

# Water and Sanitation Summary for Northwest Territories-Canada

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# Geography and Demographics

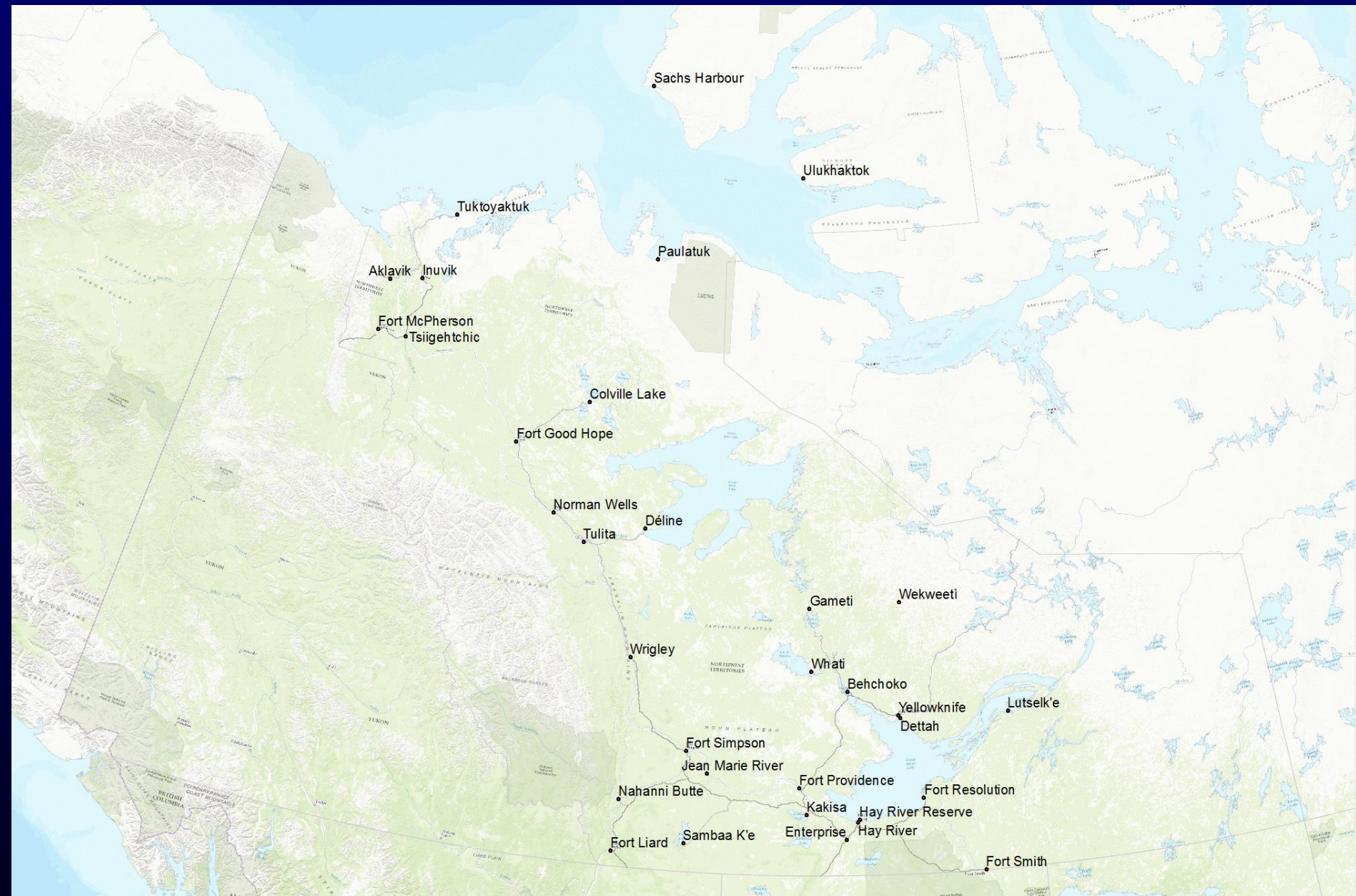
- Country/Region size
  - 1.35 million square kilometers
- Population: 43,000
  - Urban:
    - 19,000 in Yellowknife,
    - 23% in regional centres Fort Smith, Hay River and Inuvik
  - Rural
    - 32% in 28 other communities (70 to 1900 people)

# Demographics

- Racial or ethnic groups
  - about one half of NWT is aboriginal
  - 86% of population in smaller communities are Aboriginal
  - 23% in Yellowknife
  - 52% in Fort Smith, Hay River and Inuvik
- Aboriginal population includes:
  - First Nations ( 29%)
  - Inuvialuit- in the 6 northern most communities (11%)
  - Metis- mainly in Yellowknife, Hay River and Fort Smith.

# Northwest Territories, Canada





# Water and Sanitation Services

- Majority of homes in NWT have in-home water and sewer service (approx. 95% or more)
- Many NWT communities are on trucked services. Water is a community resource and is trucked to homes and sewage is pumped out disposed of in community sewage systems.



# Water Service

- Water treatment methods are used?
  - Filtration, flocculation, chlorine, ozone, fluoride adjustment
- How is water distributed to homes?
  - pipes to home (large communities have mostly piped)
  - truck transport ( some parts of each community and all services in smaller communities)

# WATER SYSTEMS OVERVIEW



**SOURCE**



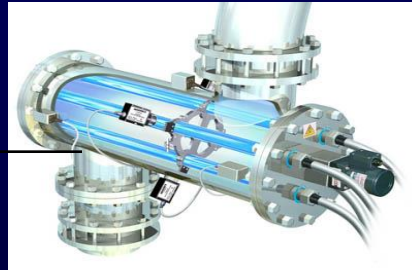
**INTAKE  
(outside)**



**INTAKE  
(inside)**



**CHLORINATION**



**UV DISINFECTION  
(depends)**



**FILTRATION  
(depends)**



**DISTRIBUTION**

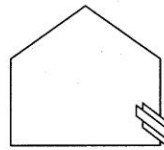


**STORAGE**



**TAP**





TRUCKFILL  
STATION

INCLINED SHAFT

WINTER ICE

PUMP(S)

SCREEN

# Sewage Service, household waste

- Sewage collection
  - pipes (gravity, into flowing/moving system large communities)
  - truck pick up (some of each community and all of small communities)
- Sewage treatment methods
  - Primary, some secondary treatment, few tertiary

# Sewage Lagoon, Paulatuk NT



# Costs

- Who pays for?
  - Construction, engineering
    - Community governments ( funded by Territorial or Federal Government initiatives)
  - Operations and maintenance
    - Local users, in larger communities with subsidy from territorial government

# Operations and Maintenance

- How is this organized?
  - Local responsibility at community level  
Support (\$ and training) from territorial government
- If local user fees are paid, who collects them?
  - Community governments/town

# Regulation Authority

Who sets and enforces the rules for water and sanitation services?

- Local community responsibilities
  - Fees, call outs, delivery rules, operations
- Territorial government
  - HSS for drinking water,
  - ENR and MACA sewage
- Regional Water boards and land use planning groups.
- National government responsibilities
  - Guidelines, effluent criteria guidance



# Challenges

- Climate or environmental change
  - Some NWT communities are coastal/next to large rivers and risk flooding
- Regulations (laws, rules)
  - Regulations are meant to streamline and provide clarity to communities. Water boards and Government have dual jurisdiction
- Organization or Government
  - Approvals can be complex and multilevel and stages

# Challenges

- Financial- costs far exceed recovery of cost models
- Engineering, design or age of systems
  - Systems are costly to install- permafrost and other issues
  - Replacement requires shipping by sea, barge or air.

# “Thank You”

- Justin Hazenberg  
Department of Municipal and Community Affairs  
Government of Northwest Territories
- Dr. Andre Corriveau  
Chief Public Health Officer  
Department of Health and Social Services  
Government of Northwest Territories