

# **The Emerging Economy of Remediation**

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# The Northern Remediation Economy

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**\$5 Billion**



# Common Language

## **Contaminated Site**

A site in which the concentration (e.g. soils) of harmful substances (1) is above the natural levels and poses or may pose an immediate or future danger to human health or the environment, or (2) exceeds the levels indicated in the policies and regulations (Government of Canada)

## **Remediation**

The process of removing dangerous or poisonous substances from the environment, or limiting the effect that they have on it. Reducing risks and liabilities.

## **Remediation Economy**

Northern people, indigenous groups, communities, suppliers and businesses participating in, and adding value to, a remediation project creating employment, building capacity and generating wealth.

# Context

Decades of:

- Non-renewable resource exploration and development
- National defence

Some activities left behind liabilities that we now want to control properly or remove.

Federal government, territorial government and private sector liabilities



# A Snapshot of the Opportunity

	YUKON	NWT	NUNAVUT
<b>Sites</b>	<b>147</b>	<b>1646</b>	<b>850</b>
<b>Projects</b> (2016)	<b>6</b>	<b>58</b>	<b>14</b>
<b>Average Per Project</b> (2016)	<b>\$8.5M</b> (Faro)	<b>\$1.4M</b> (Giant)	<b>\$1.2M</b>
<b>TOTAL</b> (2016)	<b>\$51.2M</b>	<b>\$80.4M</b>	<b>\$16.3M</b>

# The Remediation Process



- **Sites with unknown/suspected liabilities**
  - *Prioritize*
- **Assessment (understand liabilities)**
  - *Prioritize*
- **Remediation (decrease liabilities)**
  - *Prioritize*
- **Monitoring (confirm remediation is effective)**



## Thank you. Questions?

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# Det'on Cho Corporation



Det'on Cho Corporation

***Det'on Cho Corporation is a for profit  
organization with a social obligation***



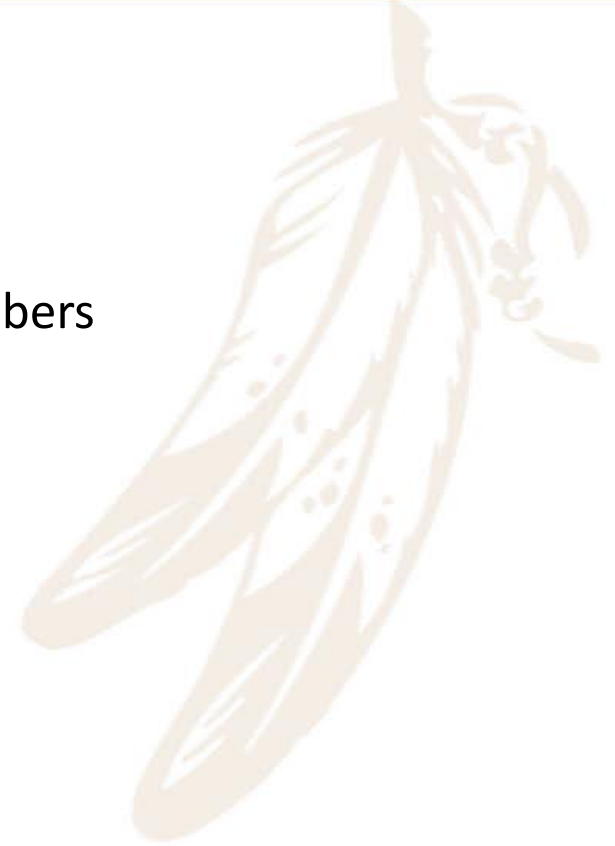
## Det'on Cho Corporation

### Yellowknives Dene First Nation

- Local First Nation to capital city of Yellowknife
- 1400 total members (50% on land / 50% off land)
- Two communities of Ndilo and Dettah made up of 700 members
- Non-settled First Nation

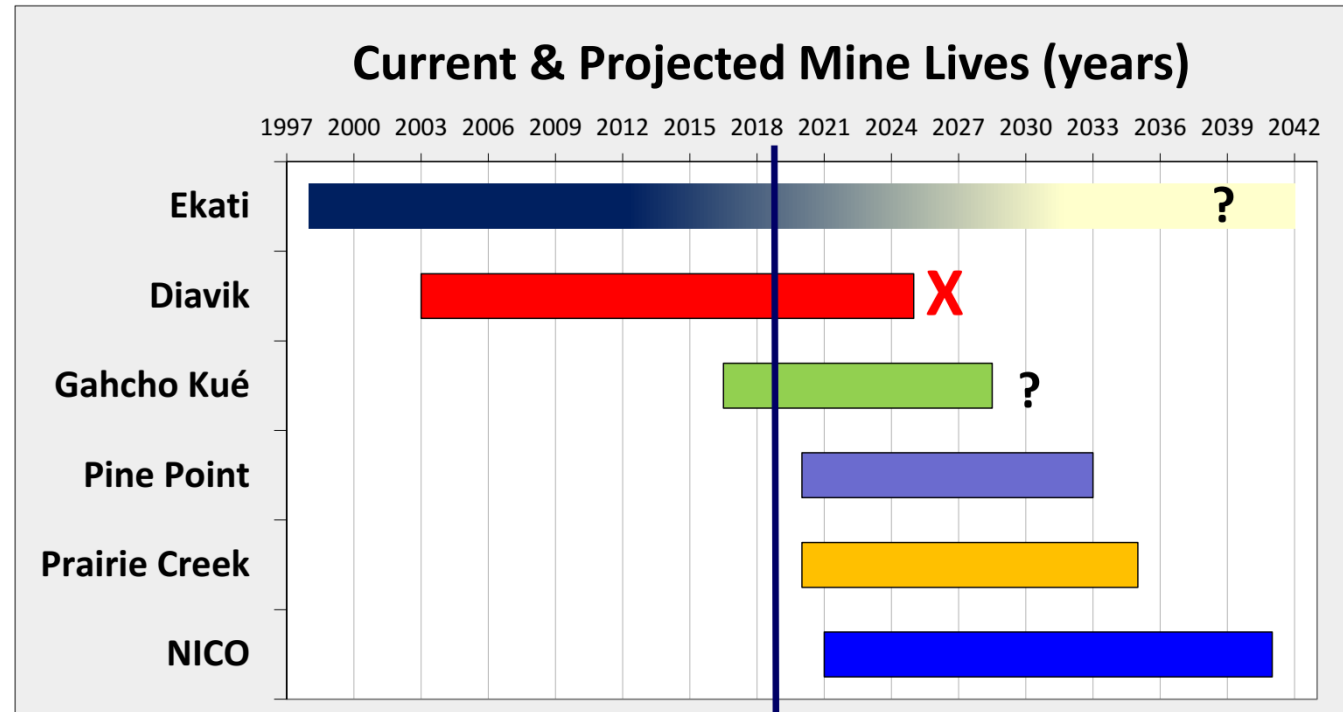
### History of Det'on Cho:

- 30 year history
- Started with \$15,000 grant
- Today blend of equity owned and partnerships:
  - \$50 – 100M / revenue (Dependent on contract season)
  - 800 employees / 600 local NWT residents





# Projected lifetime of mines



Note: NWT / Nunavut Chamber of Mines, 2019



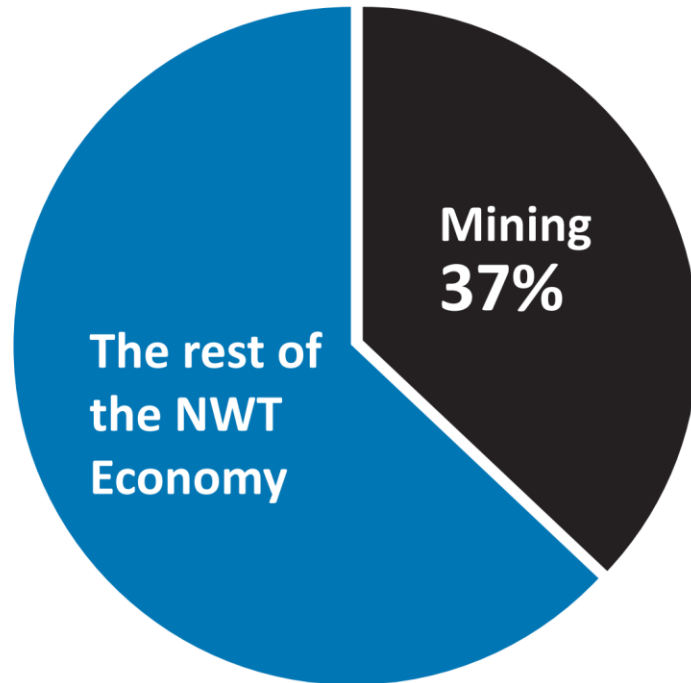
# Cumulative Northern Employment (1996 -2017)



Note: 2018 Diamond Mine Report - GNWT



## NWT GDP

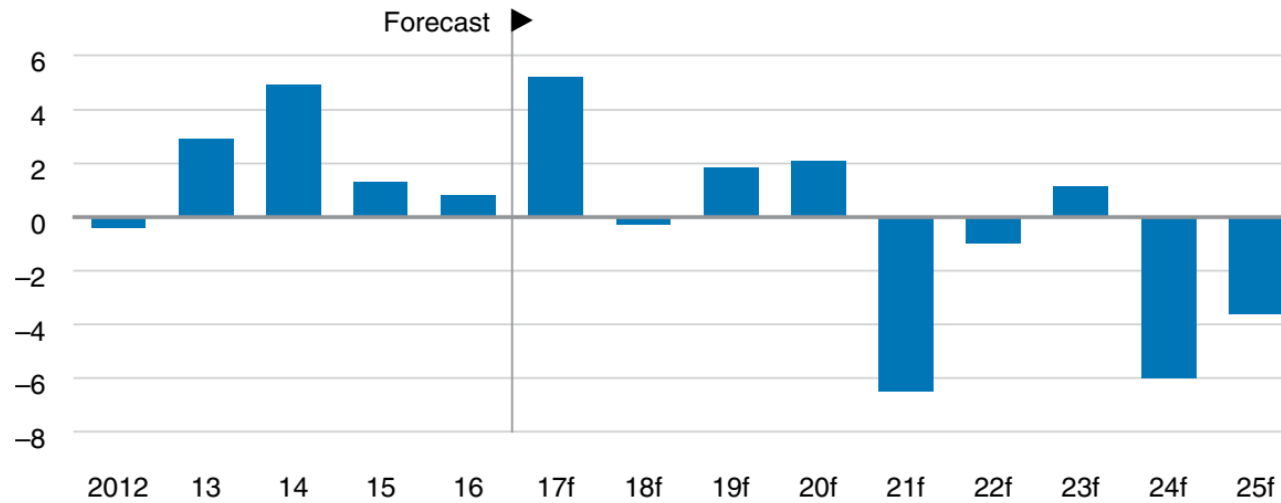


- Total value of the NWT GDP in 2017 was \$4.86B
- Diamond mining contributed 37.3% of the total, or \$1.81B

**Note:** 2018 Diamond Mine Report - GNWT



# NWT Real GDP Growth at Market Prices



f = forecast

Sources: The Conference Board of Canada; Statistics Canada.

**Note:** Autumn 2018 Territorial Outlook Economic Forecast — Conference Board of Canada



# Reclamation is a bridge – build sustainability

## Giant Mine – Not saying it's the solution but it buys us time

- 10+ year project
- \$1 – 1.5B Project
- Transferable skills for displaced workers
- Helps us build the, “reclamation economy”

## The reclamation economy in the North

- \$3B+ in NWT (Giant Mine, Diamond Mines, Norman Wells)
- \$5 – 8B Across the North
- Build Northern Indigenous skills that can be deployed Nationally and beyond



## Recommendations for Giant Mine

1

Don't just treat Giant Mine (and Faro Mine) as a reclamation project. Needs to be viewed as a socio-economic exercise that aims to keep employment and dollars in the North

2

Giant Mine (and Faro Mine) are long-term projects that can be used to develop skills to build the, "reclamation economy" in the North. Take best practices from Impact Benefit Agreements that aim to increase capacity.

3

Take the opportunity to understand the Northern parameters and identify barriers for local and Indigenous companies to participate in the project. Take active steps to reduce / eliminate barriers.



**Det'on Cho Corporation**

**Thank you**

**Creating Prosperity For**  
  
**The Yellowknives Dene**

# Economic Opportunity for Environmental Projects

Mark Hasegawa P. Eng.

Sanayut Engineering and Consulting



# Project Goals

- Identify Environmental projects where performing work locally maximizes resources
- Utilize local talent to execute work
- Establish training and apprenticeship programs

# Potential Areas of Focus

- Norman Wells Oil Field Cleanup
- Sumps in Beaufort Delta and Other Contaminated Sites
- Construction Waste Minimization and Recycling

# Norman Wells Oil Field Cleanup

- Normal wells oil field decommissioning is being considered
- Estimates range from 200 million to well over 500 million dollars
- Sahtu Region: Dene and Metis have been promised a role in the cleanup
- A joint Sahtu (Dene and Metis), Inuvialuit and Gwich'in consortium is investigating a combined effort to for support ESSO in the Cleanup
- Consortium to expand work to all the territories and Canada

# Sumps in Mackenzie Delta and Other Contaminated Sites

- 250 drilling waste sumps created in the Mackenzie Delta in the 70s
- Mostly brine based drilling mud
- At least half have collapsed or on the verge of collapse
- There is a renewed interest in delineating and remediating these sites
- Innovative solutions that results in cost minimization and maximization of local talent are needed
- Could be accomplished by creating local treatment facilities

# Construction waste minimization and recycling

- Many buildings built before the 1990s contained hazardous materials
  - Lead and Asbestos are of primary concern
- Currently these wastes are segregated onsite and shipped to Landfills in Whitehorse, Fort Nelson and even Edmonton
- Costs range from \$18,000 to \$45,000 a truck load.
- Creating a waste minimization facility to segregate waste from valuable materials will save in waste costs and allow for the reuse of valuable wood, plastic and metal.

# Summary

- These are a few of the potential markets that could create jobs and save costs in the community.
- Each could result in stimulating the local economy and save valuable resources.
- Further economic analysis and the development of business cases is underway





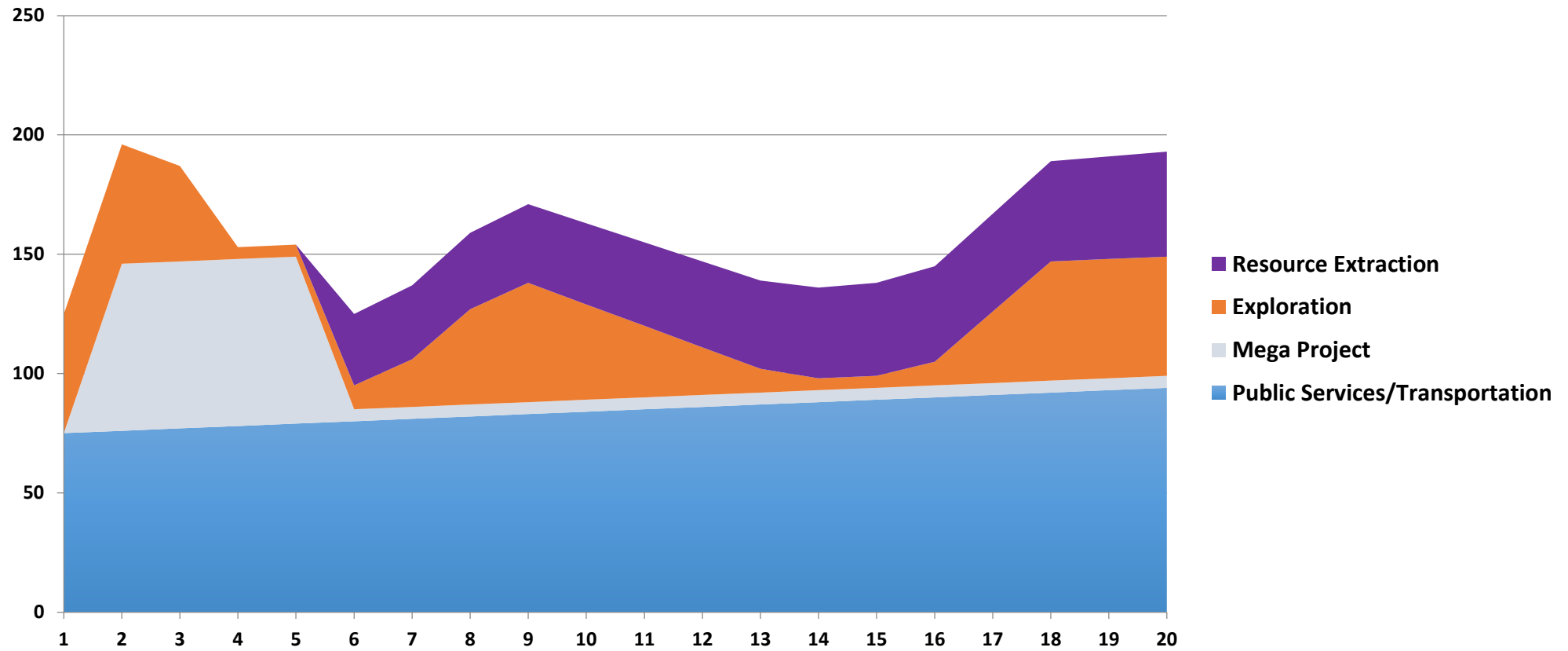
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Corporation

**James Thorbourne**

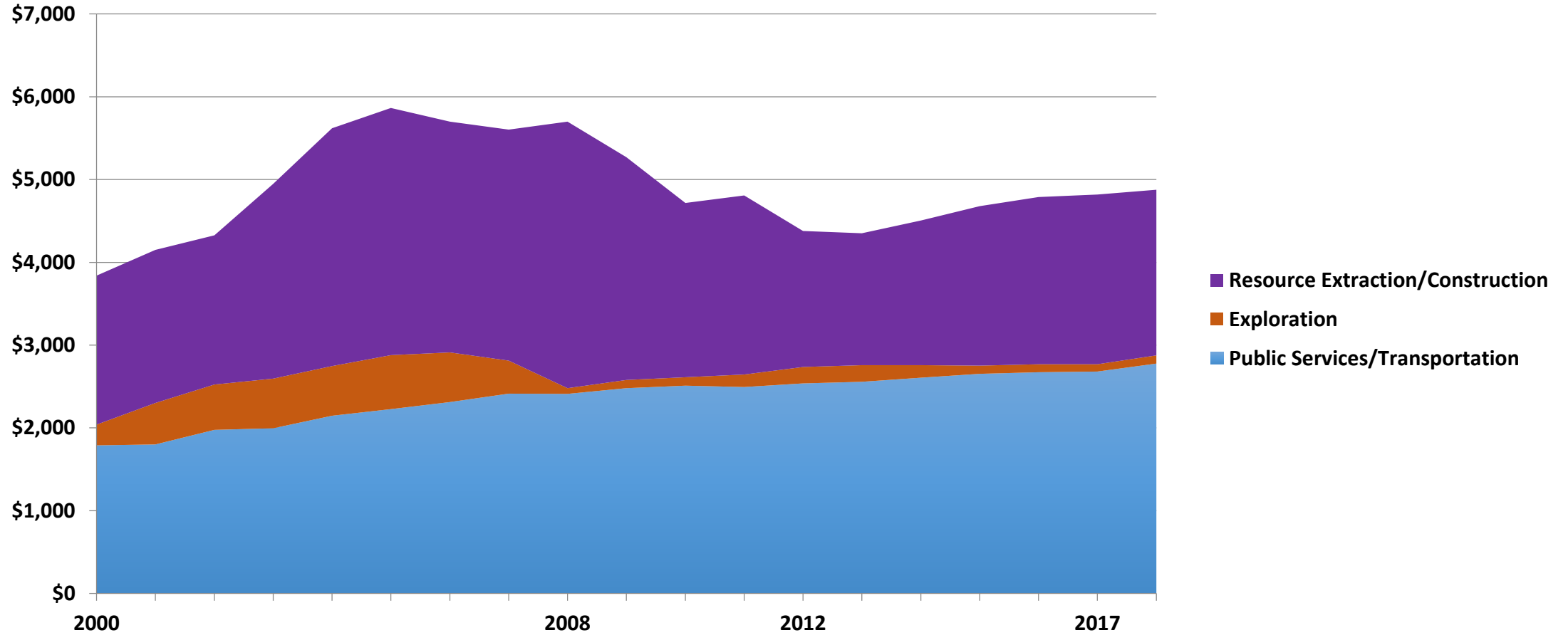
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Arctic Development Expo  
June 2019

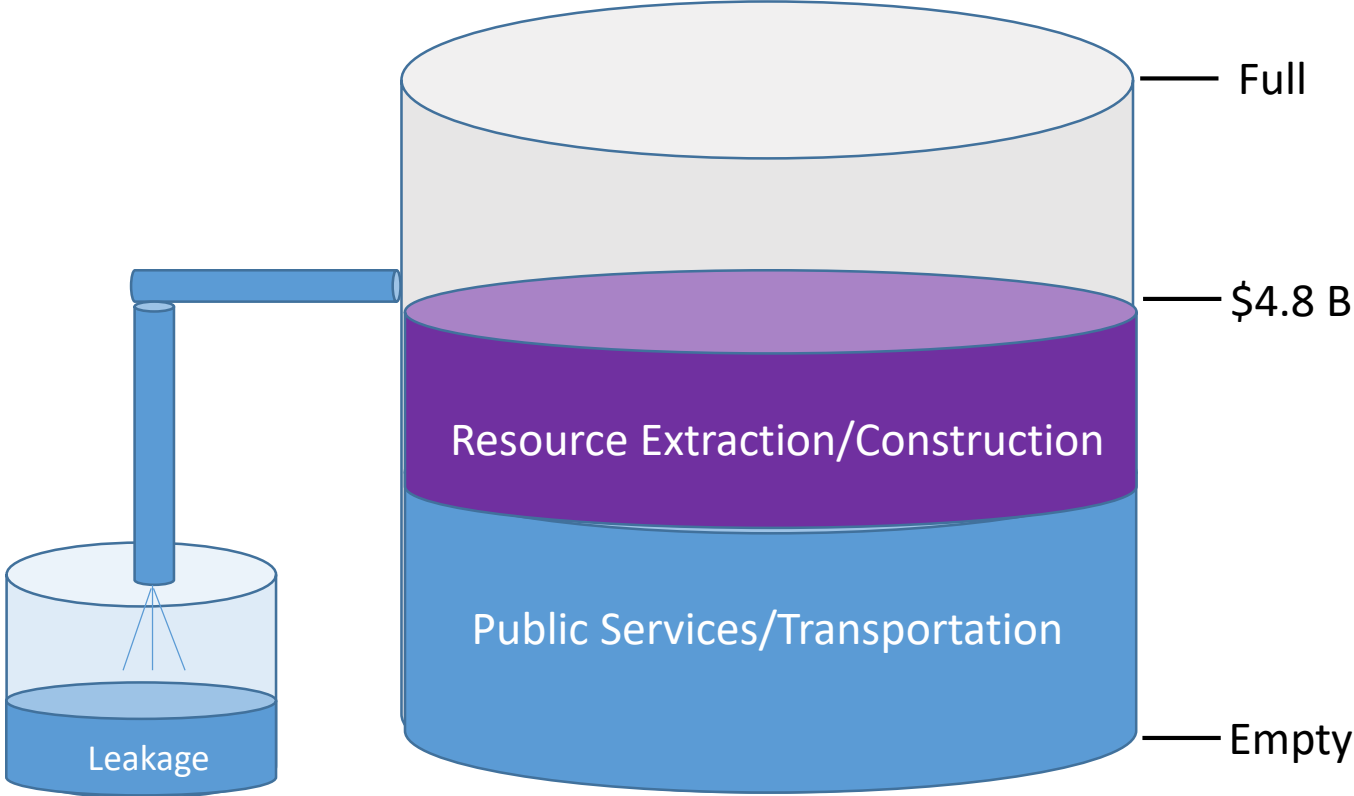
# The Typical Northern Economy



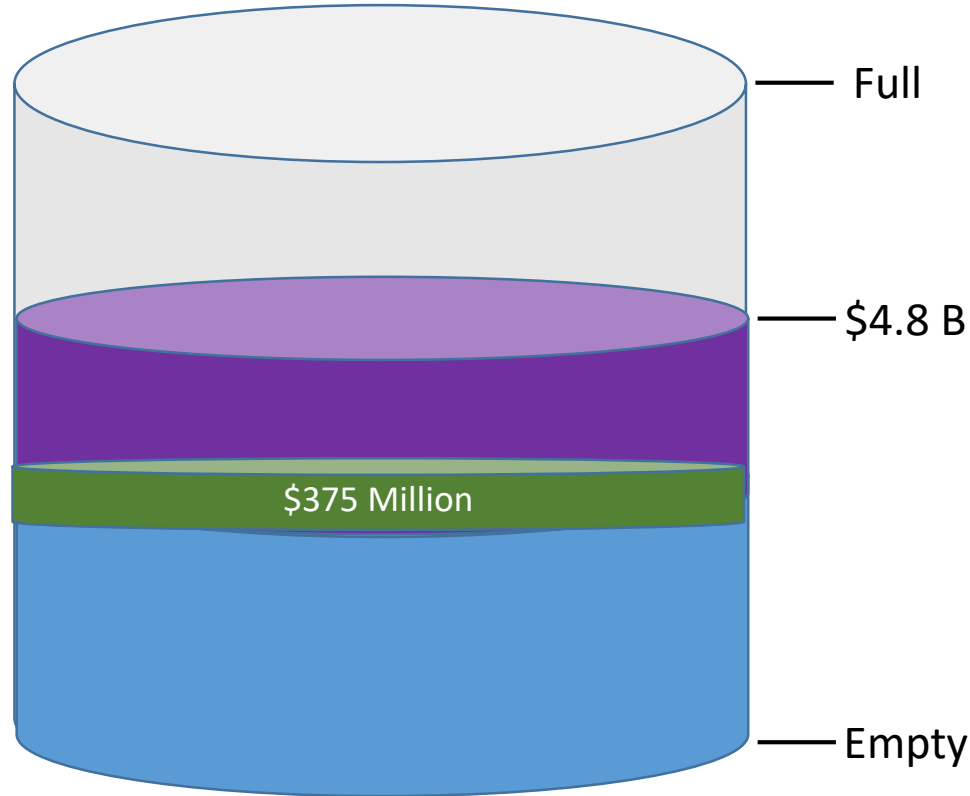
# The Northwest Territories Economy



# “Leakage” From The Northwest Territories Economy



# The Northwest Territories Remediation Economy



Federal Contaminated Sites  
+ Diamond Mines  
+ Norman Wells  
+ Sumps  
+ Spent Buildings

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= about \$3 B over 8 years

Or

**\$375 Million per year**



## Concluding Thoughts

- **Remediation is and will be a significant part of the NWT Economy**
- **NWT and the North in general should capitalize on the opportunity**
- **Work to keep as much work in the north as possible – reduce the economic leakage to the south**



# Panel Questions/Discussion



Gwich'in Development Corporation

