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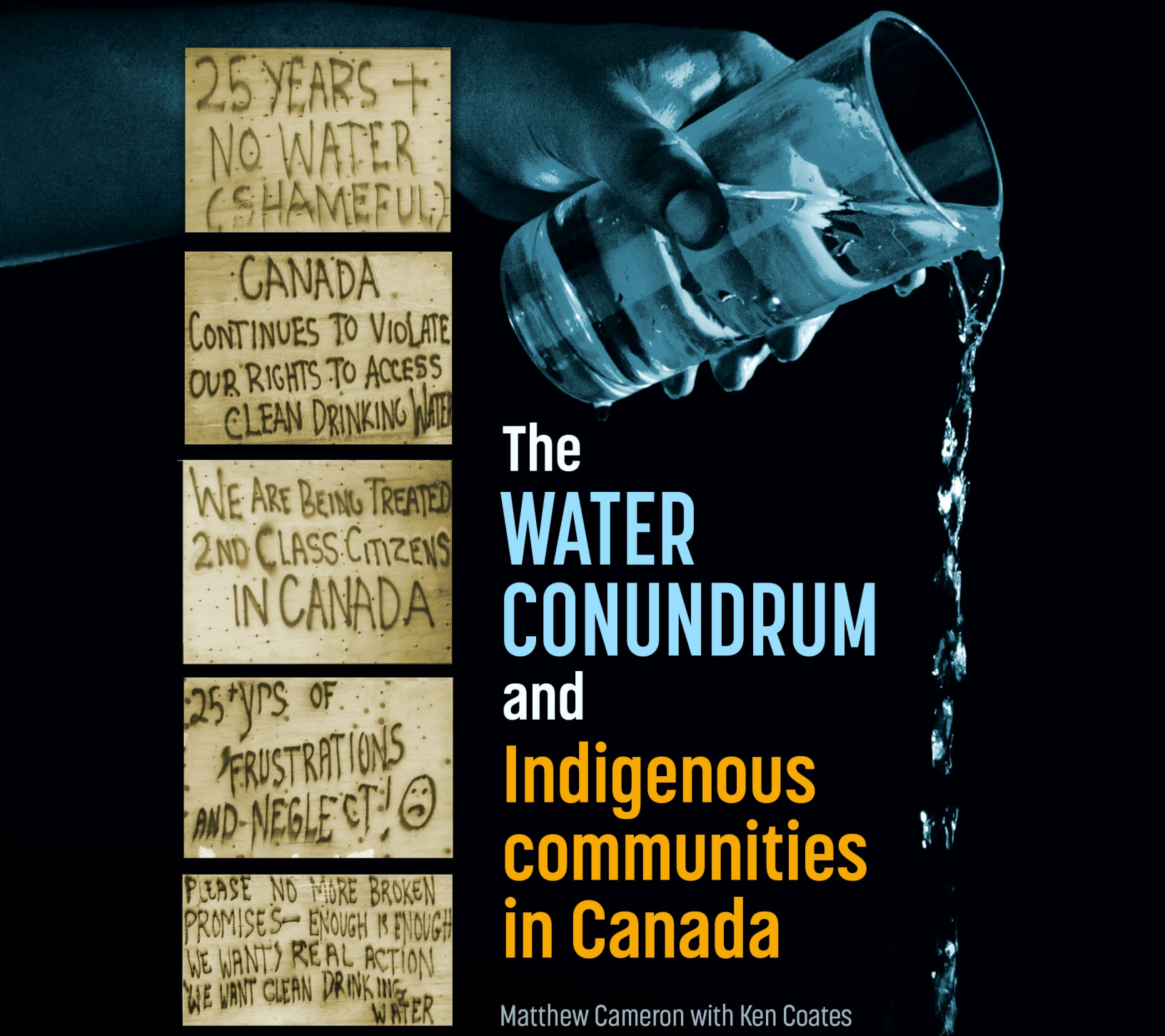

The WATER CONUNDRUM and Indigenous communities in Canada

Matthew Cameron with Ken Coates

November 2023

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Contents

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Executive summary | *sommaire*

Most Canadians take safe, clean drinking water for granted – most, but not all. In fact, over 17,600 people in Saskatchewan, Manitoba, and Ontario alone are currently living under a drinking water advisory that has been in place for longer than a year. These Canadians, the vast majority of whom live in First Nations communities, rely on bottled water for hydration, cooking and personal hygiene.

These communities go without access to clean water for years at a time despite the fact that Canada as a whole is incredibly well-endowed with clean, fresh and safe water; being home to 20 per cent of the world's fresh water and seven per cent of its renewable water supply (despite making up less than 0.5 per cent of its population). How can this abundance be reconciled with the country's inability to provide so many First Nations communities with secure access to one of the necessities of life?

This report finds that a variety of political decisions refracted through multiple levels of government, coupled with a host of geographical, logistical and informational challenges, have made providing consistent access to clean drinking water one of the most persistent and troubling problems in Canada, particularly in First Nations communities.

The federal government has devoted considerable resources into tackling this issue over the past two decades, investing more than $10 billion in water infrastructure for First Nations communities. Yet this spending has not been sufficient to fully eradicate the problem.

As of May 2023, there were officially a total of 31 long-term drinking water advisories in effect in Canada, impacting 27 Indigenous communities. This figure, however, does not capture the full scope of the problem as it excludes those public water systems that the federal government has not given funding to; nor does it account for long-term advisories in the territories. A full accounting, taking in these omissions from the official numbers, brings the current total across Canada to at least 55. Beyond the fragmentation of current figures, the lack of clear, consistent, and transparent data collection regarding long-term drinking water advisories, both historic and contemporary, makes it nearly impossible to get a clear picture of the extent of the problem within Canada.

The status quo is unacceptable as a lack of consistent access to safe drinking water is linked to myriad physical, mental, and emotional health issues, many far from obvious. In extreme cases, water insecurity has been linked to suicides in First Nations communities.

This report recommends that policymakers consider a number of policy initiatives to foster better outcomes. This includes implementing measures to enhance transparency, including publicizing information about delivery systems and down-times in water treatment facilities. Policymakers may also consider creating region-wide water management systems, which would allow for a sharing of personnel, nearby professional backup, and collective learning about water systems maintenance and treatment facilities (i.e., a maintenance economy of scale). They should also give greater attention to remote solutions and, in the most dire of circumstances, give affected populations the option to relocate to areas with safer water supplies. Finally, its imperative that policymakers adopt an increased sense of urgency in systematically addressing the problem, not just throwing money at it. MLI

La plupart des Canadiens considèren*t comme tout à fait naturel de pouvoir compter sur une eau potable pure et sûre – la plupart, mais pas tous. En fait, plus de 17 600 personnes, rien qu'en Saskatchewan, au Manitoba et en Ontario, font l'objet depuis plus d'un an d'avis concernant la qualité de l'eau potable. Ces Canadiens, dont la grande majorité vit dans les communautés des Premières Nations, dépendent de l'eau embouteillée pour étancher leur soif, cuisiner et assurer leur hygiène personnelle.*

Ces communautés sont privées d'accès à l'eau potable pour des années à la fois, même si le Canada est extrêmement bien pourvu en eau propre, saine et fraîche, puisqu'il abrite 20 pour cent des réserves d'eau douce et 7 pour cent des réserves d'eau renouvelable de la planète (alors qu'il représente moins de 0,5 pour cent de la population mondiale). Comment concilier cette abondance avec l'incapacité du pays à fournir à tant de communautés des Premières Nations un accès sûr à un élément aussi vital que l'eau?

Ce rapport constate qu'une conjugaison d'éléments, soit des décisions politiques réverbérées sur les multiples paliers de gouvernement et d'abondants défis liés à la géographie, à la logistique et à l'information, a fait de l'accès à l'eau potable l'un des problèmes les plus durables et les plus graves au Canada, en particulier dans les communautés des Premières Nations.

Le gouvernement fédéral a consacré des sommes considérables à la résolution de ce problème au cours des deux dernières décennies. Il a investi plus de 10 milliards de dollars dans les infrastructures hydriques pour les communautés des Premières Nations. Pourtant, ces dépenses n'ont pas suffi à régler totalement le problème.

En mai 2023, 31 avis de longue durée concernant la qualité de l'eau potable étaient en vigueur au Canada, touchant 27 communautés autochtones. Toutefois, ce chiffre ne saisit pas toute l'ampleur du problème, car il exclut les systèmes publics

d'approvisionnement en eau que le gouvernement fédéral n'a pas financés ; il ne tient pas compte non plus des avis de longue durée en vigueur dans les territoires. Un décompte complet, qui ajouterait ces omissions aux chiffres officiels, ramènerait le nombre total d'avis à au moins 55 pour l'ensemble du Canada. Non seulement les chiffres actuels sont-ils incomplets, mais l'inexistence de collecte de données claires, cohérentes et transparentes sur les avis de longue durée, historiques comme contemporains, rend pratiquement impossible d'en arriver à un portait précis du problème au Canada.

Le statu quo est inacceptable, car le manque d'accès durable à l'eau potable est lié à une myriade de problèmes de santé physique, mentale et émotionnelle, dont beaucoup sont loin d'être évidents. Dans des cas extrêmes, on a même mis au compte de l'insécurité hydrique certains suicides dans les communautés des Premières Nations.

Ce rapport recommande aux décideurs politiques un certain nombre d'actions politiques en vue de produire de meilleurs résultats. Il faudrait notamment mettre en place des mesures visant à améliorer la transparence, en rendant publics, par exemple, les renseignements touchant les systèmes de distribution et les temps d'arrêt des installations de traitement de l'eau. Les décideurs politiques pourraient également envisager la création de systèmes de gestion de l'eau à l'échelle régionale, ce qui permettrait un partage du personnel, un soutien professionnel à proximité et un apprentissage collectif en matière d'entretien des systèmes d'eau et des installations de traitement (c'est-à-dire des économies d'échelle en matière d'entretien). Les décideurs politiques devraient également accorder une plus grande attention aux solutions à distance et offrir aux populations des Premières Nations touchées, lorsque la situation devient désastreuse, l'option de se déplacer vers des zones pourvues de sources d'approvisionnement sûres. Enfin, il est primordial que les décideurs politiques instaurent un plus grand sentiment d'urgence en s'attaquant systématiquement au problème, au lieu de se contenter d'injecter des fonds sans plan précis. MLI

Introduction

Most Canadians take safe, clean drinking water for granted – most, but not all. Instead, those Canadians subject to drinking water advisories – including the more than 17,600 residents in Saskatchewan, Manitoba, and Ontario who have been subject to drinking water advisories for more than a year straight[1] – need bottled water to drink, cook and carry out other daily tasks like brushing their teeth and bathing. The vast majority of these people belong to Canada's Indigenous, or First Nations, communities.

The starting point for Canadians is that we are incredibly well-endowed with clean, fresh and safe water. Canada is home to 20 per cent of the world's freshwater and fully seven per cent of its renewable water supply (despite comprising just 0.5 per cent of its population). Our major cities have secure, almost uniformly uninterrupted supplies of drinking water, delivered cheaply and reliably to homes and businesses. It is the abundance of water and a remarkable national track record for the safe supply of water to its citizens that generates such frustration with the country's inability to provide so many First Nations communities with the same secure access to one of the necessities of life.

How is it that so many citizens in Canada, a developed, first-world country that boasts a modern democratic society and takes pride in its public health care system (well-documented current challenges notwithstanding) go without access to clean drinking water? Indeed, three separate communities in Ontario, with a total of over 3,000 residents, have had drinking water advisories in place for more than 20 years. Despite touting one of the world's most advanced economies and proclaiming itself a leader on the international stage through its engagement with organizations like the United Nations and the G7, Canada been unable to provide basic necessities like clean drinking water to a surprising number of its citizens for over two decades.

While access to clean drinking water is a necessity, an established human right and arguably a constitutional right in Canada[2], delivering it to each of Canada's nearly 40 million citizens has proven to be elusive. Without a doubt, politics, money and racism have all contributed to the persistence of gaps in access to clean water, as in the case of so many other social issues in Canada and elsewhere. Despite the temptation to identify an easy scapegoat, however, the lack of political will alone is not what has prolonged drinking water advisories in Canada.

Over the past several decades, successive federal governments have acknowledged this problem, pledged to tackle it and committed substantial financial and legislative resources to address the issue. And yet, these same governments have failed to eradicate drinking water advisories, with at least 27 Indigenous communities across the country currently impacted.[3] A closer look reveals that, notwithstanding political efforts, a variety of policy decisions refracted through multiple levels of government as well as geographical, logistical and informational challenges have made providing consistent access to clean drinking water one of the most persistent and troubling problems in Canada, particularly in First Nations communities.

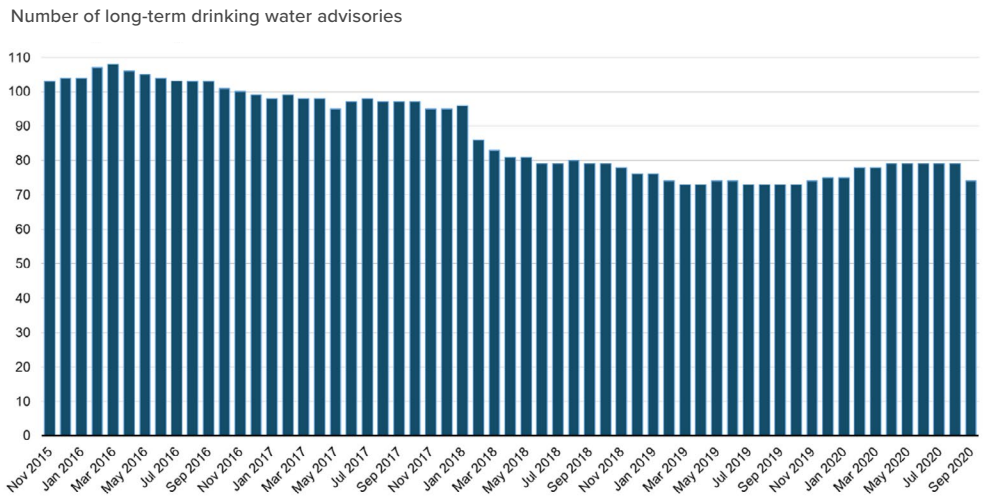
The role of water advisories

Drinking water advisories are an important precautionary measure used to protect public health. Advisories can be issued by a local government, First Nation or public health authority when drinking water quality has been, or may have been, compromised to the point where its consumption poses a risk to human health. Water quality can be adversely impacted as a result of any number of factors, including a deterioration in source water quality (e.g., contaminated groundwater or aquifers supplying wells); the presence of bacteria like E. coli; unacceptable concentrations of harmful chemicals or particles; problems associated with water treatment and distribution (e.g., inadequate filtration/disinfection, malfunctioning equipment); or for failing to meet the Canadian Drinking Water Guidelines.[4]

> *Advisories may advise consumers to boil water before drinking it, advise against the consumption of water, or advise against all forms of water use.*

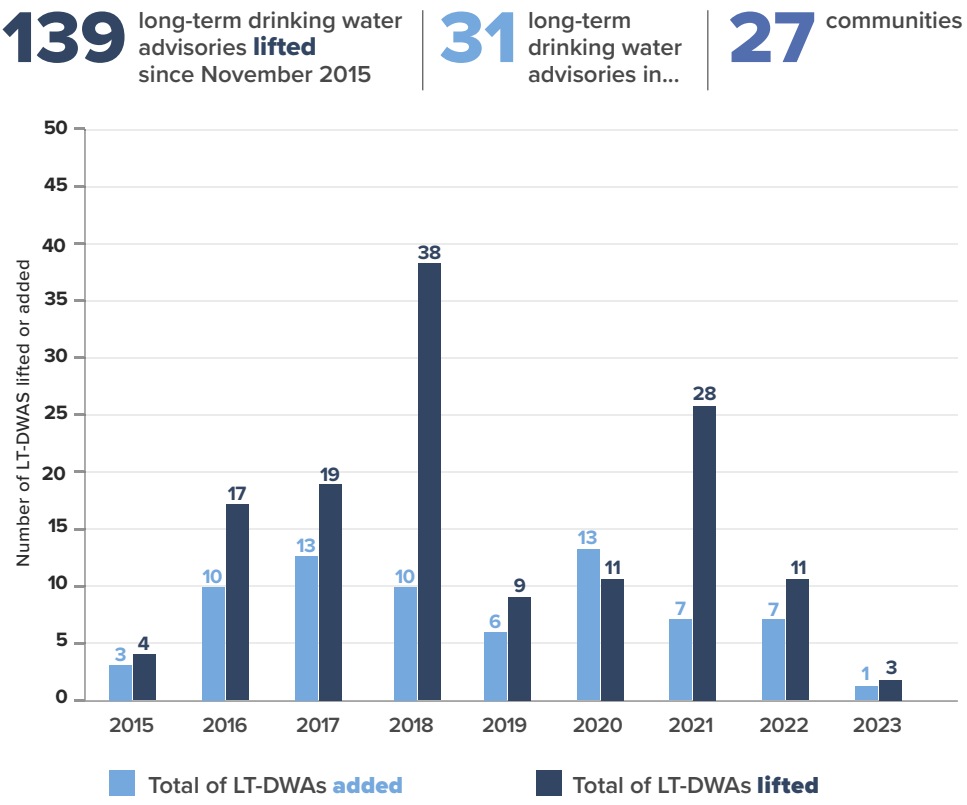
Advisories may advise consumers to boil water before drinking it, advise against the consumption of water, or advise against all forms of water use (e.g.: for bathing, washing clothes). Ideally, such advisories are temporary measures that buy time for compromised water systems to be fixed and put back into operation. In reality, however, several of these advisories remain in place for extended periods of time. Drinking water advisories that have been in place for more than 12 consecutive months are known as *long-term advisories*. Based on advice from an environmental health officer, the chief and council of impacted First Nations are responsible for issuing water advisories (or the First Nations Health Authority in the case of British Columbia). Likewise, once corrective measures have been taken to ensure drinking water is safe for human consumption, an environmental public health officer will advise that an advisory can be lifted, at which point it is up to the chief and council of an impacted First Nation to cancel the advisory.[5]

FIGURE 1: NUMBER OF LONG-TERM DRINKING WATER ADVISORIES IN PLACE IN CANADA FROM NOVEMBER 2015 TO SEPTEMBER 2020.



Source: Environment and Climate Change Canada.

FIGURE 2: PROGRESS ON LONG-TERM DRINKING WATER ADVISORIES IN CANADA BETWEEN 2015 AND 2023.



Source: Indigenous Services Canada.

Tracking water advisories in Canada

As of May 2023, there were a total of 31 long-term drinking water advisories in effect in Canada, impacting 27 Indigenous communities.[6] Since 2015, a total of 139 long-term drinking water advisories, impacting 90 Indigenous communities, have been lifted.[7] As a result of the collective efforts of the federal government and impacted First Nations, there was a relatively steady decline in the number of long-term drinking water advisories in place between 2015 and 2020, falling by nearly half, from 105 to 58 (see figure 1). This downward trend has continued over the past three years (see figure 2).

Of the 139 long-term drinking water advisories lifted since 2015, 23 had been in place for over five years, 34 were in place for over 10 years, 15 were in place for over 15 years, and seven were in place for over 20 years. Of the 31 still in effect in 2023, 3 have been in place for over five years, three have been in place for over 10 years, three have been in place for over 15 years, and three have been in place for over 20 years (leaving 19 that have come into effect in the past five years).

The number of improved water systems completed from 2015 to 2023 is impressive and indicates genuine progress towards increasing access to clean drinking water. This is true in many cases. For example, after nearly 25 years of drinking water advisories, the Shoal Lake 40 First Nation officially opened a new centralized water treatment plant in 2021 and subsequently lifted the community's drinking water advisory.[8] The water treatment plant cost more than $30 million and was made possible after an all-season road provided year-round access to the remote community, making it feasible for materials and equipment to reach the community. Today, nearly 300 residents, including children and young adults who had lived their entire lives under drinking water advisories, have safe, clean drinking water flowing into their homes.

The complexities of reporting water advisories

Nevertheless, the numbers do not tell the whole story; in fact, far from it. They can be misleading, incomplete and are, at best, a rather coarse-grained indication of the scope of the problem. For instance, five of the 90 First Nations communities in which long-term drinking water advisories have been lifted since 2015 have had new long-term drinking water advisories issued since 2019. Two of those communities had had their previous long-term drinking water advisories in place for over 15 years.

Consider, as well, that all the numbers reported above pertain merely to those public water systems that the federal government has given funding to

since 2015. An additional 12 long-term drinking water advisories are in effect in Saskatchewan, Ontario and New Brunswick for First Nations water systems that are not subsidized by the federal government, along with 10 long-term drinking water advisories in British Columbia (including in communities that the federal government has counted in its tally of those that have had advisories lifted since 2015). And those are just the numbers from communities south of the sixtieth parallel. The Northwest Territories and Nunavut each have one long-term drinking water advisory in effect, bringing the current total across Canada to at least 55.[9] The lack of clear, consistent, and transparent data collection regarding long-term drinking water advisories, both historic and contemporary, makes it difficult to get a clear picture of the extent of the problem within Canada.

> *"The lack of clear, consistent, and transparent data collection (...) makes it difficult to get a clear picture of the extent of the problem within Canada.*

Apart from the fact that long-term drinking water advisories belong within the purview of different authorities in Canada and are, or are not, counted in official tallies for different reasons, the numbers of advisories issued and lifted over time do not directly reflect national progress on addressing the issue. For example, while it is tempting to view an increase in the number of advisories lifted and a decrease in the "total" number of advisories in place as signs of increased traction in the quest to eradicate advisories altogether, this is not necessarily the case. As noted above, a community can have a long-term advisory lifted only to have another one issued within a few years, indicating a persistent problem that is not being fully resolved. Moreover, the numbers themselves can also more generally reflect the type of approach being taken to address the issue.

Counting water advisories

In 2009, Health Canada's report entitled, *Drinking Water Advisories in First Nations Communities in Canada: A National Overview 1995-2007*, found "the existence of a significant increasing trend in the number of [drinking water advisories] in effect between the periods of 2003 and 2007" (p. 14). Indeed, during that time, the number of long-term drinking water advisories nearly doubled from 58 in 2003 to 104 in 2007. The report also found that "[t]he number of First Nations communities affected by [drinking water advisories] also follows a significant upward trend during the same period" (p. 14).

One could easily mistake this as an indication that the state of First Nations water systems was in serious decline from 2003 to 2007. However, 2003 was, in fact, the year the federal government implemented the First Nations Water Management Strategy (FNWMS), which led (among other things) to increased testing, reporting, training and capacity to address water quality issues. The report notes that "the number of water samples tested increased seven-fold from 2002 to 2006" (p. 19) and that "reporting of [drinking water advisories] data to Health Canada Headquarters was more consistent after 2003" (p. 4). Furthermore, during that time "the number of First Nations communities with access to Community-Based Water Monitors and the number of communities with access to portable kits for biological analysis has more than doubled while the number of Environmental Health Officers has increased by one third" (p. 19).

Far from indicating a problem getting worse, the increased number of drinking water advisories from 2003-2007 reflected a more accurate representation of the problem itself, allowing for a much better understanding of the scope of the problem than had existed previously. The uptick further reflected the more focused attention the issue was receiving, as well as improved resources and better coordination between the federal government and local authorities. In this case, higher counts of long-term drinking water advisories plausibly indicated progress in addressing the problem. As the report notes, "[w]hen water-quality monitoring and reporting is increased, it is more likely that problems will be detected, which in turn increases the number of [drinking water advisories] issued." (p. 19). In this sense, the FNWMS was successful in scoping out the problem and increasing the capacity among First Nations and the federal

government to address it through "improved staffing and increased water sample testing that allow timely and informed decisions for the protection of public health" (p. 23).

In short, the numbers themselves are a rather poor indication of the scope of the problem and they risk oversimplifying the issue – given the different reasons why an advisory might be in effect, and the different factors involved in lifting an advisory that has been issued. Increased awareness, improved testing, enhanced monitoring, better coordination, and information sharing are all factors that will help to address the scourge of long-term drinking water advisories in Canada (in addition to building the appropriate infrastructure to properly treat and distribute water to citizens). These in turn require dedicated resources, community involvement, cross-jurisdictional collaboration, and sustained engagement with the issue.

The Canadian right to safe water

The right to safe and clean drinking water is nowhere to be found in the *Canadian Charter of Rights and Freedoms*, which articulates (albeit non-exhaustively) the fundamental freedoms as well as many of the rights of all Canadians. Nor is it included in the *Canadian Bill of Rights* that preceded the *Charter*, despite the former's purported expression of the principles and associated rights and freedoms that underwrite "the dignity and worth of the human person". And yet, how long could any Canadian hope to exercise, let alone enjoy, their constitutionally enshrined rights to, for example, security of the person, the pursuit of a livelihood, life, or even the freedom of thought without access to safe and clean drinking water?[10] How could the dignity and worth of an individual be assured in the absence of safe and clean drinking water? In this sense, the right to water is a fundamental human right, the kind of right that needs to be secured to allow for other rights and freedoms to be exercised and enjoyed by individuals and communities.

Given the critical importance of water to human life, it is no surprise that, in 2002, the United Nations Committee for Economic, Social and Cultural

Rights (UNCESC) recognized the human right to water. Well, perhaps it *is* surprising that the right to water was not recognized until the 21st century. However, the UNCESC made clear that the right to water is a key aspect of the right to an adequate standard of living, which was itself explicitly recognized in Article 25 of the 1948 *Universal Declaration of Human Rights*. No doubt the unprecedented population boom of the post-World War II era resulted in unanticipated pressure on the world's freshwater resources in a manner that, paired with the increasing impacts of climate change in the latter 20th century, created scarcities that all but forced the clarification that an adequate standard of living for each human being does indeed include water.

What happens when there is not enough safe water?

The World Health Organization noted that "absent, inadequate, or inappropriately managed water and sanitation services expose individuals to preventable health risks."[11] The Guidelines for Canadian Drinking Water Quality, established by Health Canada with input from the provinces and territories, specify various contaminants and exposure levels that should be tested for in potable water systems in order to prevent "adverse health effects in humans."[12] In Canada alone, a broad number of health concerns have been associated with low quality drinking water in recent decades, including gastrointestinal infections, skin problems (from eczema to skin cancer), birth defects, obesity, diabetes, hypertension, mental stress (anxiety, depression), heart diseases, liver diseases, kidney problems, neurological problems, immunopathology (e.g., autoimmune diseases), thyroid conditions and infant mortality.[13] The absence of clean drinking water can have direct negative impacts on an individual's health, from temporary and inconvenient to serious and life threatening, though all preventable.

Beyond direct health impacts, however, precarious access to safe and clean drinking water can give rise to multifaceted social consequences for affected communities, as far too many First Nations communities in Canada

know firsthand. A 2011 National Assessment of water systems in First Nations communities across the country (commissioned by Indian and Northern Affairs Canada [INAC]) found that more than one in three water systems were considered high risk while an additional one in three were considered medium risk,leaving less than one in three in the low risk category.[14] High risk systems are those with "major deficiencies, which... may lead to potential health and safety or environmental concerns" and require "immediate corrective action."[15] Rather unsurprisingly, another study, commissioned by Health Canada that same year, found that First Nations Canadians are more likely than those who live in comparable sized off-reserve communities to have negative perceptions about the safety of their water.[16]

A 2008 profile of First Nations communities without access to safe drinking water observed that, "for many, water has become a source of fear, and people have good reason to believe that what comes out of their taps may be making them sick."[17] Indeed, a survey that year found that more than one in three people living on reserve believed their water was unsafe.[18] As recently as 2016, an analysis of drinking water quality in Indigenous communities in Canada and health outcomes found that "*[r]esidents of First Nations reserves were less confident about their water source, household water supply and overall water safety than non-reserve populations.*"[19]

Adjusting to life in a poor water environment

A distrust of the quality of tap water typically leads to less usage and an increased reliance on bottled water for everything from drinking to making food, bathing and cleaning, as well as increased anxiety and time spent worrying about securing an adequate supply of clean water.[20] While this fear is a personal matter for each member of an affected community, it is especially taxing for the parents of young children and those caring for vulnerable family members (including the elderly and people with mental and physical disabilities), for whom bathing, personal hygiene and nutrition are especially critical for basic

health, safety and development. A parent needing to bathe their newborn baby, or prepare formula for the baby to drink, might think twice about doing so if the water coming out of the tap does not appear safe – even if it has been deemed safe for consumption by an environmental health official.[21]

An increased reliance on bottled water also affects the cost of living for families. When a bottle of water costs more than a bottle of juice or pop, which is not uncommon in remote and rural communities, families with limited means can be faced with difficult dietary trade-offs – a dilemma that has been worsened by inflation in recent years.[22] In cases of prolonged drinking water advisories, these decisions can lead to further health impacts, especially for youth in communities where healthy recreational opportunities are often limited. The combination of poor diet and lack of exercise have well-known negative effects on physical health in addition to pernicious, if less well-documented, effects on mental health.

The social costs of poor water supplies

More than health and safety are at risk in communities without clean water supplies. For example, the Neskantaga First Nation in Ontario has been subject to a water advisory since 1995 (the longest running advisory in the country) and has had to shut down its on-reserve school on a number of occasions; at times due to safety issues and, at other times, because departures from the community have left the school with inadequate numbers of qualified teachers and support staff.[23]

And the Neskantaga First Nation is far from the only water-insecure community grappling with outmigration. According to the 2021 Canadian census, at least 10 of the communities currently subject to long-term drinking water advisories have seen a decline in population since 2016.[24] Combined with other aggravating factors such as limited housing availability and poor or limited telecommunications infrastructure, the effects of a lack of clean drinking water can cascade through a community, exacerbating labour shortages, compromising education and other local social services

and severely diminishing economic development opportunities for those left behind. In the worst cases, water insecurity also appears to contribute to higher suicide rates.[25]

Precarious access to safe drinking water also takes a significant spiritual toll. Former Grand Chief of the Assembly of First Nations, Phil Fontaine, wrote in 2008, "First Nations have always viewed water as a sacred trust. From time immemorial, First Nations have centered their existence on water. From the careful selection of community sites, as a means of transportation and dependence on the harvest from the waters."[26] A lack of access to safe drinking water, combined with perceived threats on traditional water sources, undermines the spiritual well-being of Indigenous Canadians.

In 2008, in response to activities in the oilsands that threatened water sources for humans and animals in northern Alberta, the chiefs of Treaties 6, 7 and 8 called for a moratorium on new oil & gas projects pending meaningful input from affected First Nations communities, arguing that oilsands development had "all but destroyed the traditional livelihood of First Nations."[27]

Writing to the United Nations in 2021, the Assembly of First Nations resolved:

> *Water is fundamental for life. For First Nations, the significance of water deepens through our eternal connection to water. Many First Nations consider water to be a relative, rather than a resource that can be bought or sold in which there exists a reciprocal relationship that must be continuously nurtured and respected. We operate under the basic principle that if you take care of the water, it will take care of you. We understand that a healthy ecosystem is necessary in order to exercise our Indigenous rights and laws, which enable us to fish, hunt, gather and practice our traditional customs and ceremonies. While some of these concepts likely resonate with non-Indigenous peoples as well, the reality is that Western ways of knowing have largely precluded such characterizations and have, thereby, led to the pollution and desecration of Mother Earth.*
>
> *For First Nations women, this connection to water deepens through their roles as child bearers. Just as water from Mother Earth carries life to us, women carry life and water in their wombs during pregnancy.*

It is in this way that we recognize that all aspects of creation are interrelated. When settlers arrived on Turtle Island (i.e., North America), Indigenous natural law was largely replaced by colonial law, changing the ways that water was respected. Colonialism has had negative ramifications for Indigenous Knowledge relating to water, and the intergenerational transfer of this knowledge has thereby been diminished. Our traditional ways of being were not passed on from grandmothers to mothers who, in turn, have been unable to teach our youth. As a result, First Nations have suffered a loss of traditional roles, responsibilities, practices, and stewardship. It has been difficult to reclaim these roles since, to this day, the vast majority of policies in Canada that involve water fail to embody the critical roles of First Nations women with respect to water.

For communities that have spent years, in some cases decades, subject to drinking water advisories, the lack of access to a fundamental part of the natural world and a perceived inability to address the problem – and, in doing so, secure fundamental human rights for residents – is spiritually debilitating.

Strengthening the Indigenous right to clean water

Five years after the UNCESC addressed the right to water within the existing internationally recognized human rights framework, that framework was expanded and further refined in 2007 when the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was adopted. It is no accident that the UNDRIP includes reference to Indigenous Peoples' right to uphold their unique relationship with their traditional waters, including their obligations to future generations.[28] Freshwater scarcity and contamination have disproportionately impacted Indigenous people whose communities are often marginalized from the dominant form of decision-making and socioeconomic forces that prioritize the consumption of water the world over. This is true in Canada in the case of, for example, the Athabasca Chipewyan First Nation

and the Alberta oilsands. It is not unique to Canada, though, as Indigenous communities elsewhere have taken similar action. In Bolivia, for example, the Indigenous residents of El Alto and Cochabamba have bravely fought back against the government's plan to privatize the water supply.

> *Canada has been called out, both nationally and internationally, for the poor quality of water on Indigenous reserves.*

Canada has been called out, both nationally and internationally, for the poor quality of water on Indigenous reserves. A 2005 report from the Office of the Auditor General of Canada found that residents of First Nations communities in Canada were not being afforded the same level of protection as other Canadians vis-à-vis safe drinking water, citing the lack of a regulatory framework and inconsistent implementation of policies, guidelines and funding relating to drinking water in First Nations communities. Canada was also one of the minority of countries to abstain from voting in 2010 when the United Nations General Assembly made the right to water explicit by recognizing "*the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights.*"[29] Only recently did Canada formally recognize the right to water.

Despite touting itself as a leader on the international stage, Canada has been slow to recognize significant developments when it comes to international human rights, though it does tend to come around eventually.[30] Canada has been even slower to address the issue of safe and clean drinking water in First Nations communities, but it must do so to restore the well-being of these communities and uphold the dignity and worth their residents.

Government awakens to the water crisis

The turn of the 21st century brought a new, and necessary, focus to drinking water in Canada. In the year 2000, a tragedy in Walkerton, Ontario saw nearly half of the residents of the roughly 5,000-person town fall ill after the local water system was contaminated with E. coli. Seven residents died following their exposure to the bacteria. A public inquiry was soon launched and the manager of the town's public utilities commission was later sentenced to a year in jail for his role in the water system's failure. In addition to feelings of shock, sorrow, anger and betrayal, the tragedy brought clean drinking water to the forefront of public discourse in Canada, along with a widespread and resolute commitment to prevent such a catastrophic failure from ever happening again.

First Nations communities in Canada had already been dealing with water issues for years before Walkerton, and some continue to face drinking water advisories today. In 1995, shortly after relocating to allow for the growth of their community, the Neskantaga First Nation in northern Ontario was subject to a drinking water advisory after the newly built water treatment plant serving the community broke down. Last year the community ominously marked 10,000 days under the drinking water advisory, which remains in place today.[31] In 1999, the Kitigan Zibi Anishinabeg in Quebec were placed under a drinking water advisory after unsafe levels of uranium were found in the water drawn from community wells. It took nearly 20 years before the drinking water advisory was lifted in the community, though many homes are are still without access to clean drinking water.[32]

The Shoal Lake 40 First Nation community, which straddles the Manitoba-Ontario border, was subject to drinking water advisories for nearly 25 years before its first community-scale water treatment plant opened in 2021, allowing the advisory to finally be lifted.[33] Not all affected First Nations communities are so lucky. According to Indigenous Services Canada, 31 long-term drinking water advisories (i.e., those that have been in place for more than one year) are currently affecting 27 First Nations communities in Canada.[34]

Five years after the Walkerton tragedy, the water supply of another small community in Ontario was contaminated with E. coli. This time it was Kashechewan, a small, remote, First Nations community in northern Ontario. The federal government spent $16 million evacuating the community to protect

residents from the health risks of exposure to the contaminated water. The crisis received some media coverage, but nowhere near the sustained attention of the Walkerton tragedy. Whereas a major public inquiry was launched to identify what went wrong in Walkerton and ensure it did not happen again, no public inquiry has ever been set up to examine the failures of public drinking water systems in Kashechewan or any other First Nations community, despite years of ongoing drinking water advisories and generations of First Nations relying on bottled water to meet their basic needs.[35]

> *The Inquiry report found that First Nations communities in Ontario are not provided the same access to safe, clean drinking water as other municipalities.*

The Walkerton Inquiry report, released in 2002, included a chapter on First Nations, despite the fact that the responsibility for drinking water for non-settled First Nations (i.e., those still covered by the *Indian Act*) belongs to the federal government, whereas the responsibility for drinking water in municipalities in Ontario is delegated by and ultimately within the jurisdiction of the provincial government. The Inquiry report found that First Nations communities in Ontario are not provided the same access to safe, clean drinking water as other municipalities in the province, largely due to inadequate infrastructure, a dearth of trained and certified water system operators, poor testing and inspection, higher levels of water contamination and insufficient water distribution systems.[36] (Conditions are similar in First Nations communities in other provinces.)

The Inquiry report also noted a lack of regulated standards when it comes to drinking water on reserves, in contrast with municipalities where standards are enforced by provincial and territorial legislation. The lack of enforceable standards was also identified as a major barrier to ensuring First Nations have access to clean drinking water in a subsequent 2005 report by Canada's Commissioner for the Environment and Sustainable Development.[37]

Finally tackling First Nations water crises

While the public attention and outcry around precarious access to water in First Nations communities was muted in comparison to the tragedy in Walkerton – or the contamination in North Battleford, Saskatchewan, for that matter – the federal government had been taking steps to address the issue. From 2001 to 2002, INAC surveyed water and wastewater systems in First Nations communities across Canada to establish a baseline of information regarding existing drinking water infrastructure and human resource capacity. The findings would inform plans, programs and investments for the next decade as the federal government began its first serious efforts to address the issue of clean drinking water in First Nations communities.[38]

The baseline assessment covered 740 drinking water systems serving 691 First Nations communities, finding that nearly 30 per cent were a high risk ("water systems with potential health and safety concerns"), 46 per cent were medium risk ("water systems requiring some repairs") and only a quarter were low risk ("water systems experiencing minimal problems or without any problems").[39] The assessment included preliminary cost estimates for addressing water and wastewater system deficiencies at approximately $500 million along with a further $500 million for Operations and Maintenance (O&M) costs (e.g., training, monitoring, etc.), $500 million to provide services to new homes and $185 million "to address the backlog".[40]

Based on the data from the baseline assessment, the Government of Canada announced the First Nations Water Management Strategy (FNWMS) in 2003: the first comprehensive plan to tackle drinking water and wastewater systems within First Nations communities. The FNWMS included seven distinct areas of focus that would receive a total of $1.6 billion in funding between 2003 and 2008: (1) infrastructure upgrades (with a focus on high-risk systems); (2) improved monitoring and reporting; (3) enhanced O&M; (4) increased training; (5) new water quality management protocols; (6) enhanced public awareness; and (7) new standards, policies and protocols reflecting a multi-barrier approach to water management (a comprehensive system designed to protect drinking water from source to tap).[41]

The FNWMS was in many ways laudable, in terms of its data-based, multi-faceted approach as well as its substantial investment towards improving

drinking water on-reserve. A 2009 Health Canada report noted that the strategy led to an improved understanding of the challenges plaguing First Nations communities, improved monitoring and reporting, and allowed for faster and more coordinated responses to emerging water issues.[42] Nevertheless, it was not wholly effective in its intent.

In a 2005 report, Canada's Commissioner for the Environment and Sustainable Development (an officer of the Office of the Auditor General) noted that those who live in First Nations communities:

> *do not benefit from the same safeguards on drinking water as most Canadians who live off reserves. The main reasons are a lack of a regulatory regime for drinking water in First Nations communities and fragmented technical support available to First Nations for the design, construction, operation and maintenance of water systems. There are also a number of management and operational issues that contribute to this, such as inconsistent implementation of government guidelines and failure to carry out water testing (p. 5).*

The Commissioner added that, "to a significant extent, the success of the First Nations Water Management Strategy depends on INAC and Health Canada addressing the management weaknesses we have noted" (p. 26).

In 2006, the Government of Canada launched the Plan of Action for First Nations Drinking Water (PAFNDW). The PAFNDW built on the FNWMS and committed an additional $60 million between 2006 and 2008 to further its aims and address the findings of 2005 Commissioner's report. For instance, it explicitly included a commitment to reporting on progress, along with a promise to assemble an expert panel to provide options and advice for developing a regulatory framework and legislation governing water quality in First Nations communities.

One of the key findings of the resultant expert panel report was that "adequate resources – for plants and piping, training and monitoring, and operations and maintenance – are more critical to ensuring safe drinking water than is regulation alone."[43] Enforceable rules around water provision are important, but without the appropriate facilities and financial and human resources to adequately manage public water systems, rules around how those systems operate are at best moot and, at worst, counterproductive. The panel also noted a problematic gap between the federal government's cost estimates

and the actual amount of funding needed to bring First Nations drinking water systems up to an acceptable standard on account of a variety of factors plaguing government financial plans, such as using non-technical system assessments as a basis for cost estimates, and failing to account for increased construction costs over time and the impacts of modernized standards with respect to construction, treatment, monitoring, and the like.[44]

> *The next step forward came in 2008 with the introduction of the First Nations Water and Wastewater Action Plan (FNWWAP).*

The next step forward came in 2008 with the introduction of the First Nations Water and Wastewater Action Plan (FNWWAP). An additional $330 million was allocated to support the FNWWAP, which reinforced the PAFNDW while adding new objectives, including a commitment to consult with First Nations on new legislation as well as the commissioning of a national engineering assessment of the status of First Nations water systems across the country. This would be the first comprehensive account of existing infrastructure since the 2001-2002 INAC assessment that had informed the 2003 FNWMS, only this time providing more technical information to allow for a more complete and accurate account of needed improvements and cost estimates.

The resulting report, released in 2011, provides the most complete recent account of First Nations water systems in Canada. It assessed 807 water systems serving 560 First Nations.[45] Of these, 39 per cent were identified as high risk ("systems with major deficiencies… may lead to potential health and safety or environmental concerns"), 34 per cent as medium risk ("systems with deficiencies… pose a medium risk to the quality of water and to human health") and 27 per cent as low risk ("systems that operate with minor deficiencies… usually meet the water quality parameters that are specified by the appropriate Guidelines").[46] A little over half of the systems had fully

certified primary operator and four out of five had a backup operator, and fewer than one in three had a maintenance management plan or an emergency response plan.[47] The report estimated that meeting the new protocols for water systems developed by INAC in 2006 would cost around $861 million in total.[48] The report also included a list of recommendations to reduce risks of existing systems, meet the future servicing needs of systems and improve future assessments of systems.

In successive reports over the past 25 years, the costs associated with addressing drinking water in First Nations communities have grown along with the recommended steps to ensure water systems are managed safely and efficiently. This is not to say that the federal government has neglected to spend money on the issue. According to the Office of the Auditor General, "[b]etween 1995 and 2003, the federal government spent about $1.9 billion to help First Nations communities provide safe drinking water and wastewater services."[49] A further $600 million was committed in Budget 2003 to support the FNWMS. Per a letter to the United Nations, between 2006 and 2014 the federal government "invested approximately $3 billion towards water and wastewater infrastructure and related public health activities to support First Nation communities in managing their water and wastewater systems."[50] From 2015 to the present, the federal government has spent over $5.7 billion "to build and repair at least 123 new water and wastewater plants, repair or upgrade 658 others, and support the effective management and maintenance of water systems."[51]

Successive governments have made progress and, however misguidedly, worked towards what have been identified by various sources as the keys to addressing the issue. Nonetheless, the ongoing efforts, supported by more than $10 billion of investments, have not coalesced into a cohesive and effective approach. Today, thousands of First Nations citizens in Canada are still subject to drinking water advisories, and in some cases have been for decades. Unfortunately, major barriers interfere with the effort to address remaining water supplies.

Barriers to provision of safe water

While the need for clean drinking water is simple and straightforward, safely supplying it to all the households in a given community is anything but. It takes surprisingly little for drinking water to become contaminated, whether at the source or at various points along the distribution line, and potentially put public health in peril. Indeed, the journey of drinking water from source to tap (or spigot) is inherently complex and fraught with vulnerabilities, as is all too familiar for many First Nations communities in Canada that have precarious access to safe, clean drinking water. 27 Indigenous communities are currently impacted by 31 long-term drinking water advisories, according to the latest numbers from the Government of Canada.[52]

> *There are three basic types of water systems used in Canada.*

There are three basic types of water systems used in Canada. The most common, especially in non-First Nations communities, is water piped into the home, delivered from a centralized water treatment plant managed by the local government. Those who do not have treated water piped directly into their homes typically depend on either water delivered by truck and stored in a cistern, or water storage tank (private or communal), or a private well to meet their household water needs.

A national assessment of First Nations community water systems commissioned by the federal government and completed in 2011 found that 72 per cent of homes had piped water delivery, 13.5 per cent received water by truck delivery and 13per cent relied on individual wells – the remaining 1.5 per cent of households reported having no water service (i.e., "without plumbing in the house")[53] Each method has its benefits and drawbacks, including capital costs and maintenance, as well as distinct vulnerabilities to contamination on account of the components involved in each system. For example, the lifespans

of water pipes, which have high capital costs, are typically measured in decades (e.g., 50 to 70 years, depending on the materials used in their construction) Wells and cisterns are less expensive to build but require more frequent cleaning and monitoring. They also use water pumps that often need to be replaced within a decade or so of installation.

> *All methods of water delivery originate with a source of water, either groundwater or surface water.*

All methods of water delivery originate with a source of water, either groundwater (i.e., aquifers) or surface water (e.g., lakes, rivers and reservoirs). 46per cent of First Nations water systems draw on groundwater and 29 per cent draw on surface water, which is most common in Ontario and Manitoba.[54] Depending on the depth of a given groundwater source, it can be adversely impacted by surface water. (Simply put, the closer to the water table or surface water bodies the groundwater, the more vulnerable it is to surface water). For example, some wells draw groundwater that is susceptible to surface water and thereby to more frequent contamination. These are known as *GUDI* wells – which stands for groundwater under the direct influence of surface water.

Per the national assessment, 6 per cent of First Nations water systems use GUDI wells.[55] A further 19 per cent of First Nations water is supplied through formal agreements with neighbouring municipalities.[56] The assessment continues, "[n]ationally, 52 [per cent] of the groundwater systems, 51 [per cent] of the GUDI systems, 36 [per cent] of the surface water systems and 7 [per cent] of the [Municipal Type Agreement] systems are high risk systems," meaning they have "major deficiencies" that "may lead to potential health and safety or environmental concerns" and require "immediate corrective action".[57]

Protecting source water from contamination is vital to ensuring a safe supply of drinking water. Without clean water sources, it is exceedingly difficult to supply people with safe drinking water. The 2011 national assessment noted that source water protection plans, which are intended

to identify threats to source water and associated policies and practices to mitigate contamination of groundwater and surface water, were "uncommon" in First Nations communities.[58] Nevertheless, a Health Canada study of drinking water advisories in First Nations communities in Canada from 1995-2007 found that less than 10 per cent of long-term drinking water advisories were the result of source water contamination. Much more common causes included issues with equipment (24 per cent), the microbiological quality of water samples (43 per cent), system operation (21 per cent) and disinfection, with the latter being the most common (56 per cent).[59] In contrast, the most common cause of drinking water advisories that lasted less than a year during the same period (1995 and 2007) was attributable to unacceptable microbiological quality (38 per cent) with the rest owing to equipment malfunction (29 per cent), disinfection (27 per cent) and unacceptable levels of turbidity, or cloudiness due to particles (25 per cent).[60] Problems with water system management appear to be the more common reason for long-term drinking water advisories in First Nations communities.

Understanding water treatment

Following best practices of water system management, after being drawn from a source, raw water is treated and tested at a water treatment plant before being supplied to individuals for consumption.[61] Water treatment plants are inherently complex, making them expensive to construct and vulnerable to breakdowns, especially in the absence of proper management, which is also expensive. Water systems in First Nations communities are owned and operated by the respective First Nations, while the federal government funds their construction and, as of 2020-2021, provides 100 per cent of the funding for operations and maintenance (prior to 2020, First Nations were responsible for 20 per cent of operations and maintenance costs, the federal government 80 per cent - the change followed a troubling report from the Auditor General of Canada that highlighted the shortcomings of the federal government's approach to addressing drinking water concerns in First Nations

communities[62]). Nevertheless, while a recent report from the Parliamentary Budget Officer found that capital spending from 2016 to 2026 is expected to be sufficient, operations and maintenance spending from 2016 to 2026 is only expected to cover two thirds of needed funding, leaving an annual gap of $138 million.[63] This is particularly concerning given that most long-term drinking water advisories tend to result from water system management issues.

> *Routine drinking water treatment can address known aspects of the source water to ensure it is suitable for drinking.*

Routine drinking water treatment can address known aspects of the source water to ensure it is suitable for drinking (e.g., adding chlorine, as is common practice in Canada, to eliminate bacteria and viruses). Testing occurs prior to distribution to ensure that drinking water meets applicable guidelines and regulations before it is consumed. Given the implications for public health, treating and testing drinking water are both specialized tasks requiring training and certification to comply with applicable guidelines and regulations.[64] For most Canadians, drinking water quality is regulated by provincial or territorial legislation that specifies standards and enforcement measures. First Nations Canadians subject to the *Indian Act*, however, fall under the jurisdiction of the federal government rather than their home provincial or territorial government. In stark contrast with the territories and provinces, the federal government has no legislation governing water quality, instead relying on voluntary (though, to be sure, encouraged) compliance with national guidelines. As such, the drinking water in many First Nations communities is not legally required to be provided at the same quality standard as in neighbouring communities, and there is no legal enforcement mechanism available if this drinking water does not meet the national guidelines.

Maintenance of First Nations water systems

The national assessment completed in 2011 found that only 54 per cent of water systems in First Nations communities had fully certified primary operators while 81per cent had backup operators. As the report notes,

> *The ability to develop and retain suitable certified operators is critical to having a well run water or wastewater system. Certified operators are more likely to operate facilities in compliance with applicable guidelines and legislation. The absence of a certified operator may impact other issues such as monitoring, reporting and record keeping, and increases risk associated with these components. (p. 25)*

The assessment also found a considerably lower percentage of certified operators as remoteness of the community increased. The number of individuals available and interested in becoming and remaining certified water system operators (or backup operators, for that matter) is severely limited by the small population size of many impacted First Nations, Moreover, the remoteness of such communities makes it difficult for such individuals to access training and receive and maintain certification. Water system operators working for First Nations are also underpaid compared to operators in non-Indigenous municipalities (who enjoy high wages and benefits afforded by union representation) which makes attraction and retention challenging.[65]

The proper maintenance of water treatment plants is instrumental to the sustainable supply of safe, clean drinking water and for avoiding preventable system breakdowns. Proper maintenance also reduces costs in the long run by addressing minor, routine repairs before they become major, expensive problems that can upend water distribution for prolonged periods of time. In 2011, only 28 per cent of First Nations water systems had maintenance management plans. Such plans "represent a change from reactive to proactive thinking and, when executed properly, optimize maintenance spending, minimize service disruption, and extend asset life."[66] Likewise, just 28 per cent of systems had emergency response plans.[67]

With fewer certified operators and more haphazard management of water treatment plants, operation and maintenance inevitably suffer and lead to problems and potentially emergencies. As with the number of certified operators, "[n]ationally, the overall risk of a water systems appears to increase

with remoteness."[68] For example, "in Zone 4 [the least accessible zone, as defined by INAC] the water systems are 2.5 times more likely to be high risk than low risk."[69]

Water distribution in First Nations communities

Once treated and tested for quality, water that leaves a treatment plant is distributed to consumers, either through watermains and pipes into homes or by truck to cisterns that can serve individual homes or groups. Piping water into the home is the most effective way to deliver clean water to households. However, the local terrain, geography and remoteness of communities as well as the distance separating houses from water treatment plants can make it challenging and expensive to connect all homes in a given community. Laying pipe is expensive and labour intensive, especially in small communities that cannot always be accessed by road, making it more expensive to source the necessary materials, equipment, and specialized labour.

In order to provide funding for standard piped water delivery, the federal government also requires residential lot frontages to be no more than an average of 30 meters, beyond which cheaper alternatives (e.g., trucked water delivery) are generally used.[70] This is problematic for First Nations communities such as the Peepeekisis in Saskatchewan, which has around 150 houses in a community with an area of approximately 6-by-14 km.[71] Water delivered by truck to cisterns is a cheaper method, to be sure, but is not without complications. Cisterns need to be cleaned and disinfected regularly, and some water advocates claim they pose health risks to consumers.[72] Wells, too, require more regular cleaning and maintenance than piped delivery, and depending on their construction, are much more susceptible to contamination. In the case of GUDI wells, for example, such contamination can be the result of seasonal flooding and land use practices that can impact surface water (e.g., agricultural and industrial uses).

Delivering safe, clean drinking water to individuals is complex and costly. Everything from the water source to treatment and distribution materials, to the local terrain, human resources, plans for proper operation and maintenance, and communication protocols between different authorities can prevent clean water from reaching residents. Barriers to provision can occur at each stage of the process. Many First Nations communities in Canada have precarious access to clean drinking water due in part to their small size and remoteness and the added complications of delivering clean drinking water to such isolated locations.

> *Delivering safe, clean drinking water to individuals is complex and costly. .*

Communities currently subject to long-term drinking water advisories vary in population size from around 50 to 2,500 people with the majority having fewer than 1,000 residents, and approximately half do not have year-round access by road. Local geography largely determines the available water sources and feasible water distribution methods for a given community while population and proximity to established urban centres affects everything from available materials and labour, construction costs and the possibility of pooling resources with neighbouring municipalities, to the accessibility of training for water system operators needed to manage and maintain water delivery systems. While adequate financial resources can help address many barriers to provision of clean drinking water, they are no substitute for the human resources necessary to construct, operate and maintain effective and sustainable water deliver systems.

Conclusion

First Nations communities deserve safe and secure water supplies. The Government of Canada professes a desire to deliver the water and has shown a willingness to spend heavily to achieve that objective. The public demands government attention and viable solutions; the continuation of the water problems remains a national embarrassment. What, then, are the key barriers to getting this done? Several things stand out:

- **Government funding:** While the sums are large and progress has been made, several of the communities face formidable barriers to getting viable solutions.
- **Community location:** Some communities, particularly in lowland areas, are poorly situated for water purposes. They were established in the 1950s and 1960s without scientific study of the suitability of the locations. Their problems will not soon be addressed.
- **Long-term maintenance:** This remains a perpetual problem, in that trained personnel often work in stressful conditions with little or no local backup. Finding and retaining people is a significant problem in some communities, particularly in remote areas.
- **Little margin for error:** Canadian water standards are, appropriately, exacting and difficult to achieve. This is enough of a difficulty in well-financed, fully staffed urban settings. It is a formidable barrier in small, isolated communities with little backup.
- **Poor national understanding of the challenges:** Clean, fresh water seems like a simple thing to provide, especially in a country as water-rich as Canada. But most folks pay little attention to the complexities of water delivery systems. Cistern-based, truck-delivered water supplies, which would be a challenge anywhere, are a particular shortcoming in communities with many over-crowded homes and insufficient delivery capacity.

What can be done? There are a few policy initiatives that should be considered, including:

- **Continuous transparency:** It helped when the government kept a running count of water advisories, but public interest faded over time. Public information about delivery systems should be

included, as should data on down-times in the water treatment facilities.

- **Region-wide water management systems:** These would provide for a sharing of personnel, nearby professional backup, and collective learning about water systems maintenance and treatment facilities. Creating a maintenance economy of scale could be good thing for Indigenous communities.
- **The option of relocation:** First Nations have deep cultural and historical ties to their communities. In extreme cases where water supplies are unacceptable and alternatives too expensive, the communities could be given the option of voluntary relocation. Rebuilding in a location with excellent water supplies could be health-giving for the communities involved.
- **Give greater attention to remote solutions:** Advanced sensors and remotely operated plants may be an option worth exploring. This still could, and should, be managed by Indigenous governments and/or companies, but this major shortcoming in Canadian infrastructure begs for a high technology solution.
- **An increased sense of urgency:** First Nations people understandably wonder if the country cares or even knows about their residential challenges. Water goes untreated. Major housing shortages linger unaddressed for decades. Shortcomings with other local facilities are legendary. First Nations can be forgiven for wondering why Canadians tolerate such conditions when they would never accept this in non-Indigenous communities.

Canadian policy is trending in the right direction, but it is not moving fast enough to meet Indigenous needs. Unless there is continued vigilance, the arrangements could falter, existing systems could deteriorate, and a serious problem could resurface. Water is a necessity and therefore a basic right in Canada. Understanding the challenges in full, handling emergencies expeditiously, developing and implementing long-term solutions, and committing publicly to providing First Nations with adequate and appropriate water supplies is not an act of generosity or an optional exercise. Maintaining safe drinking water is a foundational responsibility of government. Further delays should not be acceptable. MLI

About the authors

Matthew Cameron is a Yukon-based researcher and academic. He is an Instructor at Yukon University, where he has taught in the Liberal Arts, Indigenous Governance and Multimedia and Communications programs since 2016.

In addition to his academic work, Matthew has nearly a decade of experience working in various capacities for the Yukon Government, including as Director of Communications for the Yukon Government Cabinet. Through this work he has been directly involved in various intergovernmental structures in the Yukon, within Canada and at the circumpolar level and has developed an in-depth knowledge of public policy, politics and governance in Canada's North.

Matthew received a PhD in Philosophy from the University of St. Andrews. He holds a Master's degree in Philosophy from the University of Western Ontario and completed his undergraduate studies in Philosophy and Political Science at the University of British Columbia. Matthew works, lives and grew up on the traditional territory of the Kwanlin Dün First Nation and the Ta'an Kwäch'än Council in Whitehorse, Yukon. MLI

Ken S. Coates is a Distinguished Fellow and Director of Indigenous Affairs at the Macdonald-Laurier Institute and a Professor of Indigenous Governance at Yukon University. He was formerly the Canada Research Chair in Regional Innovation in the Johnson-Shoyama Graduate School of Public Policy at the University of Saskatchewan. He has served at universities across Canada and at the University of Waikato (New Zealand), an institution known internationally for its work on Indigenous affairs.

Ken has also worked as a consultant for Indigenous groups and governments in Canada, New Zealand, and Australia as well as for the United Nations, companies, and think tanks. He has previously published on such topics as Arctic sovereignty, Aboriginal rights in the Maritimes, northern treaty and land claims processes, regional economic development, and government strategies for working with Indigenous peoples in Canada. His book, *A Global History of Indigenous Peoples: Struggle and Survival*, offered a world history perspective on the issues facing Indigenous communities and governments.

He was co-author of the Donner Prize winner for the best book on public policy in Canada, *Arctic Front: Defending Canada in the Far North*, and was short-listed for the same award for his earlier work, *The Marshall Decision and Aboriginal Rights in the Maritimes*. MLI

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Endnotes

1 Data from Indigenous Services Canada and Statistics Canada.

2 Bowden (2011).

3 May 2023 figures from Indigenous Services Canada.

4 These are national recommendations for water quality that represent the best health and medical data but are non-binding, rather like Canada's Food Guide.

5 Or, again, the First Nations Health Authority in British Columbia.

6 Indigenous Services Canada website. The numbers are updated periodically by the Government of Canada. Between May and August 2023, the latest date for which data is available, three long-term advisories in one community (Northwest Angle No. 33 in Ontario) were lifted, including two advisories that were in place for over 10 years, and one advisory became a long-term advisory in July and was subsequently lifted in August (Wabaseemoong Independent Nations in Ontario).

7 Data from Environment and Climate Change Canada

8 https://www.cbc.ca/news/canada/manitoba/shoal-lake-40-first-nation-drinking-water-advisory-1.6176167

9 As of May 2023. Data from Indigenous Services Canada (https://www.sac-isc.gc.ca/eng/1516134315897/1533663683531); B.C. First Nations Health Authority.

10 At least three First Nations communities in Canada have been subject to a drinking water advisory for over 20 years.

11 This includes exposure to a range of diseases like diarrhoea, cholera, hepatitis A, and dysentery, to name a few. World Health Organization drinking-water fact sheet [insert website].

12 Health Canada (2022). Guidelines for Canadian Drinking Water Quality – Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario, p. 1.

13 Bradford et al. (2016).

14 Neegan Burnside (2011). A community water system is classified as low, medium or high risk based on a range of factors including water source, the design, operations and operators of the water system, and the reporting of risk. The report included the participation of 571 of 587 First Nations across Canada (97per cent) and assessed 807 water systems serving 560 First Nations along with 11 First Nations that have individual water supplies.

15 Ibid. p. 15-16.

16 Ekos Research Associates. Perceptions of drinking water quality in First Nations communities and general population. Ottawa, Ontario, Canada: Ekos Research Associates; 2011. The findings of the study note that "[f]ewer than half of First Nations residents rated the quality of their drinking water as good, which is considerably lower than the 65 per cent of residents of other small communities (i.e., the general public) who provided the same positive rating about their own water. In fact, one-quarter of First Nations residents consider their drinking water quality to be poor, whereas a much smaller proportion of residents of other small communities provided the same type of negative rating of their water" (p. iii).

17 Polaris Institute (2008).

18 Don Butler, "*Natives still Unhappy with water; Survey finds big Budget hasn't Helped Quality*," Ottawa Citizen, January 4, 2008.

19 Bradford et al. (2016).

20 As the World Health Organization notes, "*When water comes from improved and more accessible sources, people spend less time and effort physically collecting it, meaning they can be productive in other ways*." World Health Organization drinking-water fact sheet.

21 See Polaris Institute (2008) and NYTimes (2022).

22 E.g., a four-litre bottle of water costs $12 in North Spirit Lake, Ontario, which has been under a drinking water advisory officially since 2019, but on and off since 2001 (NYTimes, 2002).

23 See Polaris Institute (2008) and CBC News (2019).

24 2021 population numbers are not available for all of the communities with

active long-term drinking water advisories.

25 The Pikangikum First Nation in Ontario, which struggled with water advisories for more than a decade before its advisory was lifted in 2018, was noted as having one of the highest suicide rates in the world in the 2000s (Polaries Institute, 2008).

26 Polaris Institute (2008), p. 5. As Bradford et al. (2016) write, "*To Indigenous people, water is more than a commodity or a necessity for physical survival. In some Indigenous worldviews, water is considered a gift from the Creator, the lifeblood of Mother Earth and a spiritual resource that must be respected and kept clean*" (p. 2).

27 "*Chiefs call for Moratorium on new Oilsands Development*," The Canadian Press, February 25, 2008. (*Submission to the United Nations Special Rapporteur on the Human Rights to Safe Drinking Water and Sanitation's Call for Input: Indigenous peoples and people living in rural areas,* Assembly of First Nations, 2021.)

28 Article 25 of the UNDRIP reads: *Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard. (A/RES/ 61/295)*.

29 United Nations General Assembly *A/RES/64/292*

30 To wit, Canada objected to the UNDRIP when the United Nations adopted it in 2007 and then removed its objector status nearly a decade later in 2016.

31 https://www.cbc.ca/news/canada/thunder-bay/neskantaga-water-advisory-anniversary-1.6494213; Indigenous Services Canada website.

32 https://www.cbc.ca/news/canada/ottawa/indigenous-communities-near-ottawa-still-need-clean-water-election-2021-1.6174175; Indigenous Services Canada website.

33 https://www.cbc.ca/news/canada/manitoba/shoal-lake-40-first-nation-drinking-water-advisory-1.6176167

34 May 2023 figures from Indigenous Services Canada.

35 A public inquiry was also held to determine the cause(s) of the water contamination in North Battleford, Saskatchewan that made around 7000 – roughly half the population – ill in 2001. https://thestarphoenix.com/news/saskatchewan/revisiting-north-battlefords-water-crisis-20-years-later

36 Report of the Walkerton Inquiry, Part Two, Chapter 15, p. 486.

37 "When it comes to the safety of drinking water, residents of First Nations communities do not benefit from a level of protection comparable to that of people who live off reserves. This is partly because there are no laws and regulations governing the provision of drinking water in First Nations communities, unlike other communities. INAC and Health Canada attempt to ensure access to safe drinking water in First Nations communities through their policies, administrative guidelines, and funding arrangements with First Nations. This approach does not cover all the elements that would be found in a regulatory regime for drinking water, and it is not implemented consistently." (p. 26). It is worth considering how this well documented situation does not fall afoul of s. 15 of the Canadian *Charter of Rights and Freedoms*, which guarantees "the right to the equal protection and equal benefit of the law without discrimination".

38 Some assessment work had occurred in the 1990s. As noted in the Walkerton Inquiry, "in 1995 Health Canada and the Department of Indian Affairs and Northern Development undertook a survey of drinking water quality on Indian reserves across the country... [finding] one-quarter of the reserves were not up to basic safety standards." Ibid., p. 488. Going back even further, a federal Cabinet memo from 1977 outlined an infrastructure program aimed ""*to provide Indian homes and communities with the physical infrastructure that meets commonly accepted health and safety standards, is similar to that available in neighbouring, non-Indian communities or comparable locations, and is operated and maintained according to sound management practices*" (*REPORT OF THE EXPERT PANEL ON SAFE DRINKING WATER FOR FIRST NATIONS (2006), Vol. 1, p. 22*).

39 Indian and Northern Affairs Canada (2003), *National Assessment of Water and Wastewater Systems in First Nations Communities, Summary Report, p. 10*.

40 Ibid., p. 24.

41 https://www.rcaanc-cirnac.gc.ca/eng/1100100010387/1621706226705

42 Health Canada (2009), *Drinking Water Advisories in First Nations Communities in Canada: A National Overview 1995-2007*

43 *REPORT OF THE EXPERT PANEL ON SAFE DRINKING WATER*

FOR FIRST NATIONS (2006), Vol. 1, p. 22).

44 The cost estimates of INAC's 2001-2002 National Assessment included the important, if disconcerting, caveat: "This estimate is based on on-site visual inspections of water and wastewater systems and may not reflect the actual cost" (p. 24).

45 Indian and Northern Affairs Canada (2011), *National Assessment of First Nations Water and Wastewater Systems National Roll-Up Report*. The report notes that, "[n]ationally, 571 of 587 First Nations (97per cent) participated in the study. Four First Nations chose not to participate, while 12 First Nations have no active infrastructure on reserve lands, in some cases as a result of recent or ongoing land claim settlements." (p. i).

46 Ibid., p. 15-16.

47 Ibid., p. 24; 26.

48 Ibid., p. 28. This total included $783 million in construction costs and just over $78 million for various non-construction costs (training, planning, O&M, etc.) An additional $200-$500 million is identified as potentially necessary pending results of further analysis of 209 groundwater systems.

49 Report of the Commissioner for the Environment and Sustainable Development (2005), p. 26.

50 RESPONSE OF CANADA TO THE LETTER OF REQUEST FROM THE UNITED NATIONS INDEPENDENT EXPERT ON THE PROMOTION OF A DEMOCRATIC AND EQUITABLE INTERNATIONAL ORDER AND THE SPECIAL RAPPORTEUR ON THE HUMAN RIGHT TO SAFE DRINKING WATER AND SANITATION (2013).

51 Budget 2023.

52 May 2023 figures from Indigenous Services Canada.

53 It is important to keep in mind that the Government of Canada's official figures regarding long-term drinking water advisories (those in place for more than one year) only cover "public" water systems that serve at least five households and are funded (in part) by the federal government. Hence, the numbers do not cover the 13per cent of First Nations homes across the country that rely on individual wells (even those that were funded by the federal government (e.g., in Carmacks, Yukon). The 2012 national assessment tested approximately 5per cent of individual wells in each community and found that 36per cent had health concerns, 75per cent had aesthetic concerns (e.g., colour or smell) and 19per cent did not meet fed-

eral Guidelines. More recent estimates suggest 15per cent of homes in First Nations communities receive water by truck delivery(https://globalnews.ca/news/7656235/lack-of-funding-for-piped-water-on-first-nations-in-sask-means-some-on-reserves-cant-drink-from-their-taps/).

54 INAC (2011) p. 6.

55 INAC (2011), National Assessment of First Nations Water and Wastewater Systems National Roll-up (p. 6;9).

56 INAC (2011) p. 6.

57 INAC (2011), pp. 15-16; p. 22.

58 INAC (2011), p. 26.

59 As the study notes, "*Any given advisory can be attributed to more than one reason and therefore the sum of proportions will exceed 100per cent" p. 9.*

60 The sum of these proportions exceeds 100per cent as multiple reasons may be given for a single advisory (see above footnote).

61 The 2011 national assessment identified 158 water systems that used raw water, 135 of which were high risk (p. 24). "*Direct use of raw water is the most common in British Columbia, where it is the case for 40per cent of the systems*"(p. 6).

62 Appearance before the Standing Committee on Public Accounts on OAG Report 3: Access to Safe Drinking Water in First Nations Communities, June 14, 2022 (https://www.sac-isc.gc.ca/eng/1658511608564/1658511670434)

63 Office of the Parliamentary Budget Officer (2021), *Clean Water for First Nations: Is the Government Spending Enough?*, p. 4.

64 The Government of Canada currently provides over $12 million annually for the Circuit Rider Training Program, "a long-term capacity building program that provides training and mentoring services to operators of First Nations drinking water and wastewater systems." (Indigenous Services Canada, Circuit Rider Training Program, https://www.sac-isc.gc.ca/eng/1313424571273/1533818103401).

65 For example, a 2021 survey found that two out of three water operators received wages lower than the median for operators in their territory (https://www.aptnnews.ca/national-news/wages-first-nations-water-systems-saskatchewan/).

66 INAC (2011), p. 26.

67 INAC (2011), p. 27.

68 INAC (2011), p. 19.

69 INAC (2012), p. 19.

70 Government of Canada, *Water and Wastewater Policy and Level of Services Standards* (Corporate Manual System), Appendix A 2.2 (https://www.sac-isc.gc.ca/eng/1312228309105/1533729544122).

71 https://globalnews.ca/news/7656235/lack-of-funding-for-piped-water-on-first-nations-in-sask-means-some-on-reserves-cant-drink-from-their-taps/

72 https://globalnews.ca/news/7656235/lack-of-funding-for-piped-water-on-first-nations-in-sask-means-some-on-reserves-cant-drink-from-their-taps/

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