The State of Community Water Fluoridation across Canada

2022 Report

Prepared by the Office of the Chief Dental Officer of Canada,
Public Health Agency of Canada

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Introduction

Fluoride is a naturally occurring mineral present in nearly all water sources. It is naturally released from rocks into the soil, water, and air. Drinking water that contains fluoride has long been associated with reduced tooth decay. In 1909, two U.S. dentists F. McKay and G. V. Black initiated a 15-year follow-up study in one Colorado town and observed very low caries rates among residents who had access to drinking water with a naturally high level of fluoride. Since then, numerous scientific findings have corroborated the preventive effect of fluoride on tooth decay. By exposing the teeth to a constant low level of fluoride, it helps reduce the cavity-causing effect of foods and bacteria. Fluoride molecules create stronger teeth by hardening tooth enamel, contributing to tooth surface re-mineralization and deterring oral bacteria[1].

Community water fluoridation (CWF) is the process of monitoring and adjusting the fluoride level in drinking water to the optimal level for caries prevention. Water fluoridation has been instrumental in the overall global reduction in dental caries, and many communities around the world have access to CWF. The U.S. Centre for Disease Control considers CWF as one of the ten greatest public health achievements of the 20th century[2].

CWF is the most cost effective and equitable method to deliver fluoride to the population. This population-based preventive intervention contributes to oral health equity by overcoming common social determinants of health including age, education, income, and access to professional dental care. Several reports indicate CWF yields a high return on investment that increases according to community population size, with a per capita annual benefit ranging from $5.49 to $93.19[3] per dollar invested.

Further, CWF is endorsed by major public health bodies around the world, including the World Health Organization, the Canadian Dental Association, and the Public Health

Agency of Canada (PHAC). The Chief Dental Officer of Canada and the Chief Public Health Officer of Canada have co-signed the PHAC Position Statement on CWF.

From a public health perspective, CWF is associated with an approximate 25% reduction in tooth decay in children and adults[4]. The recommended fluoride concentration for caries prevention in Canada (called the optimal level) is 0.7 milligrams/liter (mg/L)[5,6,7] or 0.7 parts per million (ppm).

In 2017, approximately 13.9 million Canadians (38.7%)[8] had access to CWF through water systems, leaving the majority of Canadians not benefitting from the caries protective effect of fluoridated drinking water. In 2022, there are around 14.4 million Canadians (38.8%) who benefit from CWF.

In spite of its robust policy and scientific endorsement, a number of municipalities across Canada have discontinued CWF since 2017 (see Table 4). The rationale for the decision to discontinue CWF varies by jurisdiction and may be influenced by different factors, including community concern over putative health effects[9] and technical/financial aspects thought to be related to the delivery of fluoride. This discontinuation of CWF in some communities and the relative distribution of the population in areas without fluoride treated water systems impacts the percentage of the population which currently has access to fluoridated water. Thus, even though the total population for the country has increased and there are slight increases in CWF estimates for the majority of Provinces and Territories, Table 5 shows that the overall estimate of CWF coverage across Canada has remained fairly steady since 2017.

To document the situation from a national perspective, the Office of the Chief Dental Officer of Canada (OCDOC), working closely with the Federal-Provincial-Territorial Dental Directors Working Group (FPTDDWG) and the Federal Dental Network (FDN), has taken a leadership role to periodically update the data on the state of CWF across Canada. The OCDOC has carried out this exercise in 2007, 2012, 2017 and 2022. In addition to

estimating the population's access to optimal levels of fluoride through a community water supply, the 2017 round also included data on population access to well water supplies that contained naturally occurring fluoride and estimates of access to fluoridated drinking water in Indigenous communities. The additional element provided in this 2022 report is the status of National Defence Canadian Forces Bases water fluoridation coverage, 2017.

Methodological remarks

Members of the FPTDDWG provided data on drinking water fluoridation status for their respective Province/Territory. They gathered this information from their respective Provincial/Territorial environment or health ministries.

Provincial/Territorial estimates for total CWF coverage were calculated using the ratio of the population receiving CWF to the total population. In most cases, the data provided was from 2021. Therefore, Provincial/Territorial total populations were derived from the Statistics Canada 2021 census data[10]. The CWF coverage data was provided, as mentioned, by Provincial/Territorial environment or health ministries through their FPTDDWG member, as well as by the Department of National Defence representative of the FDN. One of the limitations of this report is that discrepancies exist in the timing of the data collection (anywhere between 2017 and 2022) across the Provinces/Territories and Canadian Armed Forces (CAF) Bases.

Given the difference in reporting systems across jurisdictions, variations in the quality of the data and in the level of detail and completeness of the information were also observed. While some Provinces/Territories were able to provide information on all communities, including data for both fluoride treated water systems and wells with naturally occurring fluoride, other jurisdictions were only able to provide information on communities with CWF systems. Further, several Provinces/Territories noted a variety of difficulties with obtaining CWF data as a result of resources having been diverted to support Canada’s response to the COVID-19 pandemic.

Data collection related to well water supplies with naturally occurring fluoride was also challenging: data were incomplete for some Provinces/Territories because they have not historically collected this type of information.

Estimating the Provincial/Territorial population receiving well water with naturally occurring fluoride added another layer of complexity. Many wells are located on private property and thus are not within the municipal, P/T or federal government's jurisdiction to monitor. This situation was particularly true for remote and rural communities.

The level of naturally occurring fluoride in well water is often unknown, making it challenging to determine whether residents are benefiting from exposure at the optimal fluoride level through this source. Moreover, some communities were served by multiple well water sources at different periods of time, which may have resulted in some communities receiving intermittent fluoridated water.

The current status of CWF in Indigenous communities across the Provinces was obtained from Indigenous Services Canada, First Nations and Inuit Health Branch, Environmental Public Health Division (2022 data). Territorial Indigenous community population data were obtained from the respective FPTDDWG member and Statistics Canada, 2021 Census of Population data[11].

Results

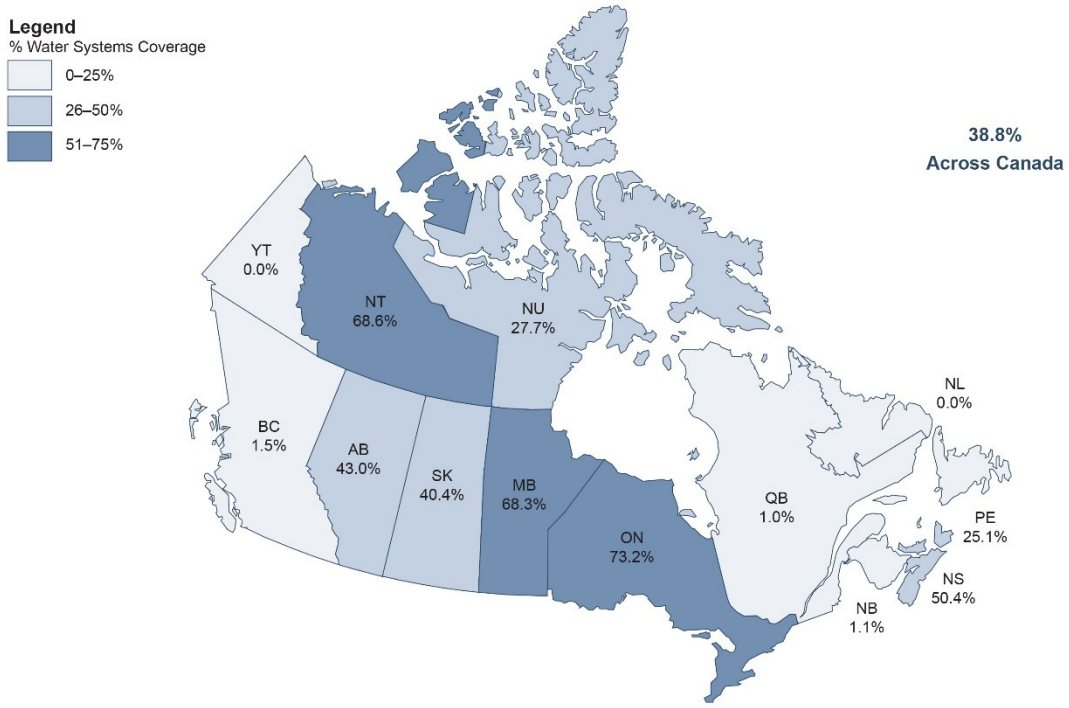
This report includes seven tables and one figure:

- Table 1 presents Provincial and Territorial estimates for community water fluoridation systems coverage, 2022.
- Figure 1 presents Provincial and Territorial estimates of fluoridated water systems coverage across Canada.
- Table 2 presents Provincial and Territorial estimates for coverage of wells with naturally occurring fluoride, 2022.
- Table 3 presents Provincial and Territorial estimates for total community water fluoridation systems coverage, 2022.
- Table 4 compares changes in community water fluoridation status between 2017 and 2022.
- Table 5 presents changes in Provincial and Territorial estimates for community water fluoridation systems coverage for 2007, 2012, 2017 and 2022.
- Table 6a presents estimates of CWF systems coverage in Indigenous communities across the Provinces, 2022.
- Table 6b presents estimates of CWF systems coverage in Indigenous communities across the Territories, 2022.
- Table 7 presents the status of National Defence Canadian Forces Base (CFB) water fluoridation coverage, 2017.

Table 1: Provincial and Territorial estimates for community water fluoridation systems coverage, 2022

Province/Territory	Total Population[12]	Population with fluoridated systems	Population without fluoridated systems	Percent with fluoridated systems	Percent without fluoridated systems
British Columbia	5,000,879	75,375	4,925,504	1.5%	98.5%
Alberta	4,262,635	1,833,354	2,429,281	43.0%	57.0%
Saskatchewan	1,132,505	457,086	675,419	40.4%	59.6%
Manitoba	1,342,153	917,196	424,957	68.3%	31.7%
Ontario	14,223,942	10,415,380	3,808,562	73.2%	26.8%
Quebec	8,501,833	87,349	8,414,484	1.0%	99.0%
New Brunswick	775,610	8,585	767,025	1.1%	98.9%
Nova Scotia	969,383	488,160	481,223	50.4%	49.6%
Prince Edward Island	154,331	38,809	115,522	25.1%	74.9%
Newfoundland and Labrador	510,550	0	510,550	0.0%	100.0%
Nunavut	36,858	10,195	26,663	27.7%	72.3%
Northwest Territories	41,070	28,179	12,891	68.6%	31.4%
Yukon	40,232	0	40,232	0.0%	100.0%
Canada	**36,991,981**	**14,359,668**	**22,632,313**	**38.8%**	**61.2%**

Figure 1: Fluoridated Water Systems Coverage in Canada, 2022



This mapping of Provincial and Territorial estimates for fluoridated water systems coverage across Canada (2022) draws on data presented in Table 1. The map does not include the estimates for coverage of wells because these naturally occurring fluoride levels are often unknown. As such, the focus is on fluoride treated water systems from which people benefit from the **optimal level of fluoride to prevent tooth decay**.

Table 2: Provincial and Territorial estimates for coverage of wells with naturally occurring fluoride, 2022

Province/Territory	Total Population[13]	Population with naturally occurring fluoride in well water[14]	Population without naturally occurring fluoride in well water	Percent with naturally occurring fluoride in well water	Percent without naturally occurring fluoride in well water
British Columbia	5,000,879	Unknown	Unknown	Unknown	Unknown
Alberta	4,262,635	40,798	4,221,837	1.0%	99.0%
Saskatchewan	1,132,505	6,506	1,125,999	0.6%	99.4%
Manitoba	1,342,153	Unknown	Unknown	Unknown	Unknown
Ontario	14,223,942	203,935	14,020,007	1.4%	98.6%
Quebec	8,501,833	Unknown	Unknown	Unknown	Unknown
New Brunswick	775,610	64,472	711,138	8.3%	91.7%
Nova Scotia	969,383	Unknown	Unknown	Unknown	Unknown
Prince Edward Island	154,331	0	154,331	0.0%	100.0%
Newfoundland and Labrador	510,550	856	509,694	0.2%	99.8%
Nunavut	36,858	Unknown	Unknown	Unknown	Unknown
Northwest Territories	41,070	1,178	39,892	2.9%	97.1%
Yukon	40,232	40,232	0	100.0%	0.0%

Table 3: Provincial and Territorial estimates for total community water fluoridation systems coverage, 2022

Province/Territory	Total Population[15]	Population with fluoridated water	Population without fluoridated water	Percent with fluoridated water	Percent without fluoridated water
British Columbia	5,000,879	75,375	4,925,504	1.5%	98.5%
Alberta	4,262,635	1,874,152	2,388,483	44.0%	56.0%
Saskatchewan	1,132,505	463,592	668,913	40.9%	59.1%
Manitoba	1,342,153	917,196	424,957	68.3%	31.7%
Ontario	14,223,942	10,619,315	3,604,627	74.7%	25.3%
Quebec	8,501,833	87,349	8,414,484	1.0%	99.0%
New Brunswick	775,610	73,057	702,553	9.4%	90.6%
Nova Scotia	969,383	488,160	481,223	50.4%	49.6%
Prince Edward Island	154,331	38,809	115,522	25.1%	74.9%
Newfoundland and Labrador	510,550	856	509,694	0.2%	99.8%
Nunavut	36,858	10,195	26,663	27.7%	72.3%
Northwest Territories	41,070	29,357	11,713	71.5%	28.5%
Yukon	40,232	40,232	0	100.0%	0.0%
Canada	**36,991,981**	**14,717,645**	**22,274,336**	**39.8%**	**60.2%**

Table 4: Comparing changes in community water fluoridation status between 2017 and 2022

Province/Territory	Explanation for changes[16] since 2017 CWF Report
British Columbia	No change since 2017.
Alberta	At the time of writing, there was no change in CWF status since 2017. However, Calgary is expected to reinstate CWF near the end of 2022.
Saskatchewan	Since 2017, 10 new communities (Alvena, Carnduff, Duval, Macoun, McTaggart, Outlook, Shields, St. Gregor, Thode and Tisdale) started CWF, while seven communities (Baildon Colony, Beatty, Caronport, Elstow, Moose Jaw, Mortlach, and Naicam) discontinued it.
Manitoba	Hartney (2018), Rivers (2018), Benito (2019), and Treherne (2021) discontinued fluoridation.
Ontario	In January 2022, Windsor, Tecumseh and LaSalle each re-initiated community water fluoridation for the first time since 2013. Population growth may account for some/all of the change in estimated population with CWF. The 2021 estimate for naturally occurring fluoride was calculated by including the population of drinking water systems where the treated fluoride data was above 0.5 ug/L. While the threshold remains the same, the difference from 2017 to 2022 is attributed to the new methodology used to estimate coverage for naturally occurring fluoride.
Quebec	Châteauguay and St-Romuald discontinued fluoridation in 2019 and 2020, respectively.
New Brunswick	No change since 2017.
Nova Scotia	Unknown.
Prince Edward Island	Overall increase in the population of PEI and the number of people who live in Charlottetown - the only fluoridated population centre in PEI.
Newfoundland and Labrador	No municipal fluoridation programs are currently in place.

Table 4: Comparing changes in community water fluoridation status between 2017 and 2022

Province/Territory	Explanation for changes[16] since 2017 CWF Report
Nunavut	Rankin Inlet temporarily discontinued fluoridation in 2017 due to purported workers' safety issues in 2016. However, community water fluoridation has not been reinstated since that time.
Northwest Territories	CWF did not expand to any new communities in the NWT since 2017, and no communities dropped CWF. The community of Wrigley upgraded from using well water (which had naturally occurring, but not optimal, levels) but their new system does not add CWF. Any changes in numbers are due to population changes in the NWT.
Yukon	Total population reported as having access to naturally fluoridated wells. No change since 2017.

Table 5: Changes in Provincial and Territorial estimates for community water fluoridation systems coverage, 2007, 2012, 2017, and 2022

Province/Territory[17]	2007	2012	2017	2022
British Columbia	3.9%	2.7%	1.2%	1.5%
Alberta	74.6%	43.3%	42.4%	43.0%
Saskatchewan	31.7%	36.7%	39.6%	40.4%
Manitoba	73.2%	75.3%	69.0%	68.3%
Ontario	70.3%	67.3%	71.1%	73.2%
Quebec	6.9%	3.4%	2.5%	1.0%
New Brunswick	19.1%	10.7%	1.2%	1.1%
Nova Scotia	44.8%	49.6%	46.9%	50.4%
Prince Edward Island	23.4%	24.7%	24.2%	25.1%
Newfoundland and Labrador	3.5%	1.5%	1.5%	0.0%
Nunavut	7.1%	35.7%	28.8%	27.7%
Northwest Territories	53.8%	61.1%	64.9%	68.6%
Yukon	0.0%	0.0%	0.0%	0.0%
Canada	**42.6%**	**37.4%**	**38.7%**	**38.8%**

Table 6a: Estimates for CWF systems coverage of Indigenous communities across the Provinces, 2022

Province	Indigenous communities with CWF: Population	Population of Indigenous communities[18]	Percent with fluoridated systems
British Columbia	(none)	50,405	0.0%
Alberta	Enoch Cree Nation; 1,825	42,285	11.1%
	Paul First Nation: 1,001		
	Alexander: 1,082		
	Alexis: 770		
Saskatchewan	Muskoday First Nation: 700	53,900	2.5%
	One Arrow First Nation: 671		
Manitoba	Dakota Tipi: 226	61,100	1.3%
	Roseau River: 564		
Ontario	Aamjiwnaang: 648	48,960	1.3%
Quebec	(none)	37,360	0.0%
New Brunswick	Oromocto: 295	7,725	3.8%
Nova Scotia	Millbrook: 921	9,665	20.9%
	Membertou: 1,103		
Prince Edward Island	(none)	505	0.0%
Newfoundland and Labrador	(none)	2,600	0.0%

The population data provided for Table 6a may overestimate the reality for some Indigenous communities. For example, some homes within Indigenous communities with fluoridated water systems may be on private wells. Alternatively, several communities may have Municipal Transfer Service Agreements, but the population served by these fluoridated water systems may be smaller than the total population of that Indigenous community. The First Nations of Sipekne'katik, NS and Mushuau Innu, NL are both served by Community Water Systems which are owned, operated and located within each of these communities; their fluoride sources are both from groundwater and are naturally occurring. As such, neither of these Indigenous communities have been included in Table 6a, which presents estimates for fluoride treated water systems coverage in Indigenous communities across the Provinces.

See Table 6b for estimates of access to fluoride treated water systems for Indigenous communities within Nunavut, Northwest Territories and Yukon.

Table 6b: Estimates of CWF systems coverage of Indigenous communities across the Territories, 2022

Territory	Indigenous communities with CWF: Population	Population of Indigenous communities[19] (2022)	Percent with fluoridated systems
Nunavut	Iqaluit: 7,429	31,390	32.8%
	Arviat: 2,864		
Northwest Territories[20]	Yellowknife: 5,133	20,035	42.7%
	Inuvik: 2,077		
	Fort Smith: 1,349		
Yukon	(none)	8,810	0.0%

As Nunavut, Northwest Territories and Yukon do not have “Reserves” per se, these territories are not included in Table 6a. We consequently provide estimates for fluoride treated water system coverage of Indigenous communities within each of these three jurisdictions as a ratio of the population of Indigenous communities with fluoride treated water systems over the total Indigenous population of each territory (Table 6b).

Table 7: Status of National Defence Canadian Forces Base (CFB) water fluoridation coverage, 2017

CAF Base Name (Total of 31 bases)	Naturally occurring fluoride	Fluoride treated water	Unknown Fluoride Level
3 Wing Bagotville	Yes	N/A	N/A
16 Wing/CFB Borden	Yes	N/A	N/A
19 Wing Comox	Yes	N/A	N/A
4 Wing Cold Lake	N/A	Yes	N/A
CFB Edmonton	N/A	Yes	N/A
CFB Esquimalt	N/A	N/A	Yes
CFB Gagetown	N/A	Yes	N/A
9 Wing Gander	N/A	N/A	Yes
5 Wing Goose Bay	N/A	Yes	N/A
14 Wing Greenwood	N/A	N/A	Yes
CFB Halifax	N/A	Yes	N/A
1 Wing/CFB Kingston	N/A	N/A	Yes
CFB Leitrim	N/A	Yes	N/A
CFB Montreal	N/A	N/A	Yes
15 Wing Moose Jaw	N/A	Yes	N/A
NDHQ	N/A	Yes	N/A
22 Wing North Bay	N/A	N/A	Yes
CFB Petawawa	N/A	Yes	N/A
CFB Shilo	N/A	Yes	N/A

Table 7: Status of National Defence Canadian Forces Base (CFB) water fluoridation coverage, 2017

CAF Base Name (Total of 31 bases)	Naturally occurring fluoride	Fluoride treated water	Unknown Fluoride Level
CFB Suffield	Yes	N/A	N/A
CFS St John's	N/A	N/A	Yes
8 Wing Trenton	N/A	Yes	N/A
CFB Valcartier	N/A	N/A	Yes
CFB Wainwright	N/A	N/A	Yes
1 CAD Winnipeg	N/A	Yes	N/A
CFNAHQ Yellowknife	N/A	Yes	N/A
CFS Alert	N/A	N/A	Yes
Aldershot LFAATC	N/A	Yes	N/A
Meaford LFCATC	N/A	N/A	Yes
CFB Toronto	N/A	Yes	N/A
CFB Saint Jean	N/A	N/A	Yes

While the population of CAF members assigned to each base would help provide estimates of access to fluoridated water across all CAF bases, these data points would be largely overestimated because the majority of CAF members live off base and in the surrounding communities. As such, the fluoridation status (fluoride treated water, naturally occurring fluoride, unknown fluoride level) of each CAF base across Canada is provided in Table 7. This fluoridation status is based on CAF's review in 2017 of drinking water sources for each base, including the existence/use of water treatment plants and whether or not there was fluoride testing/monitoring.

[1] MMWR Recomm Rep. 2001 Aug 17;50(RR-14):1-42. https://pubmed.ncbi.nlm.nih.gov/11521913/

[2] Public Health Rep. 2015 Jul-Aug;130(4):296-98.
https://www.ncbi.nlm.nih.gov/pubmed/26346489

[3] Ran, T. & Chattopadhyay, S.K & CPSTF (2015). Economic Evaluation of Community Water Fluoridation. A Community Guide Systematic Review. Am J Prev Med 2015. In press; Tchouaket, E. & al (2013). The economic value of Quebec's water fluoridation program. Journal of Public Health. June 2013; 21 (6): 523-533; CDC (2013). Costs Saving of Community Water Fluoridation. http://www.cdc.gov/fluoridation/factsheets/cost.htm; Griffin, S O, Jones, K and Tomar, S L. (2001). An economic evaluation of community water fluoridation. J Public Health Dent 2001; 61(2): 78-86.

[4] CDC (2015) Community Water Fluoridation. http://www.cdc.gov/fluoridation/; Tchouaket, E. & al (2013). The economic value of Quebec's water fluoridation. Journal of Public Health. June 2013; 21 (6): 523-533; Rugg-Gunn. AJ & Do,L. (2012). Effectiveness of water fluoridation in caries prevention. Community Dent Oral Epidemiol. http://www.ncbi.nlm.nih.gov/pubmed/22998306. 2012 Oct; 40 suppl. 2:55-64.; Griffin SO, Regnier E, Griffin PM, Huntley V. (2007). Effectiveness of fluoride in preventing caries in adults. J Dent Res. 2007;86(5):410-415

[5] Public Health Rep. 2015 Jul-Aug;130(4):318-31.
https://www.ncbi.nlm.nih.gov/pubmed/26346489

[6] Health Canada (2011) Guidelines for Canadian drinking water quality: Guideline technical document - Fluoride. http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2011-fluoride-fluorure/index-eng.php

[7] Health Canada (2007) Findings and recommendations of the fluoride expert panel (January 2007). http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2008-fluoride-fluorure/index-eng.php

[8] PHAC, the State of Community Water Fluoridation across Canada, 2017 report

[9] Decades of research and studies performed by recognized institutions have found that, in Canada, documented risks are limited to dental fluorosis. This condition is caused by exposure to too much fluoride during tooth development (i.e. under 6 years of age). The most common form of dental fluorosis is very mild and can change the appearance of tooth enamel, commonly resulting in small white spots on teeth. This is largely unnoticeable and not considered detrimental to the overall appearance or function of the teeth.

[10] With three exceptions: Saskatchewan, as the data provided is from 2019 Covered Population data; Alberta, as the data provided is from Alberta Municipal Affairs: the majority of which came from 2019 Census Population data, and a few municipalities from 2017 or 2018 census data; and Northwest Territories, as the data provided is from NT 2021 population estimates, which has detailed population breakdowns for communities.

[11] It should be noted that the situation is different in Nunavut, Yukon and the Northwest Territories where there are no Indigenous “Reserves” per se.

[12] Source: Statistics Canada, 2021 Census Data - with three exceptions: Saskatchewan, as the data provided is from 2019 Covered Population data; Alberta, as the data provided is from Alberta Municipal Affairs: the majority of which came from 2019 Census Population data, and a few municipalities from 2017 or 2018 census data; and

Northwest Territories, as the data provided is from NT 2021 population estimates, which has detailed population breakdowns for communities.

[13] Source: Statistics Canada, 2021 Census Data - with three exceptions: Saskatchewan, as the data provided is from 2019 Covered Population data; Alberta, as the data provided is from Alberta Municipal Affairs: the majority of which came from 2019 Census Population data, and a few municipalities from 2017 or 2018 census data; and Northwest Territories, as the data provided is from NWT 2021 population estimates, which has detailed population breakdowns for communities.

[14] Most Provincial and Territorial authorities were unable to estimate and/or provide detailed data on the levels of naturally occurring fluoride in well water.

[15] Source: Statistics Canada, 2021 Census Data - with three exceptions: Saskatchewan, as the data provided is from 2019 Covered Population data; Alberta, as the data provided is from Alberta Municipal Affairs: the majority of which came from 2019 Census Population data, and a few municipalities from 2017 or 2018 census data; and Northwest Territories, as the data provided is from NWT 2021 population estimates, which has detailed population breakdowns for communities.

[16] The dates entered in parentheses beside the name of different municipalities indicate the year when CWF was discontinued, started or reintroduced in these locations.

[17] Despite the overall net increase of only one community instating CWF since 2017 (as per Table 4), we see increases in the % of people with access to CWF in British Columbia, Alberta, Saskatchewan, Ontario, Nova Scotia, Prince Edward Island and Northwest Territories between 2017 and 2022 (Table 5). These changes could be due to population growth in specific areas with fluoridated water, the number of people who have moved into jurisdictions that have municipal systems that fluoridate the drinking water, and/or different data collection or calculation methods used since 2017.

[18] Source: Statistics Canada. Table 98-10-0267-01 Membership in a First Nation or Indian band by residence on or off reserve: Canada, provinces and territories.
https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810026701

[19] Statistics Canada. 2022. (table). *Census Profile*. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released October 26, 2022.
https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed November 1, 2022).

[20] 2021 Territorial population estimates were used for Northwest Territories, which have detailed breakdowns for the Indigenous communities with CWF (Yellowknife, Inuvik and Fort Smith).