Safe Drinking Water in First Nations Communities

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4 April 2018
Minister’s Briefing Assignment for PPG1007
• Issue Overview
• Decision Context: Desired Outcomes
• Case Study Background: Infrastructure Issues, Operation and Maintenance Issues
• Key Stakeholders
• Sources of Funding
• Contextual Challenges
• Recommended Interim Implementation Strategy & Rationale
  – Governance and Accountability, Sample Process
  – Strengths & Weaknesses
  – Other considerations: Cost, priorities and communication
• Long-Term Commitments
• Risk Assessment & Mitigation
• Future
• Next Steps
• Appendix
First Nation Drinking Water: Issue Overview

- Historic issues of isolation, lack of infrastructure development and injustice have created drinking water crises in many First Nation communities across Canada (See Appendix A)
- In response to this crisis, the Liberal Government of Canada released the following announcement in June 2017
Decision Context

“With limited funds, deteriorating infrastructure, and considerations of Indigenous self-governance, how can we best allocate current funding and resources to meet the accelerated 2020 target?”

Desired Outcomes & Goals:

a) Ensure sustainable access to safe drinking water and water infrastructure
b) Promote reconciliation through Indigenous-led governance
c) Meet government’s 2020 target
d) Utilize existing networks for training and collaboration
Case Study Background

Overview: Students from PPG1007 (University of Toronto School of Public Policy and Governance) analyzed 16 Ontario First Nation communities under drinking water advisories to conduct a background analysis of current water systems and identify barriers preventing these communities from reaching the ISC’s 2020 target.

Key Findings

1. Infrastructure needs: critical barrier to achieving the 2020 target
   a. While overall operations risk (7.9) was higher than infrastructure risk (6.3), infrastructure capital expenses require more funding
   b. Communities were representative of the general Ontario drinking water situation
2. Current funding allocations are not enough to meet the community's needs
   a. However, pilot “hub” projects have operated for as little as $5.5 million while benefiting 19 communities and are a positive model to consider
3. Increased retention and training of water plant operators is needed

(See detailed breakdown of case study in Appendix B)
Reserve Infrastructure Issues

Facilities & Parts
- Operational failure
- Critical design flaws
- Large per-lot cost estimates
- Few distribution systems

Transportation
- Limited road access
- High water transportation costs
- Slowed construction

Energy Sources
- Reliance on diesel generators
- Unreliable transmission lines
- Vulnerability of water treatment systems
Operations & Maintenance Issues

Human Capital
• Scarcity of human capital on reserves
• High school graduation rates low in most communities

Operators: 30% lack licence, 20% risk losing licence
• Increased water quality monitoring and sampling records are needed

Training Programs
• Operators: 30% lack licence, 20% risk losing licence
• Increased water quality monitoring and sampling records are needed

Water Protocols
• Lack of maintenance manuals
• Lack of emergency response plans
• Lack of monitoring enforcement
Key Stakeholders

1. First Nations Communities
2. First Nations Tribal Councils
3. Trilateral Steering Committee
   - Established in September 2016, integrates key stakeholders

**Provincial Government**
- Ministry of the Environment and Climate Change

**Federal Government**
- Indigenous Services Canada (ISC)
- Health Canada
- Infrastructure Canada

**Regional Groups**
- First Nations Technical Services Corp
- Chiefs of Ontario
Sources of Funding

- In 2011, Neegan Burnside Ltd. estimated that $4.68 billion was needed to cover the costs of water infrastructure repairs.
- In 2017, the Office of the Parliamentary Budget Officer (PBO) reevaluated these estimates and suggested $3.2 billion as the minimum funding required to meet the 2020 targets.

Funding earmarked by stakeholders for improvements to First Nations water quality

- Funding from the Federal Government
  - $1.97 Billion
- Funding from the Ontario Government
  - $1,850,000 Walkerton Clean Water Centre
  - $4,442,944 Clean Water and Wastewater Fund (CWWF)
  - $17,000,000 Small Communities Fund
- Funding from Regional Bodies
  - $4,442,944 Clean Water and Wastewater Fund community projects
Contextual Challenges

• Role of the Provincial Government
  – Potential that policy priorities could change after the 2018 Provincial election

• Indigenous self-governance
  – Any initiatives undertaken by ISC must be conscious of the right to self-governance and working with First Nations communities instead of dictating policy changes

• Sources of Funding
  – Substantial funding required for infrastructure upgrades, estimates suggest $3.2 billion to reach 2020 target

• Disbursement of Funds
  – Funding provided directly to communities (potential mismanagement of funds)
  – Government applications (time needed to approve and disburse funding)

• Funding for infrastructure vs. human capital
  – Investments can be made in infrastructure but if there is no trained operator to maintain the system it will likely fail
Proposed Solution

**Interim**
Fund immediate infrastructure repairs and construction for communities on DWA’s and develop training & communication hub(s)
- Funding will be sourced by ISC from *existing budget* and stakeholder allocations

| 80% of funds for infrastructure | 20% of funds for training hub |

- In the interim, infrastructure repairs and construction will help to achieve 2020 target, while communication hubs will help to manage projects and support water management in the long term
- Training/communication “hubs” will be situated in each tribal council region
- Will provide:
  - Technical, funding, and water systems management advice for projects
  - Potential vendors contacts for water system construction and repair
  - Emergency water operator on call
  - House operator training programs
  - Provide space for collaboration and joint projects between communities

(See Appendix C)

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*Funding divisions based on results from PPG1007 case study of 16 First Nations*
Governance and Accountability Model

**Collaborative Hubs**
Collaborative hub training programs, and operator technical services outpost housed here.

Individual reserve and joint-region projects, funding requests and work orders can be submitted from hub to ISC.

**ISc**

**Funding**

**Ministry of Environment and Climate Change**
Continue to provide technical advice and outsource services to the collaborative hubs.

**Ontario First Nation and Technical Services**
Continue to provide technical advice and outsource services to the collaborative hubs.

Work with communities and reserves to build Indigenous-based training content.

**First Nation Community**

**Feedback, Project & Funding Requests**

**Technical Advice**

**Feedback**

**School of Public Policy & Governance**
UNIVERSITY OF TORONTO
Sample Process under the Proposed Framework

1. First Nation Community with Collaborative Hub:
   - Identify reserve infrastructure and training projects needs.
   - Seek any necessary expertise, program planning, relief operators and training opportunities from Hub.

2. First Nation Community:
   - For infrastructure projects obtain 3 contract bids and submit to ISC directly or through the Collaborative Hub to access funding.

3. ISC:
   - Review infrastructure proposals.

4. ISC:
   - Provide funding for infrastructure and training projects through block funding. 
     (See Appendix D)

5. First Nation Community with Collaborative Hub:
   - Continue on-going project management and assessment of any infrastructure and training needs.
   - Source ressources from Collaborative Hub as needed.
Strengths & Weaknesses

Strengths

• Utilizes funding “window” provided by 2020 target
• Block funding promotes Indigenous self-governance
• Meets two of the five objectives in Minister Philpott’s mandate.
• Influx of capital coincides with identified water system repair needs
• Streamline communication, training, technical advice and operator access at a regional level

Weaknesses

• Community representation and trust in their tribal council
• 80/20 split may not fit all needs
• Dissatisfaction with interim solutions
  – Long-term funding concerns
• Infrastructure expectations and quality

Achieved Outcomes:

- Ensure sustainable access to safe drinking water and infrastructure
- Meet 2020 government target
- Utilize existing networks for training and collaboration through tribal councils
- Promote reconciliation through Indigenous-led governance
Other Considerations

Cost and Affordability
- Utilizing funding already made available
- Providing funds to communities through block grants

Alignment with Policy Priorities
- Federal commitment to end long-term boil water advisories by 2021
- Offers both short- and long-term strategies

Communication Issues
- Utilizing regional structure: communication focused between tribal council & community
- Communication between community & government is limited
Long-Term Commitment (A)

Communal Wastewater

• In 2011, **153 First Nations** communities across Canada were **reliant on septic systems**

• Septic systems are prone to contaminating nearby source water
  – Inadvertently **increases costs for maintenance** and monitoring

Rationale

• Dissatisfaction with interim solutions
  – Communities are aware of the long-term threats to their drinking water and want reliable long-term solutions

• Improving wastewater management and source water protection (SWP) plans could significantly **reduce future risks of communities relapsing to DWAs**
### Long-Term Commitment (B)

#### Human Capital

- Post-2020 skills training
  - Augment 80/20 funding scheme based on training program scale, O&M needs
- Language-specific training manuals and operational documents
  - Collaboration with Tribal Councils could help eliminate language barriers that prevent adequate skill and knowledge development

#### Rationale

- Build community-driven capacity to self-educate and self-monitor
  - Water and Wastewater operator training could be funded via the Indigenous Skills and Employment Training Program ($235.7 million/year)
- Existing KO Safe Water Project model is exemplary
  - 19 First Nations, 4 Tribal Councils
- Ontario has signalled commitment
# Long-Term Commitments: Risk Assessment

<table>
<thead>
<tr>
<th>Probability</th>
<th>Minor</th>
<th>Moderate</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Likely</strong></td>
<td>Communication and transparency challenges</td>
<td>Unreliable power sources, poor internet connection, outdated technology</td>
<td>DWAs still in place in 2020</td>
</tr>
<tr>
<td><strong>Possible</strong></td>
<td>Low rates of self-selection into Collaborative Hub Model</td>
<td>Funding cuts after 2019 Federal election</td>
<td>Creeping costs for construction, including materials and fuel</td>
</tr>
<tr>
<td><strong>Unlikely</strong></td>
<td>Province and/or other regional bodies withdraw support</td>
<td>Lack of interest in water plant operator training</td>
<td>First Nations communities reject proposed solutions</td>
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</tbody>
</table>
## Long-Term Commitments: Risk Mitigation

<table>
<thead>
<tr>
<th>Probability</th>
<th>Minor</th>
<th>Moderate</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likely</td>
<td>Frequent open discussions with First Nations; increase public updates on projects</td>
<td>Support First Nations interested in alternative sustainable power options</td>
<td>Accelerated funding and project management, supported by Budget 2018</td>
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<tr>
<td>Possible</td>
<td>Support First Nations in developing self-sustainable, self-determined solutions</td>
<td>Strategically plan for most expensive projects to be near completion fall 2019</td>
<td>Impose rules similar to P3 models, contractors absorb extra costs if beyond budget</td>
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<tr>
<td>Unlikely</td>
<td>Source additional required funding through other Federal departments</td>
<td>“On-Call” operators available through Collaborative Hub</td>
<td>Pilot Collaborative Hub: First Nations-led problem-solving</td>
</tr>
</tbody>
</table>
A Promising Future...

There are several current and incoming strategies that will be essential to not only improving First Nation drinking water quality, but also improving the economic and community sustainability in the long-term:

• **Impact of Improved Source Water Protection (SWP) Plans**
  - SWPs in addition to improved operator training and monitoring techniques can help mitigate the risks associated with naturally occurring pollutants

• **Targeting Women for Skills Training**
  - Women tend to stay in their communities, making them an integral part of the labour force that ISC should work with the First Nations communities to target for skills development
    - Hubs could create training programs with flexible hours or bring training directly to the communities

• **Sustainable Energy Sources**
  - Reducing community reliance on diesel-fuelled generators is important for long-term sustainability
Next Steps

"With limited funds, deteriorating infrastructure, and considerations of Indigenous self-governance, how can we best allocate funding and resources to meet the 2020 target?"

**Transparent Communication**
- Clarify priorities, target, and approach
- Enable First Nations to set the narrative, including press releases and project updates
- Regular public updates on projects

**Streamline Funding Release Process**
- Reduce application process timeline
- Clarify release requirements to all parties involved
- Negotiate faster release of funds from Provincial sources

**Empower Indigenous Institution Building**
- Support regional relationships with Tribal Councils
- Continue block funding for Safe Water Project
- Request proposals for new Collaborative Hubs
Thank you

Questions?
Appendix
Appendix A: Timeline of Canadian Water Policy

**Neegan Burnside Report:**
- Estimate to end DWA’s in Ontario: $4.68 billion
- November 2013

**Safe Drinking Water for First Nations Act**
- Includes Federal regulations to protect water sources, develop effective water treatment and ensure access to clean drinking water
- June 2017

**Liberal Government Commitment:**
- Work with First Nations to end DWA’s in First Nation communities
- October 2017

**Infrastructure Canada** commits funding to 235 Ontario First Nations infrastructure projects

**RV Anderson Report:**
- Estimate to end DWA’s at $2 billion
- February 2018

**Bill C-262** passes second reading in house of commons
- December 2017

- Federal government deadline to end DWA’s shortened from 2021 to 2020

- Federal government adds $172 million to $1.8 billion for First Nation water infrastructure
Appendix B.1: Case Study Summary (Findings)

- **Reasoning for funding allocations:** Case study indicates that immediate needs are related to infrastructure and training
  - Infrastructure will receive more funding as capital is expensive and costs are magnified by reserve isolation, transportation and economies of scale

- **Drinking water training & communication hubs will be distributed amongst the pre-existing tribal councils**
  - Based on the 7 current pilot projects that the ISC has already undertaken at the Tribal council level
## Appendix B.2: Case Study Risk Breakdown

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*Data collected from PPG 1007 briefing notes and 2011 Burnside report*
## Appendix B.3: Case Study Cost Breakdown

<table>
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<tr>
<th>First Nation Group</th>
<th>Total Upgrade Cost Estimate</th>
<th>Per lot upgrade estimate</th>
<th>Total Servicing Cost Estimate</th>
<th>Per Lot Servicing Estimate</th>
<th>Total Operation and Maintenance Estimate</th>
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*Data collected from PPG 1007 briefing notes and 2011 Burnside report*
Appendix C: Roll-Out Plan

2018 Phase 1

Communities currently under DWA’s will prepare 3 bids for any needed repairs or construction. ISC will review bids.

Repair and construction projects will start.

ISC will meet with each Ontario tribal council to begin hub development.

2019 Phase 2

Ongoing repair and construction projects for water infrastructure will continue.

Water training and communication hubs will be set up to address emergency operator needs and advice for water project management.

2020 Phase 3

Continue any ongoing repair and construction projects for water infrastructure.

Transition to maintenance and general upkeep infrastructure work as major projects finish.

Begin shift of hubs to support long term water sustainability initiatives for communities e.g. language specific training.
## Appendix D.1: Funding Release Scheme

### Design & Planning Phase

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<th>Projects &lt; $300,000:</th>
<th>Projects &gt; $300,000:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release $20,000 for initial programming and planning costs</td>
<td>Release $20,000 for initial programming and planning costs</td>
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### Decision Phase

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<th>All projects:</th>
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<tr>
<td>Submit 3 potential quotes</td>
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<tr>
<td>ISC will review.</td>
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<tr>
<td>If approved 5% of funds will be released immediately</td>
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### Phase 1 Construction

<table>
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<th>Projects &lt; $300,000:</th>
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<tbody>
<tr>
<td>Full funding released upon signed agreement with contractor</td>
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<table>
<thead>
<tr>
<th>Projects &gt; $300,000:</th>
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<tbody>
<tr>
<td>Remainder of funding released</td>
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### Phase 2 Construction

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<table>
<thead>
<tr>
<th>Projects &gt; $300,000:</th>
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</thead>
<tbody>
<tr>
<td>50% of funding released upon signed agreement with contractor</td>
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</tbody>
</table>
Appendix D.2: Funding Release Scheme

Fiscal Responsibility of Communities:

- Funding release can be altered depending on specific project needs and concerns.
  - For instance, during phase 1 of the roll-out ISC could alleviate concerns regarding communities independently managing funds by beginning the block funding releases with communities that have exhibited stable financial track records and reliability such as Akwesasne and Six Nations.
  - The hubs will be used as an accountability checkpoint for block funding in communities with different financial track records.

Funding Gaps:

- Potential sources for additional funds:
  - Hubs could support and inform communities about grant opportunities at the provincial and regional level.
    - Enhanced coordination and support at the hub level could help to lower maintenance costs, lowering the overall funding gap.
  - **P3’s**: Public Private Partnerships
  - Investment in alternative and self-sustaining infrastructure.
  - Additional government funding commitments may occur in the future.
Acronyms

- **DWA**: drinking water advisory (boil water advisory, BWA, is a sub-category)
- **ISC**: Indigenous Services Canada, Federal Government
- **O&M**: Operation and maintenance
- **CWWF**: Clean Water and Wastewater Fund
- **SWP**: Source Water Protection
- **KO**: Keewaytinook Okimakanak (leader of Safe Water Project)
- **Hub**: Refers to collaborative communication and training hubs for each tribal council.