NL Sustainable Drinking Water Research for Rural, Remote, and Indigenous communities

MNL Symposium & AGM
May 7, 2021
10:30-11:00am NDT

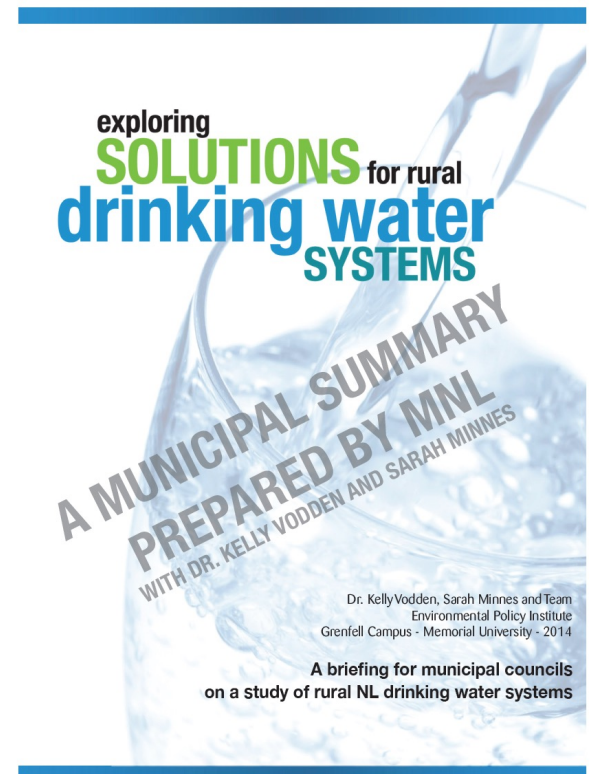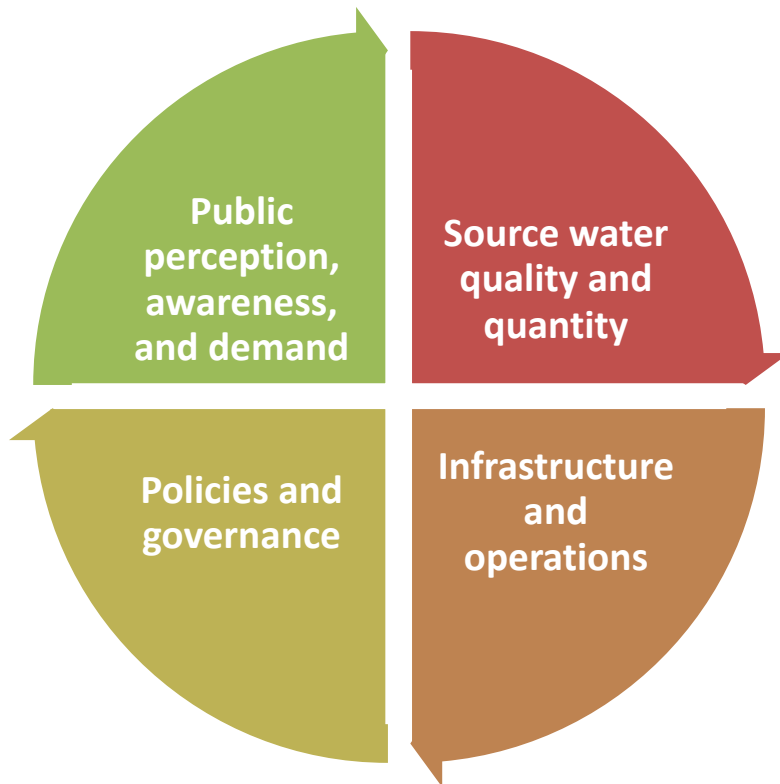# EXPLORING SOLUTIONS FOR SUSTAINABLE RURAL DRINKING WATER SYSTEMS

- Public perception, awareness, and demand
- Source water quality and quantity
- Policies and governance
- Infrastructure and operations

exploring
SOLUTIONS for rural
drinking water
SYSTEMS

A MUNICIPAL SUMMARY
PREPARED BY MNL
WITH DR. KELLY VODDEN AND SARAH MINNES

Dr. Kelly Vodden, Sarah Minnes and Team
Environmental Policy Institute
Grenfell Campus - Memorial University - 2014

A briefing for municipal councils
on a study of rural NL drinking water systems

For more information and the final report
see: http://nlwater.ruralresilience.ca

exploring SOLUTIONS for rural
drinking water SYSTEMS

Further Research

- **Helping Municipalities Find Solutions for Sustainable Drinking Water Systems** (Sarah Minnes, and Kelly Vodden, 2015)

- **A Regional Approach to Drinking Water Management: NL-BC Comparative Water Systems Study** (Sarah Breen , Sarah Minnes, and Kelly Vodden, 2015)

- **Sunnyside Drinking Water Project** (Jennifer Daniels and Kelly Vodden, 2016)

- **Source Water Protection and the Policy Implementation Gap** (Seth Eledi, 2015-2108)

- **Drinking Water Challenges and Solutions in Indigenous Communities: The case of Flat Bay, NL** (Ayotunde Omosule, 2016-18)

- **Black Duck Brook-Winterhouse Drinking Water Survey** (Seth Eledi, Kelly Vodden, Wendy Brake, 2016)

- **Exploring Regional Approaches to Drinking Water Management in the Strait of Belle Isle** (Vincent Chireh and Kelly Vodden, 2016-18)

- **Rural Drinking Water Systems and Multi-level Governance** (Rumbidzai Kanyangarara, 2016-)

Exploring Water Insecurity in Rural and Remote Areas During a Pandemic:

Experiences with Potable Water Dispensing Units (PWDUs) in Newfoundland and Labrador

Photo: Postville PWDU

Interviews

- **32** communities with PWDUs
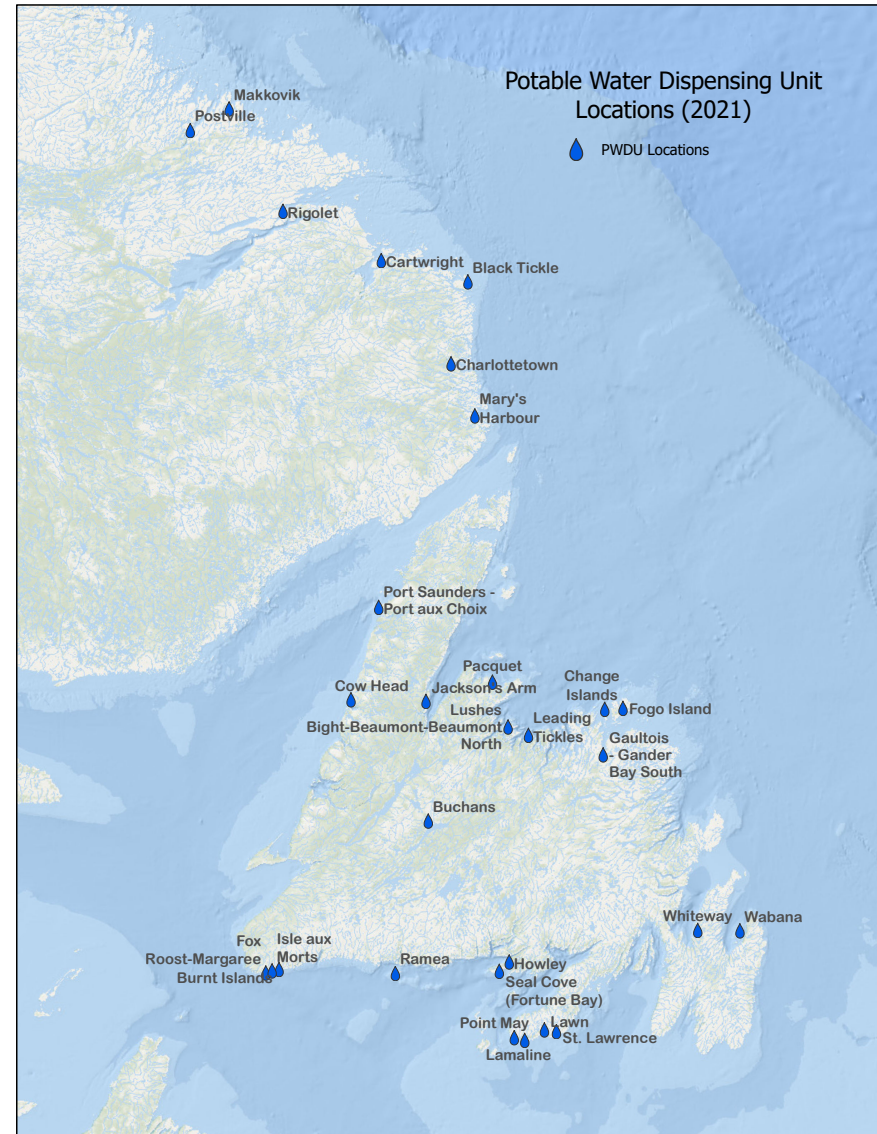 - **21** interviews across **15** communities

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Analysis: major themes

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Community Feedback Webinar

- **12** participants
  - across **9** PWDU communities
- **+ 8** Partners
- **+ 1** Expert

Potable Water Dispensing Unit Locations (2021)

💧 PWDU Locations

Makkovik
Postville
Rigolet
Cartwright Black Tickle
Charlottetown
Mary's Harbour
Port Saunders - Port aux Choix
Pacquet
Cow Head Jackson's Arm Change Islands
Lushes Leading Fogo Island
Bight-Beaumont-Beaumont North Tickles Gaultois - Gander Bay South
Buchans
Whiteway Wabana
Fox Isle aux Morts
Roost-Margaree Ramea Howley
Burnt Islands Seal Cove (Fortune Bay)
Point May Lawn
Lamaline St. Lawrence

May by NCC, 2021

Preliminary Findings

"If you've visited one rural town, the saying goes, you've visited one rural [or remote] town—no two are the same"

A. Hutchins in Maclean's

Photo: Black Tickle PWDU

Benefits	Challenges
• Good source of approved drinking water • Addresses boil water advisories	• Still access issues in some communities for certain demographics
• Reasonable cost to users	• Can be expensive at the community/municipality level (high initial cost of unit) • Upkeep and maintenance costs every year to the town
• Maintainable by communities	• Not all communities have trained/certified operators or people for maintenance issues • Service interruptions
• Reduce dependence on single use bottles/plastics • An alternative and a choice	• Need for improved communication (e.g. guidelines, benefits, safety, etc.)

	PWDU	**Full Scale Treatment Plant**
Construction of Unit	$150 – 350K (<$800K)	$1.5-2 Million
Annual operating and maintenance	$2-10K	$50-100K

Pico and Chaulk, 2010

Maintenance and Operations

- Parts
- Power outages or surges
- Leaks
- Demand beyond capacity
- Remote/Rural-ness
  - Waiting for parts
  - Sending out tests

Photo: PWDU system Rigolet

COVID – 19

- Guidelines?
- Increased demands
- Hours of operation
- Delay for new PWDUs
- Cancellation of operators training
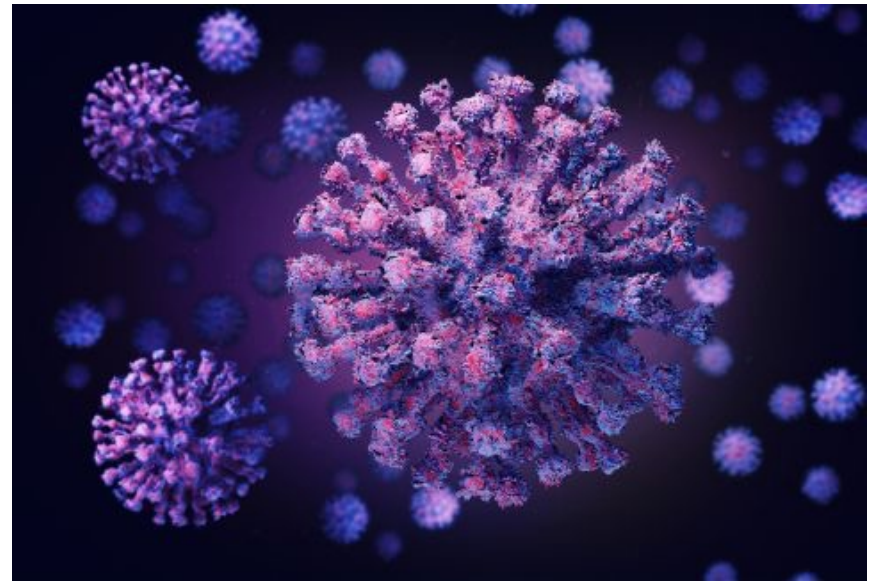- Emergency drinking water flown-in

Photo: livescience.com

Opportunities

- Remote support network
- Water delivery services
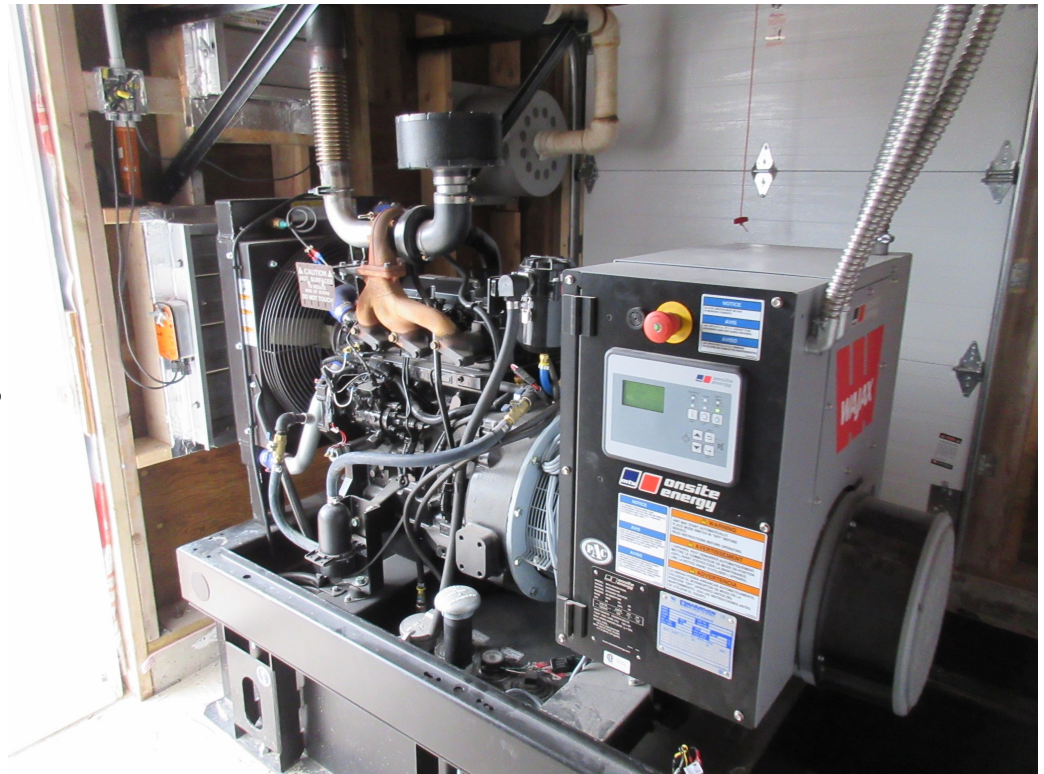- Preventative maintenance
- Backup generators

Photo: Back up generator in Makkovik

PWDUs: A spectrum of solutions

Permanent
(e.g., to address BWA and access issues)

Short-term, interim and temporary
(e.g., until a full system is installed)

Supplemental
(e.g., contingency or emergency source, economic development and tourism)

"This is something we are going to have to continue long term"
Community #7, 2020

"I see this now as part of my contingency plan moving forward"
Community operator, 2021

- *Do PWDUs fit in with the vision of water security in your community?*

- *Are we supporting communities to solve their water security issues? How?*

Photo: TerraNova Water Services

Thoughts? Questions? Please contact us at:
Research - related : seger@mun.ca
Member - related: DWalsh@municipalnl.ca

For more information and resources see: http://nlwater.ruralresilience.ca