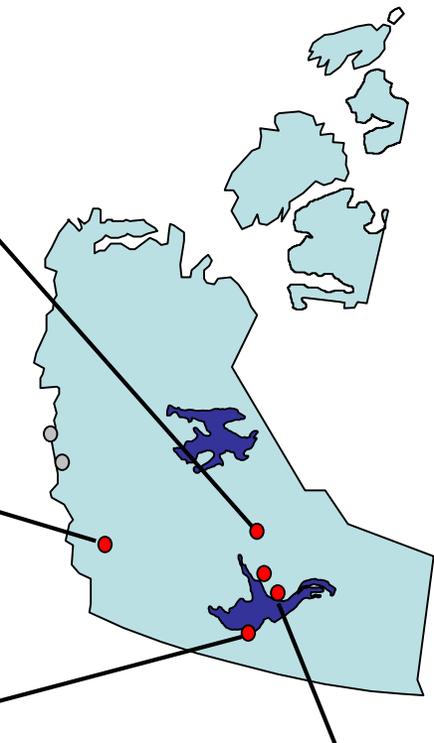
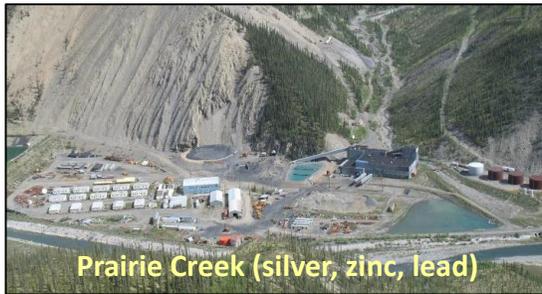
- \$ Billions paid to governments of Canada, NWT, Nunavut in various taxes
- Tlicho Government collects 95% of income taxes in their land claim region

- Royalties

- Canada has been the main recipient, and shares with settled land claimants
- Under Devolution, Canada now shares 50% of royalties with NWT Government
 - NWT Government shares 25% of the royalties with Indigenous governments
- Canada retains 50% of the royalties

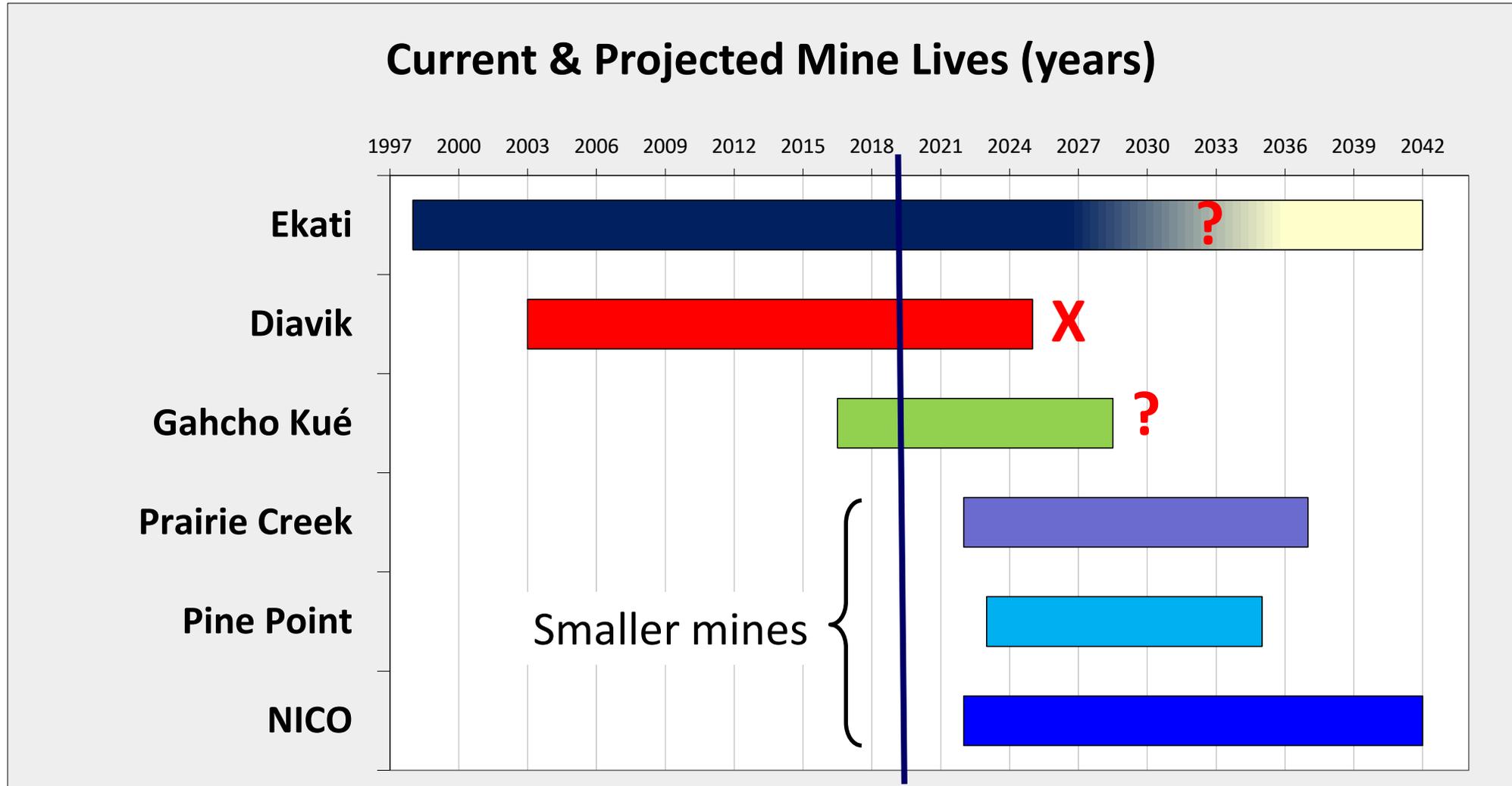
Part 2 – What's possible, but ...

Projects in our Future: what's on deck?



- Four projects advancing to mining decisions
- They are smaller mines, insufficient to offset the closure of the Diavik mine in 2025
- They are not guaranteed mining operations, yet.

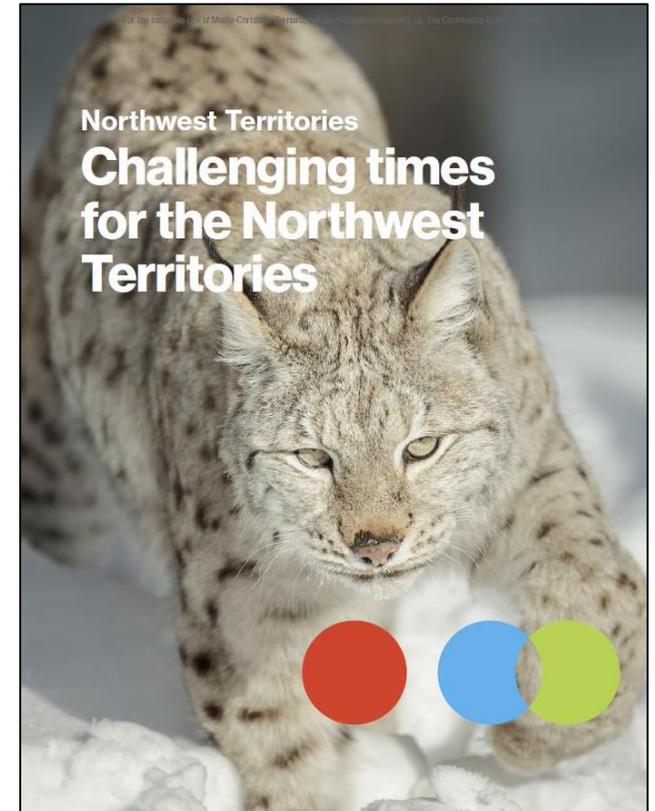
The Big Picture: NWT mine lives



- Diamond mining is maturing and industry will shrink with only smaller mines on the horizon
- NWT needs new mine projects

Maturing mines = Challenges for the NWT economy

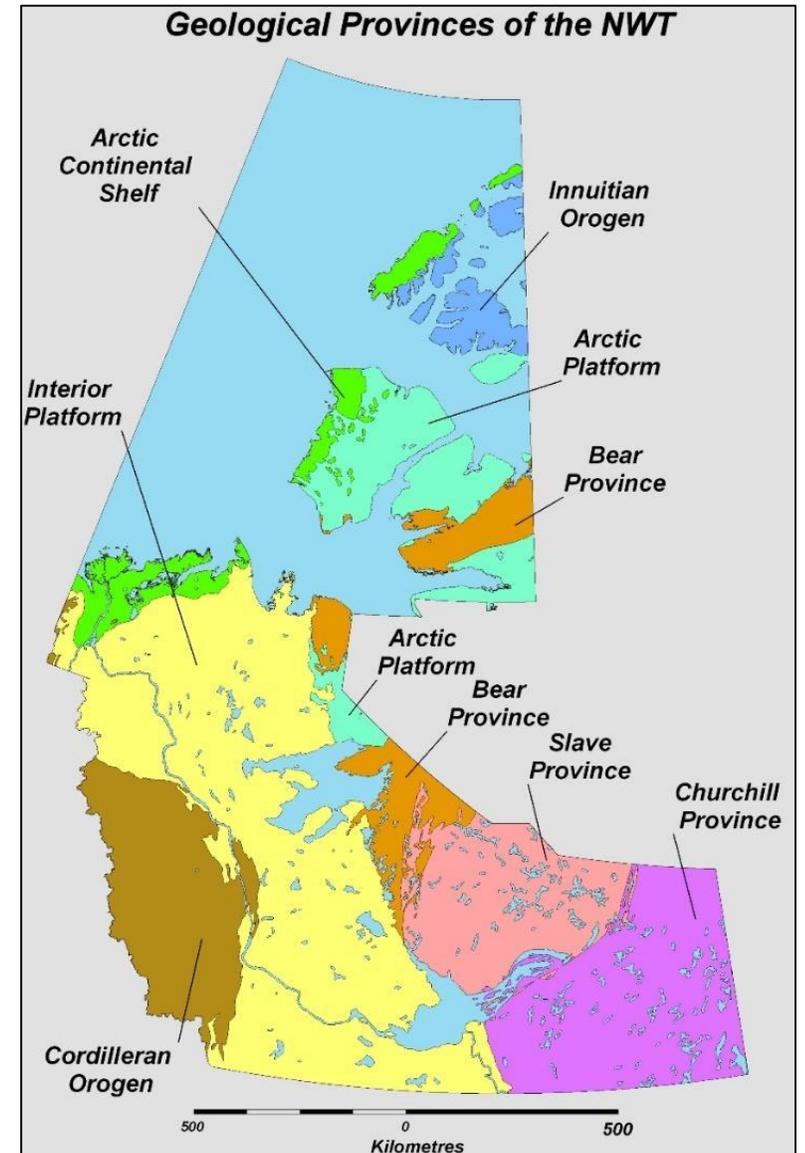
- *Modest economic growth over the near term, hovering in the 2% range; will subsequently slump sharply over the long term due primarily to weaker investment in the mining sector.*
- *Diamond production has reached its peak and will decline for most of the forecast period. Two new metal mines will open, offsetting some, but not all, of the losses in the mining sector.*
- *More tepid growth in mining will have repercussions on other areas of the economy, notably construction activity.*
- *Weaker economic growth will encourage more workers to exit the territory, leaving a smaller working-age population to cover the costs that come with growth in seniors.*
- *Only sector of the economy that will record employment growth is non-commercial services, which includes the health care sector.*



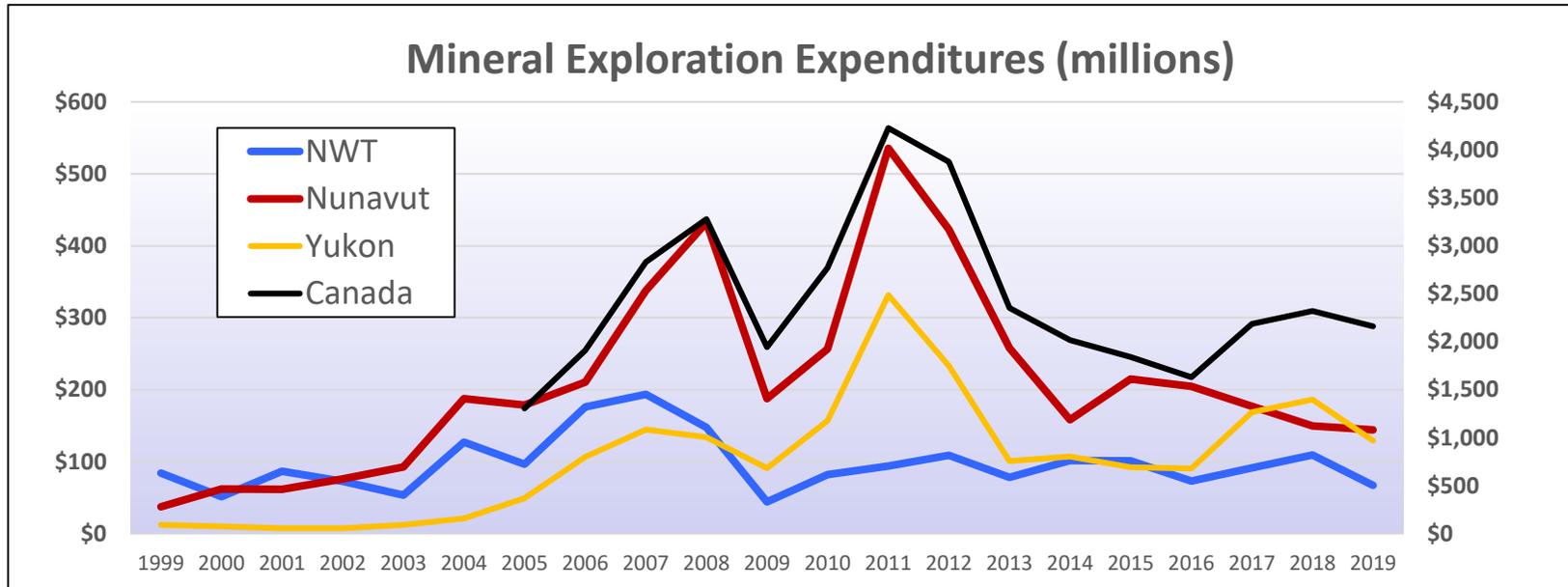
Source: Conference Board of Canada,
Territorial Outlook Economic Forecast,
Summer 2019

The NWT has great mineral potential

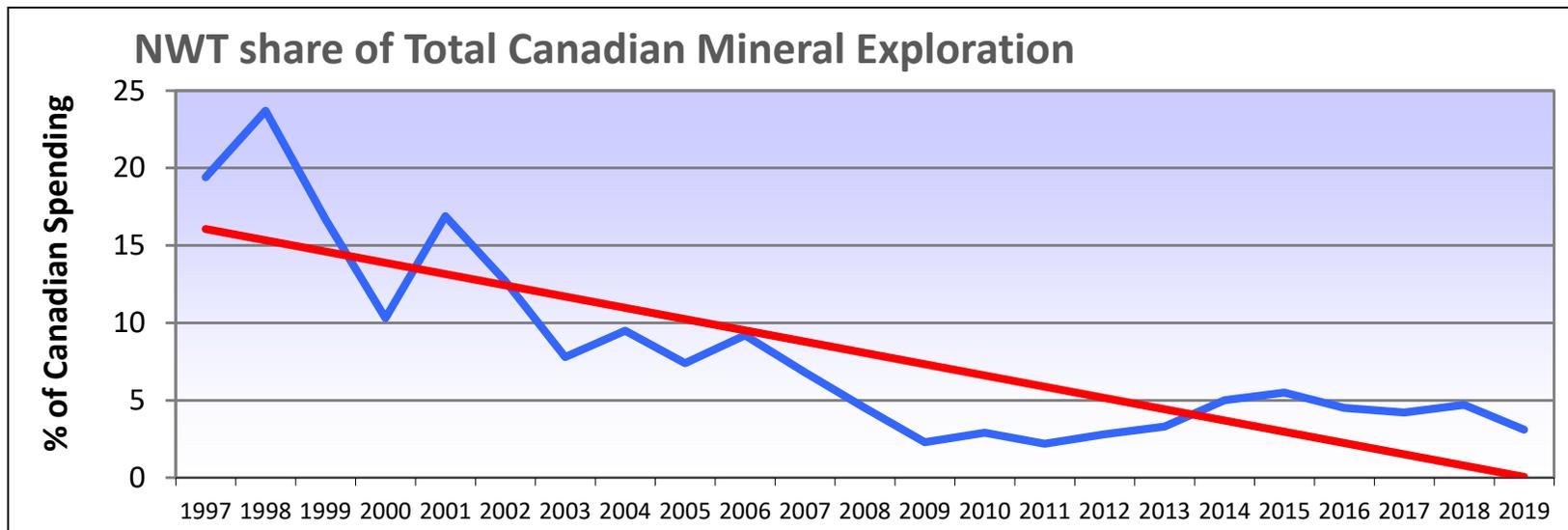
- 8 geological provinces
- Diverse mineralogy
 - Gold, silver, diamonds, lead, zinc, uranium, tungsten, rare earths, cobalt, bismuth, nickel, copper, iron, etc.
- Under-mapped & remote means under-explored
- This equals tremendous mining opportunity



But ... exploration investment continues to underperform



- Exploration continues to languish and we continue to lose investment share
- We've missed out on over \$1 billion in exploration investment compared to Yukon, NU since 2007
- **The 2014-19 Mineral Strategy has not been enough to increase investment**
- Other factors are trumping it

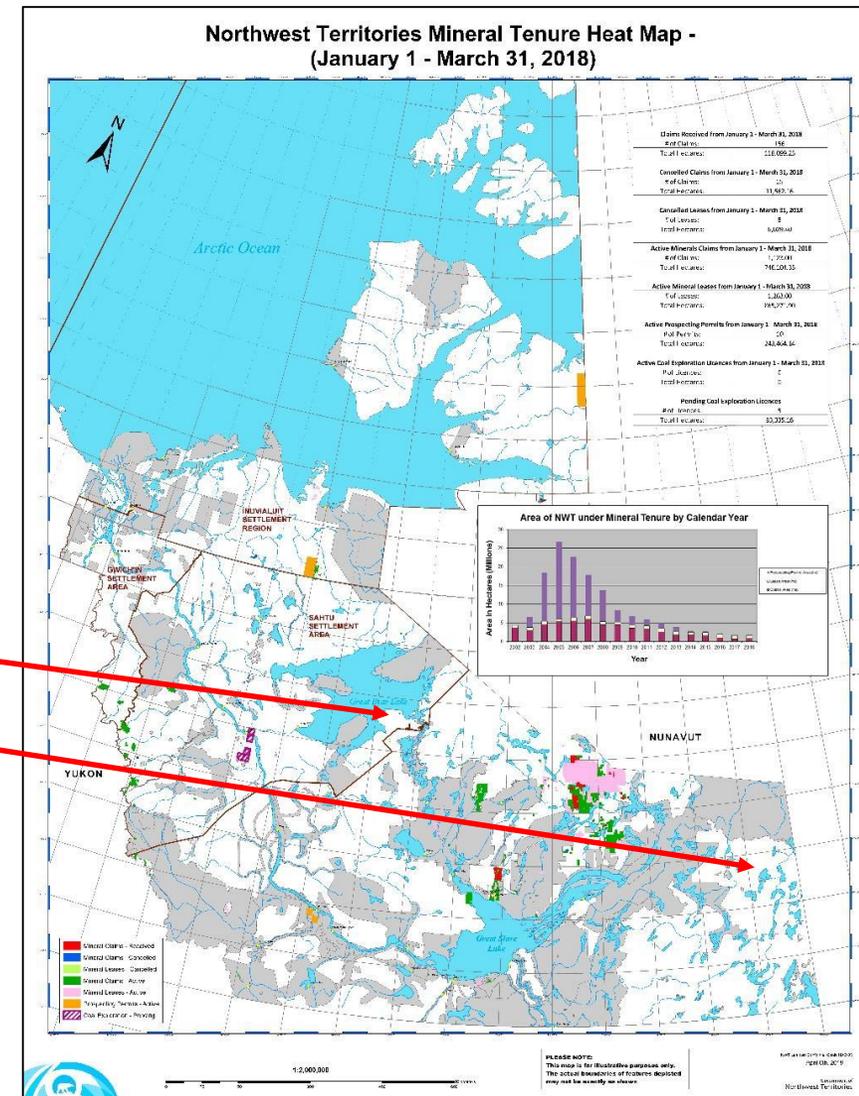


Why are so few looking for new mines in the NWT?

- Increasingly onerous exploration requirements
- Lengthy, cumbersome, complex, uncertain permitting processes
- Shrinking access to geologically prospective lands – over 30% off limits
- Indigenous governments have high expectations and demands
- Industry faces much higher costs in the north
- Significant infrastructure deficit
- Silo'd government departments, and often in defensive mode with industry
- Legislative / policy pressures: new Mineral Resources Act, Protected Areas, etc.
- Low public awareness (We don't even teach our kids about mining and its opportunities – is it any wonder we have so many fly in workers?)
- Marketing that we're open for business is risky – we're “prickly” to investors

Example: We've closed over 30% of NWT to development

- All the grey is off limits to exploration
 - Conservation, eg: parks, candidate protected areas
 - Land claims
 - Land use plans
- And some “open” areas are effectively closed
 - UNESCO Biosphere Reserve
 - Upper Thelon
- Industry is challenged for access to land to explore



And Cost Challenges create un-level playing field



- The North is a high cost jurisdiction
- Today, mines are on their own to pay it all
 - Exploration costs up to 6 times higher
 - Capital costs up to 2.5 times higher
 - Mine operating costs 30 to 60% higher



= \$!

We once had strong Federal infrastructure support

- 1948 – Snare Hydropower for Yellowknife gold mines
- 1959 – Roads to Resources, highways to mining towns
- 1961 – Great Slave Lake Railway for Pine Point zinc-lead mine
- 1966 – Taltson Hydropower for Pine Point mine
- 1974 – Town site, dock, airport for Nanisivik zinc-lead mine
- 1975 – Ice-breaking cargo ship technology to service Nanisivik & Polaris mines
- **40 YEAR FEDERAL INVESTMENT GAP FOR NORTHERN MINING**
- 2017 – Tlicho road with indirect benefit for NICO mine project
- 2019 – Federal moneys for Slave Province corridor work, Taltson power

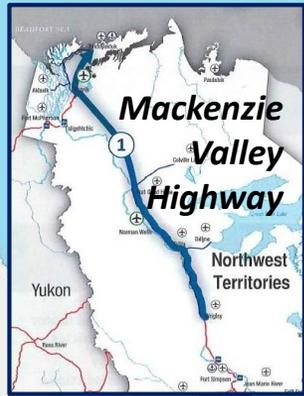


Government Infrastructure investment pays off

- *The Pine Point Mine example* -

- **\$125 million total cost** of Pine Point Mine project, including ...
- **\$88 million Federal Government investment** for railway and hydropower
- **This provided a \$1.8 billion return** over 25 year mine life (1964-1988), per:
 - \$339 million in dividends;
 - \$176 million in taxes;
 - \$400 million estimated freight charges paid to the Federally-owned Canadian National Railway;
 - \$246 million in wages and salaries;
 - \$500 million estimated spending on supplies and services; and
 - \$100 million to the Northern Canada Power Commission.
- **The Pine Point partnership between government and private enterprise returned handsome rewards to both.**

Playing catch up: Seeking key infrastructure investments



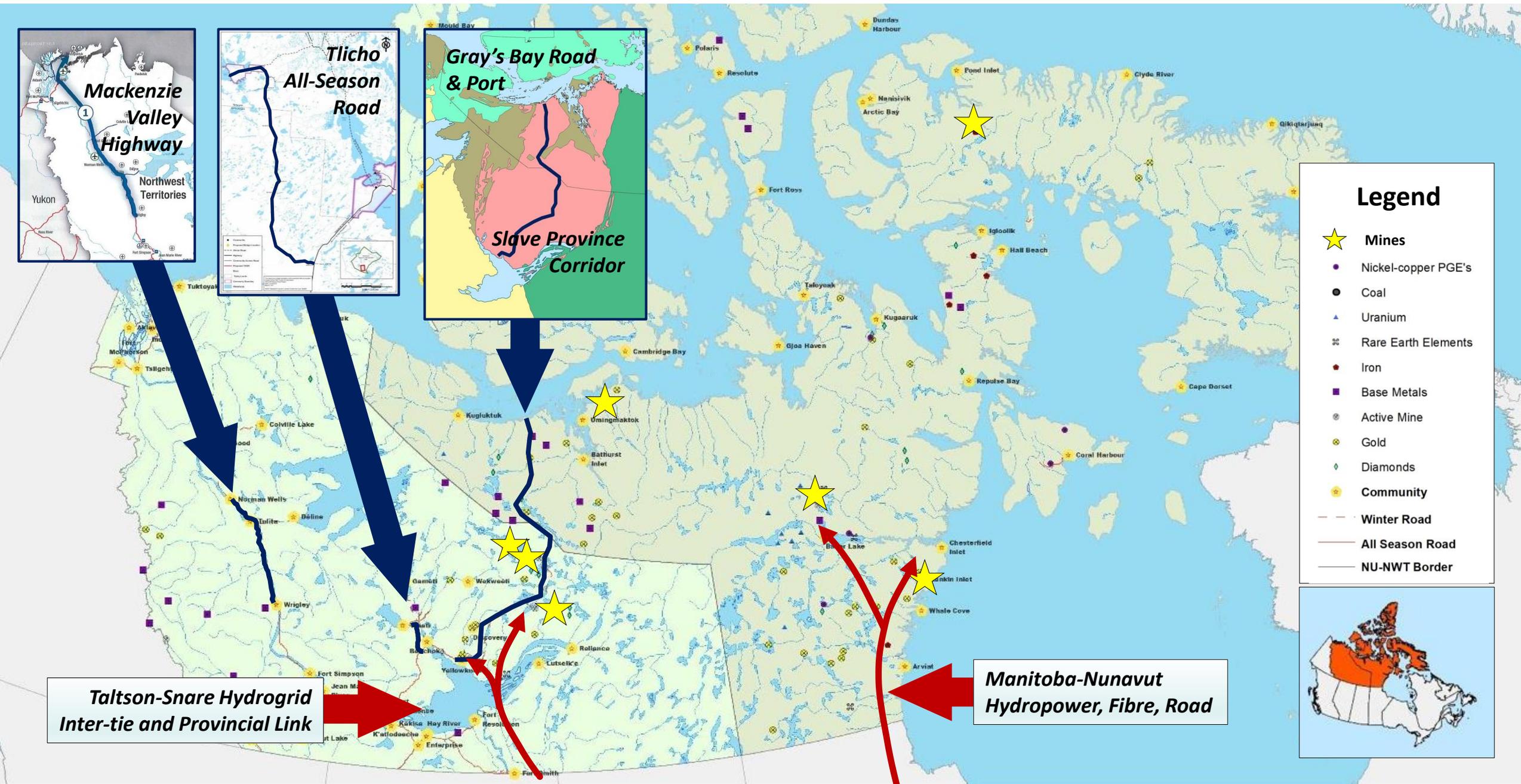
Legend

- ★ Mines
- Nickel-copper PGE's
- Coal
- ▲ Uranium
- ⊗ Rare Earth Elements
- Iron
- Base Metals
- ⊙ Active Mine
- ⊗ Gold
- ◇ Diamonds
- ★ Community
- - - Winter Road
- All Season Road
- NU-NWT Border



Taltson-Snare Hydrogrid Inter-tie and Provincial Link

Manitoba-Nunavut Hydropower, Fibre, Road



Part 3 – Rejuvenating the minerals industry and the NWT economy

We need a new plan – an *Investor Confidence Initiative*

- All governments have benefitted from \$Billions in taxes & royalties
- It's time to invest a sliver of this into a process to fix the system
- Timing is right – Bring current & emerging processes together
 - Arctic and Northern Policy
 - Premier's Indigenous Leaders Economic Symposium
 - NWT Indigenous Leaders Coalition on the Economy
 - CanNor Growth Strategy
- GNWT take charge, and quickly move a process forward

What is an Investment Confidence Initiative?

- A plan led by GNWT, and with other governments:
 - Recognizes there is a serious problem with poor exploration investment
 - Reinforces why the NWT needs exploration investment
 - Acknowledges that current actions are not working
 - Works with investors to identify what **investors need** to bring their investment
 - Recognizes that GNWT can't solve this alone
 - Identifies and brings other governments – public and Indigenous – who can help and who will benefit
 - Is owned by all government departments – no silos
 - Encourages solutions in the face of adversity – “the art of the possible”
 - Establishes performance indicators, and works to success

Some thoughts for an Exploration Investment Confidence Initiative

- **Goals: What companies need**

- Clear rights to explore
- Community support to explore
- Simple, certain processes
- Permits granted quickly
- Early stage permits granted fast
- Permit conditions appropriate to work
- Increased, guaranteed access to land
- Ability to do the work
- Claim staking tenure that supports right to mine
- “Government has our back”

- **How do we get there?**

- Quickly – move fast
- Priority focus on exploration & feasibility
- Modernize with map staking NOW
- Stop further land withdrawals
- Reduce withdrawn lands, eg, Thaidene Nene
- Provide blanket approvals for early stage activities
- No EA required for grassroots programs
- Government ensure work proceeds without community support
- Raise community awareness of industry benefits
- Communities benefit & see consequences: Government pay communities for projects they attract/support
- Infrastructure to increase access, reduce costs
- Supportive Mineral Resources Act & regulations
- Involve inspectors in permitting

- **Who must help?**

- All GNWT departments
- Canada – CIRNAC & departments
- Indigenous governments and organizations
- Boards / Regulators
- CanNor
- Municipal governments?



Logic flow: Determine goals, then identify how they might be reached, then identify who can help

Why it's important: people success!

