ANNUAL REPORT OF ACTIVITIES
UNDER THE *DRINKING WATER PROTECTION ACT* IN BC

FOR FISCAL YEAR 2023/24

BRITISH COLUMBIA | Office of the Provincial Health Officer

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Ministry of Water, Land and Resource Stewardship
Victoria, BC
lək̓ʷəŋən Territory

December 2025

The Honourable Randene Neill
Minister of Water, Land and Resource Stewardship

Dear Minister:

Under section 4.1 of the *Drinking Water Protection Act*, the Provincial Health Officer must prepare and deliver to the Minister an annual report respecting activities under the Act. I have the honour of submitting to you the Provincial Health Officer's *Annual Report of Activities Under the Drinking Water Protection Act in BC for Fiscal Year 2023/24*.

Sincerely,

Shannon Waters
MD, MHSc, FRCPC
Deputy Provincial Health Officer
Planetary and Water Health

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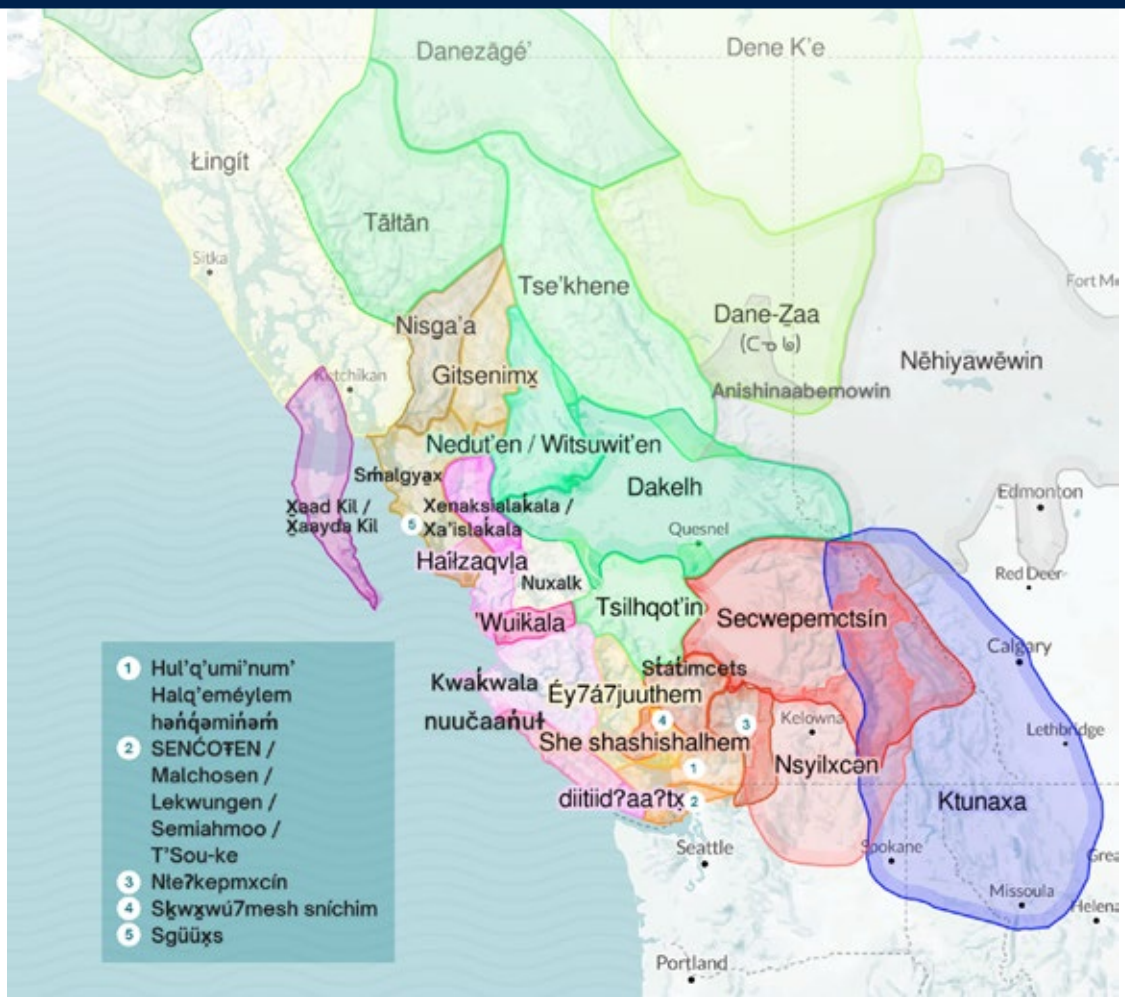
Acknowledgements

Land Acknowledgement

We acknowledge with great respect the territories of the lək̓ʷəŋən peoples on which the Office of the Provincial Health Officer stands, and the Songhees, Esquimalt (Xwsepsum), and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day. We recognize and express our gratitude for the medicines within these territories and within the First Nations territories that stretch across every inch of the province of British Columbia.

There are 34 First Nations language groups in BC, whose territories reach every part of the province as highlighted in Figure A. To learn more about the First Peoples' Map of BC, visit https://maps.fpcc.ca/.

Figure A: First Peoples' Map of BC



Source: © First Peoples' Cultural Council.

Rights Acknowledgement

We acknowledge with respect the inherent rights of the First Nations whose ancestral territories cover every inch of the province now known as British Columbia, including their unextinguished land rights and rights to self-determination, health, and wellness within these territories. Laws and governance systems rooted in the land have upheld the sovereignty of these diverse Nations for thousands of years. The rights and responsibilities of First Nations to their ancestral territories have never been ceded or surrendered, and are upheld in provincial, national, and international law.

We also recognize that many Indigenous Peoples (First Nations, Métis, and Inuit) from elsewhere in what is now known as Canada and beyond also call these lands and waters home, and they too have inherent Indigenous rights to self-determination, health, and wellness. This includes Métis Nation British Columbia and its Chartered Communities across BC, as well as those whose ancestral territories are outside of BC.

Report Acknowledgements

The Provincial Health Officer would like to thank the following organizations for lending their expertise and assistance to the Provincial Health Officer's team during the development of this report (presented in alphabetical order):

Environmental Operators Certification Program

Fraser Health

Interior Health

Island Health

Ministry of Health: Health Protection Branch

Northern Health

Provincial Health Services Authority

- BC Centre for Disease Control Public Health Laboratory
- Enhanced Water Quality Assurance Program

Vancouver Coastal Health

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2023/24 Report Highlights

The Provincial Health Officer (PHO) is the senior public health official for BC and holds monitoring, oversight, and reporting responsibilities under the *Drinking Water Protection Act* (DWPA). Section 4.1 of the DWPA requires the PHO to prepare a report on the activities conducted under the Act for the past year. This report presents metrics for permitting, inspection, monitoring, and enforcement activities for the 2023/24 fiscal year.

Basic Water System Overview

- There were 5,209 drinking water systems permitted under the DWPA in BC—a slight decrease from the previous fiscal year when 5,240 were reported. While many water systems in the province are small (93 per cent), most people are served by large local government water systems.
- Sixty-eight per cent of BC's regulated water supply systems are standalone facilities, 97 per cent of which are small water systems. The most common type of standalone facilities are recreational facilities, followed by food premises, then industrial or commercial facilities. Of the 1,675 community water systems, 34 per cent are governed under the *Local Government Act*, 11 per cent are incorporated as a utility or water users' community by the Comptroller of Water Rights, and 55 per cent are considered independent community water systems.
- Most local government water systems get their water from multiple groundwater wells (30 per cent) or surface water (25 per cent). Non-local-government water systems and standalone water systems are more likely to rely on groundwater and get water from a single well (59 per cent and 67 per cent, respectively). Close to 50 per cent of all system types (local government, non-local-government, and standalone systems) were assessed for groundwater at risk of containing pathogens (GARP).

Publications

- The Ministry of Health (HLTH) released the *Guide for Communicating with Water Users* (June 2023), a revised *Guide to Emergency Response and Contingency Plans for Water Supply Systems* (June 2023), and an updated version of the *Drinking Water Officers' Guide* (February 2024).

Compliance

- At least 90 per cent of large water systems in most regional health authorities had an approved emergency response and contingency plan (ERCP). Fraser Health also reported that all small water systems in its jurisdiction had an accepted ERCP. The compliance rates for small water systems in other health authorities were lower, ranging from 25 to 87 per cent.
- In three health authorities, 95 per cent or more of systems serving more than 500 people per day in their jurisdiction had at least one operator certified to the appropriate classification level. Overall, compliance rates are improving. However, systems in the Interior Health and Northern Health jurisdictions continue to show lower compliance, potentially due to challenges

in recruiting and retaining certified operators for mid-sized, rural, and remote systems. The number of water system operators not in good standing with the Environmental Operators Certification Program (EOCP) also increased this year, mainly among Level I and Level II operators.

- The number of systems monitoring chemical water quality in accordance with their monitoring plan increased by 10 per cent over 2022/23. In the four health authorities reporting, at least 76 per cent of large community water systems were compliant. In most regional health authorities, 60 per cent or more of small community water systems were monitoring chemical water quality in accordance with their monitoring plan.
- The percentage of water systems receiving an inspection in 2023/24 increased in the Northern Health and Interior Health jurisdictions after a drastic drop in inspections emerged in 2020/21. In all regional health authorities, the number of water systems that met inspection frequency targets increased but has yet to return to pre-pandemic levels.
- No tickets were issued and only one order was given to a standalone facility in the Interior Health region. Drinking water officials use a progressive enforcement approach with water suppliers and communities to gain compliance with the DWPA, especially as infrastructure improvements are costly and take time to resolve.
- The PHO has certain powers under the Act based on which the Office of the Provincial Health Officer (OPHO) may take action, including reviewing certain decisions made by drinking water officers, making a report to the Minister on problems relating to government actions as they affect drinking water, and making a recommendation for a drinking water protection plan for a designated area. No reports or recommendations were made by the OPHO under these provisions during this reporting period.

Sampling and Exceedances

- The percentage of community drinking water systems that met the sampling frequency requirements at least 90 per cent of the time increased for all regional health authorities. Large water systems continued to show higher compliance rates than small water systems. In the Island Health, Interior Health, and Fraser Health jurisdictions, at least 76 per cent of large water systems met this requirement.
- Water systems receiving subsidized water sampling submitted 92,532 water samples to the BC Centre for Disease Control Public Health Laboratory and three subcontracted labs. Of the samples tested, less than 1 per cent had positive *E. coli* reports.
- The number of water systems exceeding the maximum acceptable concentration (MAC) for manganese at the source and in water delivered at the tap increased. The rise in manganese exceedances can be attributed to additional monitoring and a change in the MAC for manganese in 2019. This trend has contributed to the growing number of water quality advisories since 2019.

Advisories

- There were 862 drinking water advisories in place across the province on March 31, 2024. While the total number of advisories has not increased since March 31, 2023, that number is still high, impacting 17 per cent of water systems. Boil water notices accounted for 80 per cent of advisories.
- Ninety-seven per cent of all advisories recorded on March 31, 2024, applied to small water systems. Evaluating the length of time those advisories have been in place shows that the percentage of advisories among small water systems increases along with the time duration. Small water systems account for 98 per cent of advisories in place for five to ten years and for 99 per cent of advisories in place for a decade or more.
- Interior Health continues to have the greatest number of advisories in its jurisdiction compared to other regions, as it has the largest number of small water systems.

Workforce and Operational Challenges

- Workforce shortages within health protection programs continued to be a challenge for some regional health authorities. The number of full-time vacancies remained high, especially with Northern Health, which accounted for 12 of 15 vacant positions in the province. The number of water systems and the number of funded full-time-equivalent positions at the regional health authorities working in drinking water were largely unchanged from 2023, with approximately 152 water systems per environmental health officer and 672 water systems per public health engineer.
- Small water systems continued to face operational and management challenges, and they often lacked the infrastructure, financial resources, and resilience needed to adapt to climate change. These vulnerabilities highlight the need for targeted support and long-term planning for these systems.
- HLTH continues to make progress on the development of a provincial environmental health data system to replace the various administrative databases used for drinking water monitoring and inspection data at the regional health authorities. Once complete, this data system will improve the accessibility and reliability of data for reporting and evaluation purposes. Likewise, the Ministry of Water, Land and Resource Stewardship is making improvements to available source water data that may be used to assess risk through the development of a spatial source water dataset.

This report provides data on activities conducted under the DWPA and illustrates the ongoing challenges related to data collection, staffing, inspections, advisories, climate change, and small water systems that have been documented in previous OPHO reports. It reinforces the need for urgent action and continued work on the recommendations outlined in the most recent broad progress report, *Clean, Safe, and Reliable Drinking Water: An Update on Drinking Water Protection in BC, 2017/18–2021/22*, notably a renewal of the 2002 *Action Plan for Safe Drinking Water in British Columbia* with the addition of a strategy to address small water system challenges, climate change preparedness for water suppliers, and reconciliation with Indigenous Peoples.

1. Introduction

For generations upon generations, First Nations peoples (in what is now called British Columbia) have had knowledge, laws, and practices that protect their life-giving relationships with water. Since its enactment in 2003, the *Drinking Water Protection Act* (DWPA) has served as the primary provincial legislation for safeguarding drinking water. The Ministry of Health (HLTH) is responsible for administering the Act, while regional health authorities are tasked with its implementation and enforcement.[1]

1.1 Upholding the DWPA in BC

Although the DWPA is central to regulating water suppliers and ensuring water quality, it is one of several pieces of legislation that contribute to the broader framework of drinking water protection in the province. Aligning the DWPA with the *Declaration on the Rights of Indigenous Peoples Act* (DRIPA), passed in 2019, represents a critical future step toward recognizing these longstanding stewardship practices and enhancing water protection across all communities. The OPHO, in its most recent progress report, *Clean, Safe, and Reliable Drinking Water: An Update on Drinking Water Protection in BC, 2017/18–2021/22,* called for HLTH to lead a review of the DWPA to identify opportunities to improve alignment of the Act with the government's commitment to DRIPA.[2]

The Provincial Health Officer (PHO), as BC's senior public health official, plays a key role in water system monitoring, oversight, and reporting under the DWPA. Section 4.1 of the Act mandates that the PHO submit an annual report summarizing activities conducted under the legislation.[1] As water supply systems on reserve lands are not regulated by the Province under the DWPA, data on these systems are not included in this report.[a]

In addition to these annual updates, the OPHO will continue to release broader progress reports—similar to the *Clean, Safe, and Reliable Drinking Water: An Update on Drinking Water Protection in BC, 2017/18–2021/22*—which will provide a follow-up to that report and include new and updated recommendations to strengthen drinking water protection.[2] Data shared by the First Nations Health Authority and Indigenous Services Canada on First Nations water supply systems in BC will continue to be included in these broader progress reports.

[a] For more information on the First Nations Health Authority environmental health services, visit https://www.fnha.ca/what-we-do/environmental-health.

This document is the second report submitted to the Minister of Water, Land and Resource Stewardship using a new annual reporting framework. In addition to reporting under the metrics used last year, this report includes information on

- The number and types of community water systems.
- The number and types of standalone water systems.
- The number and types of water sources used by water suppliers.
- The number of water systems with groundwater at risk of containing pathogens (GARP).
- The number of water samples rejected by reason and month.

1.2 Drinking Water Data in BC

Designated environmental health officers within each regional health authority in BC collect and review water system and compliance data. In some regions, information management specialists provide additional support. These individuals spend considerable time extracting the required data from their administrative environmental health protection databases.[b,3,4] If the information is not available within the databases, they review individual water system files or consult the environmental health officer responsible for the system. While these staff at the regional health authorities endeavour to provide complete and accurate data to meet the PHO's reporting responsibilities under the DWPA, the limitations of how data is collected, stored, and retrieved from the different databases sometimes result in data gaps and inaccuracies in what is provided to the OPHO.

In order to meet the DWPA reporting requirement, the OPHO annually requests data from the environmental health protection programs within the five regional health authorities.[c] The request includes data on water supply systems and inspection, monitoring, and compliance activities covering the past fiscal year (April 1 through March 31). Annual counts are provided using data as of March 31, the last day of each fiscal year. The OPHO also requests data for the same period from the BC Centre for Disease Control Public Health Laboratory pertaining to subsidized water testing conducted under the DWPA, as well as data on operator certification and water system facility classification from the Environmental Operators Certification Program.

Once the data are received by the OPHO, the Provincial Drinking Water Officer and drinking water information analysts consolidate and organize the information and review any identified gaps or inconsistencies with the individuals who provided the data. Where data gaps or inconsistencies cannot be resolved, the report development team flags the limitations within the notes of individual tables and figures presenting the data. When

[b] The regional health authority environmental health protection programs use two different administrative databases to capture and retrieve water system inspection, monitoring, and compliance data: Hedgerow Regulatory Compliance Management Platform ("Hedgehog") and HS GovTech ("HealthSpace"). Interior Health uses Hedgehog for its drinking water inspection program, whereas Island Health, Northern Health, Vancouver Coastal Health, and Fraser Health each use different versions of the HealthSpace platform for drinking water, some of which have reached their end of life and are no longer supported by the vendor.

[c] BC has five regional health authorities that deliver health services to the populations within their respective geographical regions: Island Health, Northern Health, Vancouver Coastal Health, Interior Health, and Fraser Health.

shifts in trends appear within the compiled data, the report development team consults with the drinking water program leads for more information to explore the possible drivers behind them.

Efforts to improve drinking water data collection and data management continue. HLTH, in collaboration with the OPHO, the Provincial Health Services Authority, and regional health authorities, is implementing a drinking water module within a new provincial environmental health information system called the Public Health Operations and Compliance System (PHOCS) to eventually replace the administrative health protection databases currently in use at the five regional health authorities. March 2026 is the target release date for the drinking water module, which will be implemented first by Northern Health as its current version of HealthSpace has reached its end of life.

1.3 Organization of This Report

This report is intended for individuals responsible for overseeing and operating drinking water supply systems, as well as for members of the public interested in drinking water protection. It provides an annual summary of key activities, including permitting, system classification, operator certification, inspections, water quality monitoring, public notifications, and enforcement actions. Specifically, section 2 provides an overview of water systems in BC, their sources, and improvements to source water data. Section 3 outlines the guidelines and permits that govern drinking water operators, and section 4 details the operations and management data for 2023/24. Section 5 reports on water quality compliance monitoring and the structure of testing practices. Section 6 addresses public notifications about drinking water quality, and section 7 details regional health authority program resources. This section also explains the ways drinking water concerns are resolved in collaboration with system operators and the way enforcement occurs when needed. Section 8 wraps up the report and is followed by appendices with additional data about water system types and more.

2. Summary of Water Systems in BC

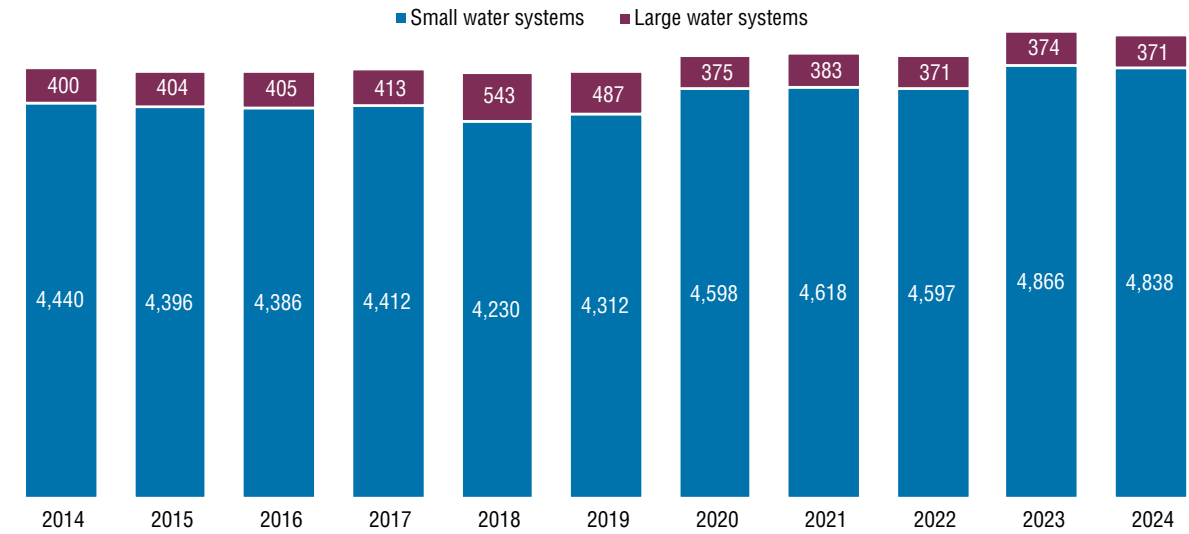
2.1 Water System Size

On March 31, 2024, there were 5,209 drinking water supply systems permitted under the DWPA in BC, a slight decrease from the 5,240 recorded in 2023.[5] While 4,838 (93 per cent) of water systems in the province are small (Figure 2.1), most of the population in the province is served by a relatively small number of large local government water systems.

The Interior Health region contains the largest percentage of water systems in the province (Figure 2.2). It also has the largest number of small water systems (Figure 2.3).

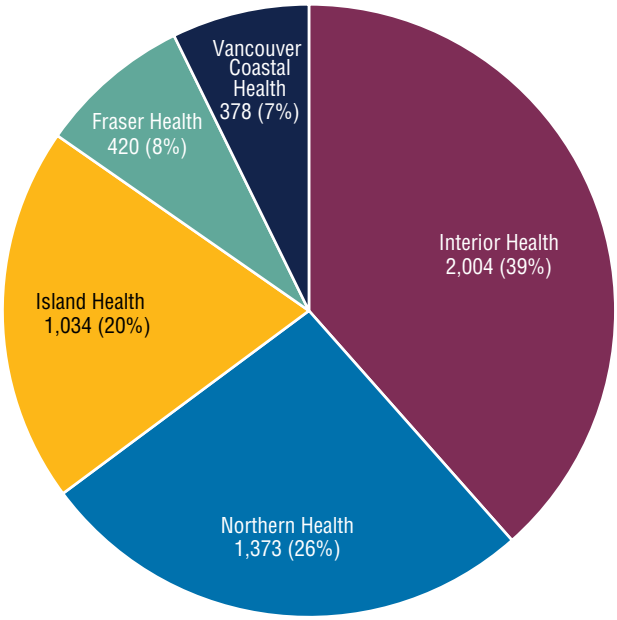
Water systems, ranging from the large and complex to the small and simple, are regulated under the DWPA. Reaching compliance with the DWPA to provide potable water is an easier task for some water systems than it is for others. Larger systems have economies of scale, which can lower costs

Figure 2.1: Number of Water Systems on March 31, by Size and Year, BC, 2014 to 2024



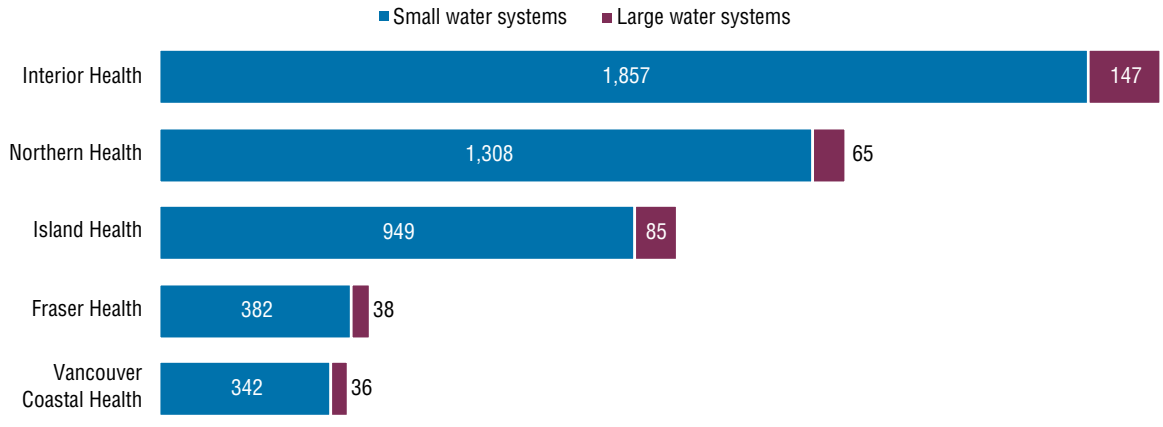
Notes: Small water systems serve 500 or fewer people in a 24-hour period. Large water systems serve more than 500 people in a 24-hour period.
Source: Regional health authorities, environmental health protection databases; 2013/14 to 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 2.2: Number and Percentage of Water Systems on March 31, by Health Authority, BC, 2024



Note: Bulk water haulers are not included in the dataset for this figure.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 2.3: Number of Water Systems on March 31, by Size and Health Authority, BC, 2024



Notes: Small water systems serve 500 or fewer people in a 24-hour period. Large water systems serve more than 500 people in a 24-hour period. Bulk water haulers are not included in the dataset for this figure.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

for customers. The type of water system can also influence the financial management, governance, and oversight of a water system. The entity that owns the water system and the governance structure for the system for making decisions, raising revenue, and providing powers to resolve issues also influence a water system's ability to make necessary infrastructure improvements. Only municipalities and regional districts have access to government funding for capital projects and improvements.

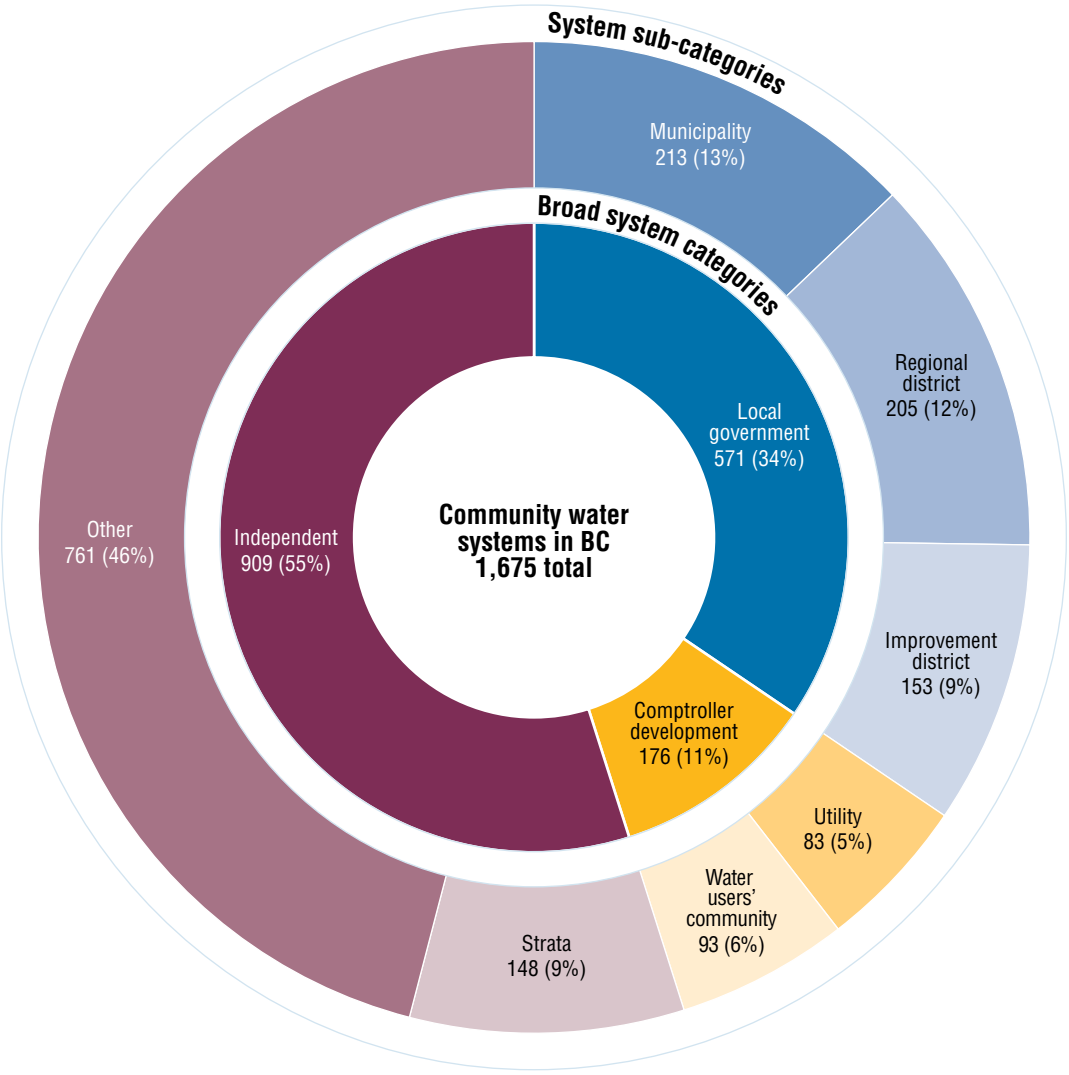
In 2019, the OPHO introduced a variety of community water system type categories and sub-categories for reporting purposes, which can be found in Appendix A, Table A.1. Community water systems include three broad categories: local government water systems (i.e., those established under the *Local Government Act*), water systems incorporated by the Comptroller of Water Rights (i.e., private water utilities and water users' communities), and independent water systems. Fifty-five per cent of community water systems in BC are independent (Figure 2.4) and include subdivisions, strata properties and developments, mobile home parks, shared-interest properties, apartment buildings, and shared systems between neighbours.

Water systems incorporated under the *Local Government Act* or the *Water Utility Act* benefit from a governance structure for managing their finances and decision-making. However, independent community water systems have no administrative or financial oversight from the Comptroller of Water Rights or the Ministry of Housing and Municipal Affairs. As such, there is no regulatory agency responsible for holding those water systems[d] accountable for their financial management, rate-setting, or decision-making processes. A drinking water officer may sometimes require an asset management plan or financial plan as a condition on permit, but such plans are not a requirement under the DWPA, and drinking water officers are not positioned to evaluate their adequacy. Therefore, these independent systems must rely on the limited available tools described in past reports to set rates and develop long-term financial or asset management plans, which many struggle to create or implement.

Standalone facility water systems are not connected to community water systems; they provide their own water supply through a well, surface intake, or cistern, and they are usually found in rural areas where a community water supply may not be available or financially accessible. Examples include work camps, schools, campgrounds, and food facilities. For a complete list of standalone facility types, see Appendix A, Table A.2. Private recreational areas (e.g., hotels, inns, resorts, campgrounds, and RV parks) and food facilities account for 50 per cent of standalone facility water systems in BC (Figure 2.5).

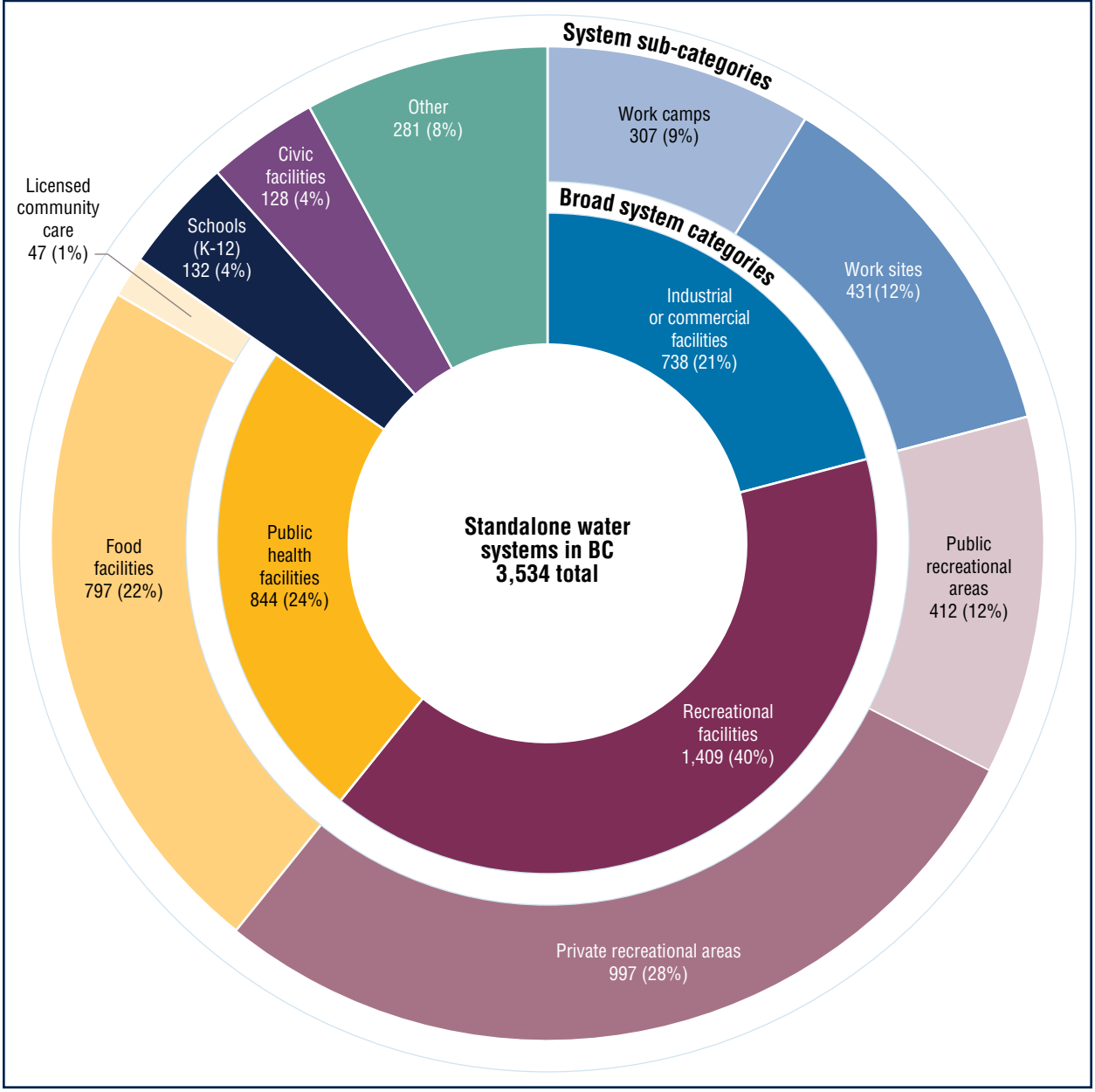
[d] Strata properties differ from other independents in this regard, as water systems built to supply strata property developments are initially approved and regulated as a utility. Once the required number of lots have been sold, the Comptroller of Water Rights may approve the transfer of the water system ownership from the developer to the strata corporation, thus exempting the strata from the *Water Utility Act* as the governance of the system would then fall under the *Strata Property Act*.

Figure 2.4: Number and Percentage of Community Water Systems on March 31, by Type, BC, 2024



Notes: The inner ring represents the number and percentage of community water systems broken down by facility type. The outer ring depicts the number and percentage of community water systems broken down by sub-category for each facility type. This chart does not show 16 uncategorized community water systems from Northern Health or three First Nations water systems inspected by regional health authorities, but the total number reflected in the chart's centre includes these 19 uncategorized water systems. It also does not include on-reserve First Nations water systems that receive environmental health services from the First Nations Health Authority. Data systems for regional health authorities are still not completely reliable for reporting on system type and some misclassification is likely. Bulk water haulers are also not included in the dataset for this figure. Interior Health was unable to break down its data on independent water systems by the sub-categories used by the PHO except for strata properties; therefore, those sub-categories were combined and called "other." "Comptroller development" refers to developments with water systems incorporated by the Comptroller of Water Rights.
Source: Regional health authorities; environmental health protection databases, 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 2.5: Number and Percentage of Standalone Facility Water Systems on March 31, by Type, BC, 2024



Notes: The inner ring represents the number and percentage of standalone facilities broken down by facility type. The outer ring represents the number and percentage of standalone facilities broken down by sub-category for each facility type. The categories for schools, civic facilities, and "other" do not include sub-categories; therefore, their wedges stretch across both rings. These data do not include on-reserve First Nations water systems that receive environmental health services from the First Nations Health Authority. Northern Health was unable to categorize the facility type for 281 standalone facilities, so these are captured under "other." Bulk water haulers are not included in the dataset for this figure. The number of standalone facilities was higher by two water systems in the data used to create this figure due to a reporting error that could not be resolved; for consistency, the correct total was used in the centre for the total number of standalone water systems.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Table 2.1 shows the number of small and large community water systems and standalone facilities by regional health authority. The Interior Health and Island Health regions have the most community water systems. In both cases, 80 per cent or more of the community water systems in their jurisdictions serve populations of 500 or fewer people. Sixty-eight per cent of BC's water systems—3,534 out of 5,209—are standalone facilities, 97 per cent of which serve 500 people or fewer. The Interior (35 per cent) and Northern Health (33 per cent) regions have the greatest number of standalone facilities in the province.

Table 2.1: Number and Percentage of Water Systems on March 31, by Type, Size, and Health Authority, BC, 2024

Regional health authority	Community water systems			Standalone facilities		
	Small	Large	Total	Small	Large	Total
Island Health	285 (80%)	71 (20%)	**356**	664 (98%)	14 (2%)	**678**
Northern Health	173 (84%)	34 (16%)	**207**	1,135 (97%)	31 (3%)	**1,166**
Vancouver Coastal Health	166 (89%)	21 (11%)	**187**	176 (92%)	15 (8%)	**191**
Interior Health	658 (85%)	120 (15%)	**778**	1,199 (98%)	27 (2%)	**1,226**
Fraser Health	115 (78%)	32 (22%)	**147**	267 (98%)	6 (2%)	**273**
Total	**1,397 (83%)**	**278 (17%)**	**1,675**	**3,441 (97%)**	**93 (3%)**	**3,534**

Notes: Small water systems serve 500 or fewer people in a 24-hour period. Large water systems serve more than 500 people in a 24-hour period. Bulk water haulers are not included in the dataset for this table.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

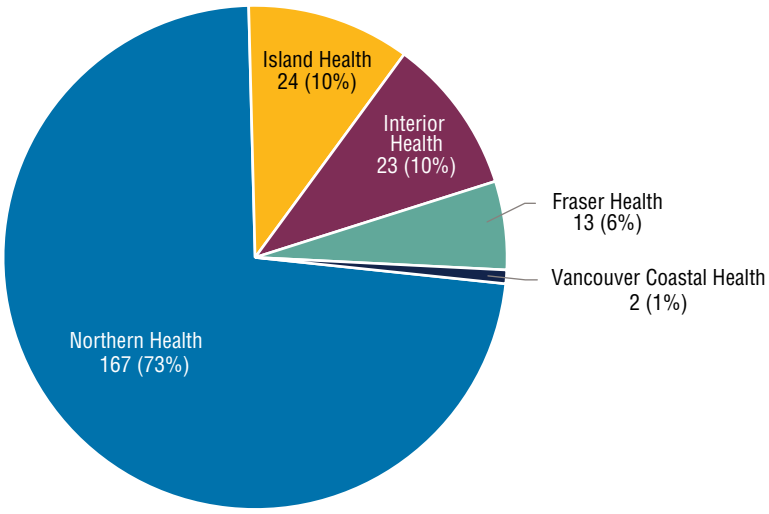
2.2 Bulk Water Haulers in BC

The number of bulk water haulers in BC grew from 150 in 2018 to 229 in 2024; most are in the Northern Health region (Figure 2.6).[2] Under the DWPA, tank trucks and vehicle water tanks used for the delivery of potable water for domestic use are included in the definition of a domestic water system. They must have an operating permit and fill their tanks from a fill station connected to a source water supply approved by a drinking water officer.[1] In the 2023/24 fiscal year, the number of bulk water haulers in the province increased by eight. All the new trucks are in the Fraser Health region. There was no change in the number of permitted fill stations with standalone water sources in the Northern Health (seven) or Interior Health (six) regions, the only regional health jurisdictions with these facilities.

2.3 Source Water for Drinking Water Systems

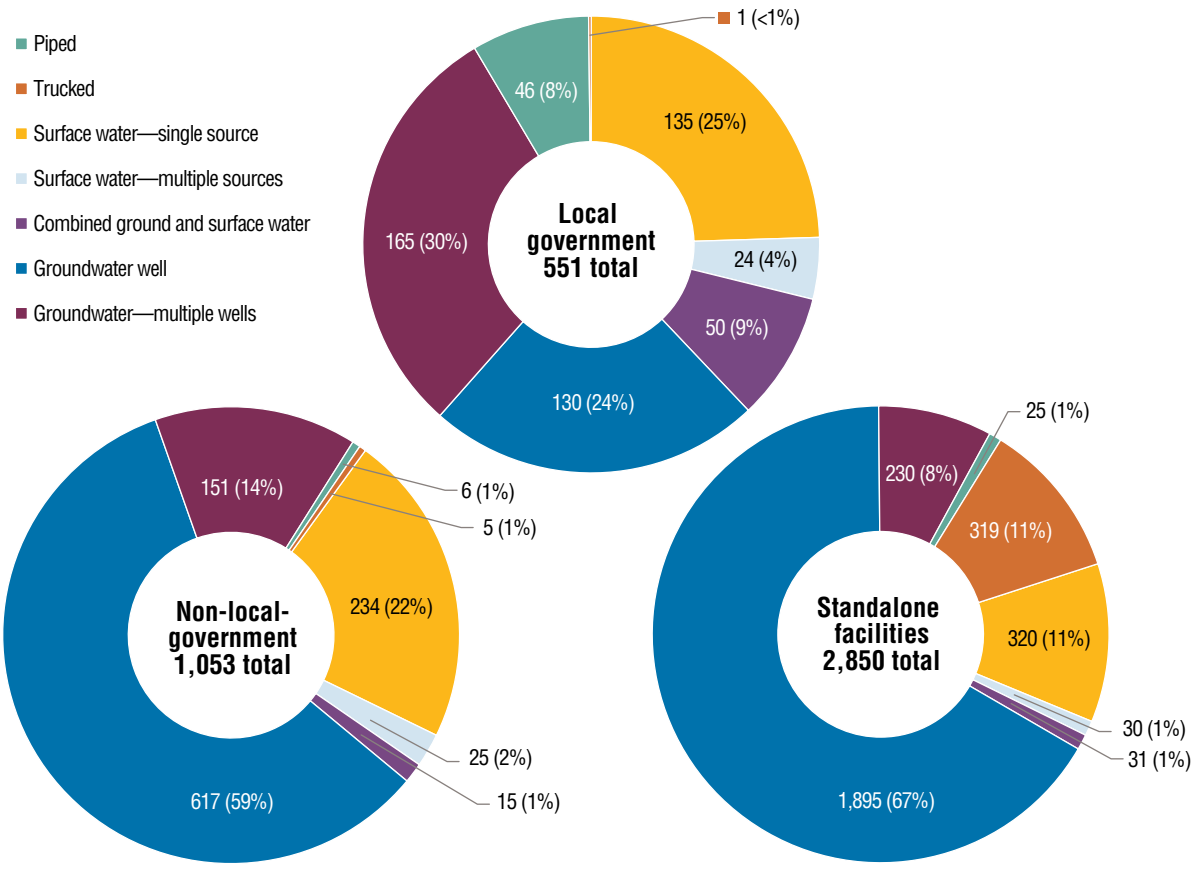
In BC, most local government water systems get their water from multiple groundwater wells or surface water supplies (Figure 2.7). Non-local-government and standalone water systems are more likely to rely on groundwater from a single well (Figure 2.7), making them more vulnerable to service disruptions if there were to be changes in water quality or quantity. Systems that rely on bulk-supplied sources are usually local government systems receiving water through interconnected distribution systems. Examples include municipalities interconnected with the Capital Regional District (CRD) water supply. Each municipality operates its own distribution system that is bulk-supplied from the CRD system. Similarly, Metro Vancouver bulk-supplies water to some municipalities in the Lower Mainland.

Figure 2.6: Number and Percentage of Bulk Water Haulers on March 31, by Health Authority, BC, 2024



Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 2.7: Number and Percentage of Source Water Supplies in Use on March 31, by System and Source Type, BC, 2024



Note: The totals for each water system type do not match the totals for the same water system types shown in Figure 2.4, as not all water systems reported source data.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Bulk water haulers supply most of their water to standalone facilities, many of which are industrial facilities in the Northern Health region, such as work camps.

The Drinking Water Protection Regulation (DWPR) requires that groundwater sources used for drinking water supply systems be disinfected if the groundwater is at risk of containing pathogens.[6]

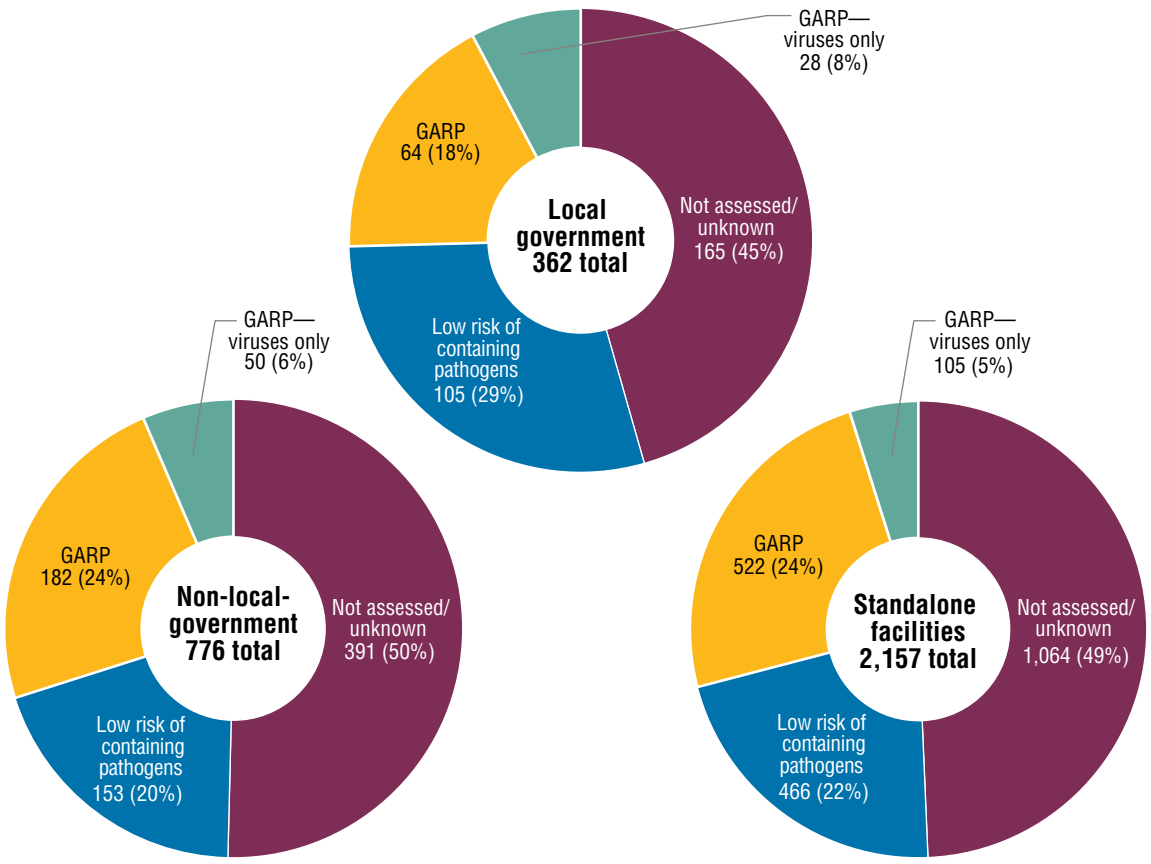
In order to provide guidance for determining the level of pathogen risk and associated treatment requirements for groundwater, HLTH funded the development of the *Assessment of Groundwater at Risk of Containing Pathogens (GARP)* guidance document.[7] A GARP assessment, using these guidelines, considers the likelihood of pathogens being present in the groundwater source based on a combination of source water quality results, well

location, well construction, and aquifer type and setting. The information gathered during the GARP assessment helps inform the drinking water officer of the potential hazards to a water source.

In 2024, close to 50 per cent of all system types (local government, non-local-government, and standalone) had not been assessed or their GARP status was unknown (Figure 2.8). Local governments reported both the greatest percentage of assessed systems (55 per cent) and the greatest percentage of systems at low risk of containing pathogens (29 per cent). Data on GARP assessments is still somewhat incomplete but is expected to improve thanks to the new environmental health data system being developed by HLTH and the regional health authorities.

To help better protect source water, the Ministry of Water, Land and Resource Stewardship (WLRS) has developed the Source Water Risk Assessment

Figure 2.8: Number and Percentage of Assessments of Groundwater at Risk of Containing Pathogens (GARP) on March 31, by Risk Level and System Type, BC, 2024



Note: GARP assessment totals for some health authorities are more than the number of groundwater sources because more than one assessment may have been completed for systems with multiple wells.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Framework, a four-step process to identify and manage hazards to drinking water sources:

1. Identify drinking water systems and their source waters.
2. Identify potential hazards.
3. Assess hazards.
4. Develop hazard response and planning.

To support the first step in the four-step framework, the WLRS is developing the Drinking Water Sources Spatial Dataset, a map showing the locations of intakes and wellheads for drinking water systems, including the source water areas supplying those systems. The first version of this dataset will be published in fall 2025 and will document 1,900 drinking water systems. For the second step, WLRS is developing the Source Water Evaluation Tool (SWET), which will provide consolidated information for source characterization and hazards for a given source water area and drinking water system. SWET will be built in phases, with completion targeted for 2027. These projects, once complete, will significantly improve the accessibility and reliability of data to address the longstanding knowledge gap regarding source water hazards on a provincial scale, and they will enable water suppliers and others to complete steps three and four more effectively.[8]

3. Guidelines and Permits

3.1 Drinking Water Guidelines and Directives

Under the DWPA (section 4), the Minister of Health may establish guidelines and directives for drinking water officers or other officials that must be considered or followed when exercising their powers or performing their duties under the Act.[1] In 2023/24, HLTH released

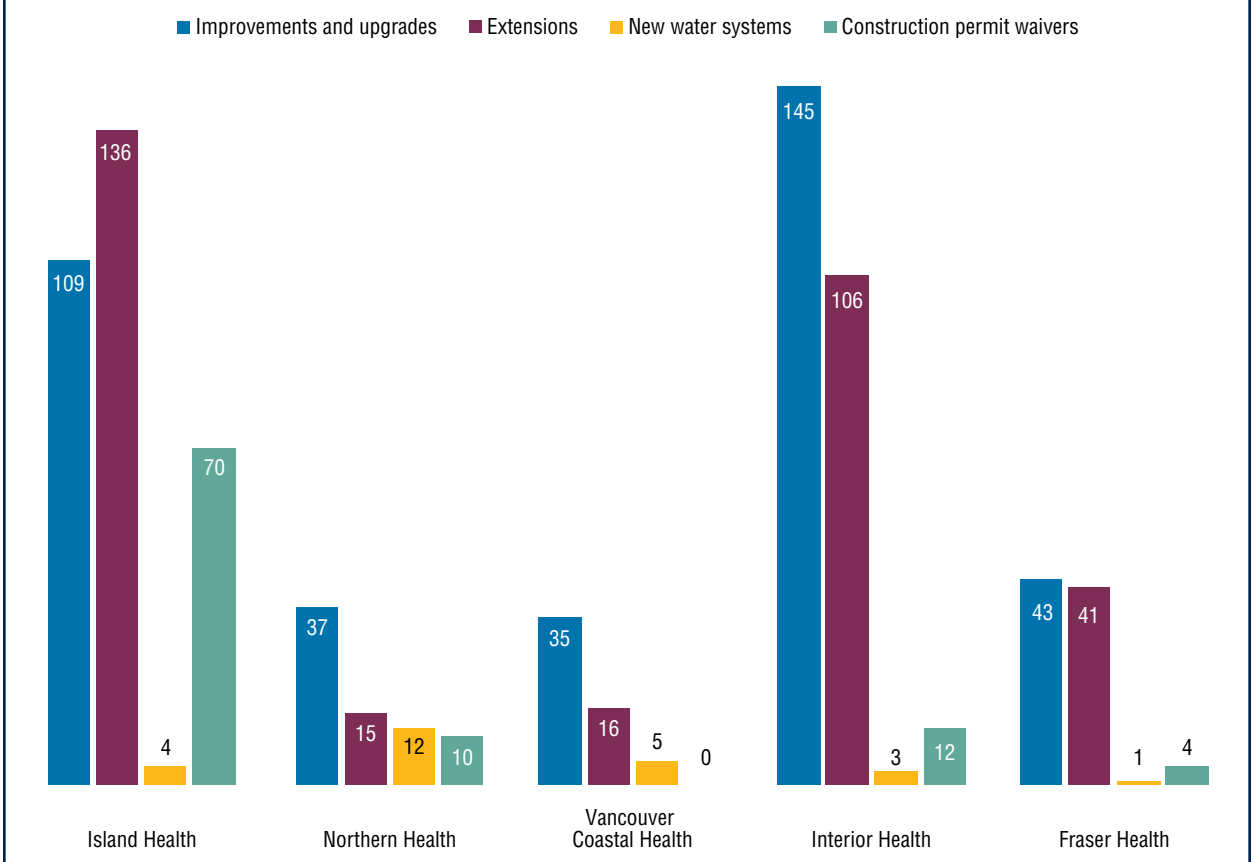
- The *Guide for Communicating with Water Users* (June 2023).[9]
- The revised *Guide to Emergency Response and Contingency Plans for Water Supply Systems* (June 2023).[10]
- An updated version of the *Drinking Water Officers' Guide* (February 2024), which includes a consolidation of guidance documents, corrections, and advice on interpreting when a system may be serving a single-family residence.[11]

3.2 Construction Permits

In BC, a person must get a construction permit from their local health authority for the construction, installation, alteration, or extension of a water supply system. Public health engineers who are employed by the regional health authorities are delegated the duty, as issuing officials, to review and issue construction permits. The number of such construction permits issued per year in BC increased from 699 in 2023 to 804 in 2024.[5] Eighty-five per cent (683) of construction permits were issued for improvements, upgrades, and extensions (Figure 3.1), most of which were in the Island Health and Interior Health regions. Only 25 construction permits were issued for new drinking water systems, and 12 of these were in the Northern Health region.

Issuing officials may waive the requirement for a construction permit for small water systems under certain conditions. To receive a construction permit waiver, a person must still submit the required information for a construction permit for their water system. Island Health issued the largest number of construction permit waivers in the province, going from 46 in 2023 to 70 in 2024, an increase of 52 per cent.[5] This increase at Island Health was largely because the health authority targeted its water systems for treatment objective assessments as part of its work plan for the 2023/24 fiscal year. This resulted in waiver applications to address manganese treatment and other functional upgrades such as filters, pumps, and cisterns. Additionally, waivers were issued for a number of systems that were in the process of upgrading their treatment processes in order to meet treatment objectives in light of new GARP assessments.[12]

Figure 3.1: Number of Water System Construction Permits by Type and Health Authority, BC, Fiscal Year 2023/24



Note: For data on the total number of construction permits, see Appendix B, Table B.1.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

4. Water Operations and Management

4.1 Water System Facility Classification

In BC, the Environmental Operators Certification Program (EOCP) classifies water systems and certifies water system operators using standards adopted by the Association of Boards of Certification.[e,13] Water system facility classifications include small water systems, water treatment systems (levels I to IV), and water distribution systems (levels I to IV). Classification levels are based on a system's operational complexity.

The total number of EOCP-classified water treatment and water distribution systems (including those with expired classifications) in 2023/24 (Table 4.1 and Figure 4.1) has remained essentially unchanged since 2022/23; however, the proportion of those systems with expired classifications has decreased. The number of expired classifications for water distribution facilities declined from 115 in 2023 to 89 in 2024 (23 per cent), and the number of expired water treatment facility classifications dropped from 68 in 2023 to 44 in 2024 (35 per cent).[5]

The reduction in expired facility classifications occurred across all classification levels for water treatment and across levels I to III for water distribution. The combined total number of level-I and level-II facilities, including those with expired classifications, represents the largest group of facilities at 74 per cent for water treatment and 71 per cent for water distribution.

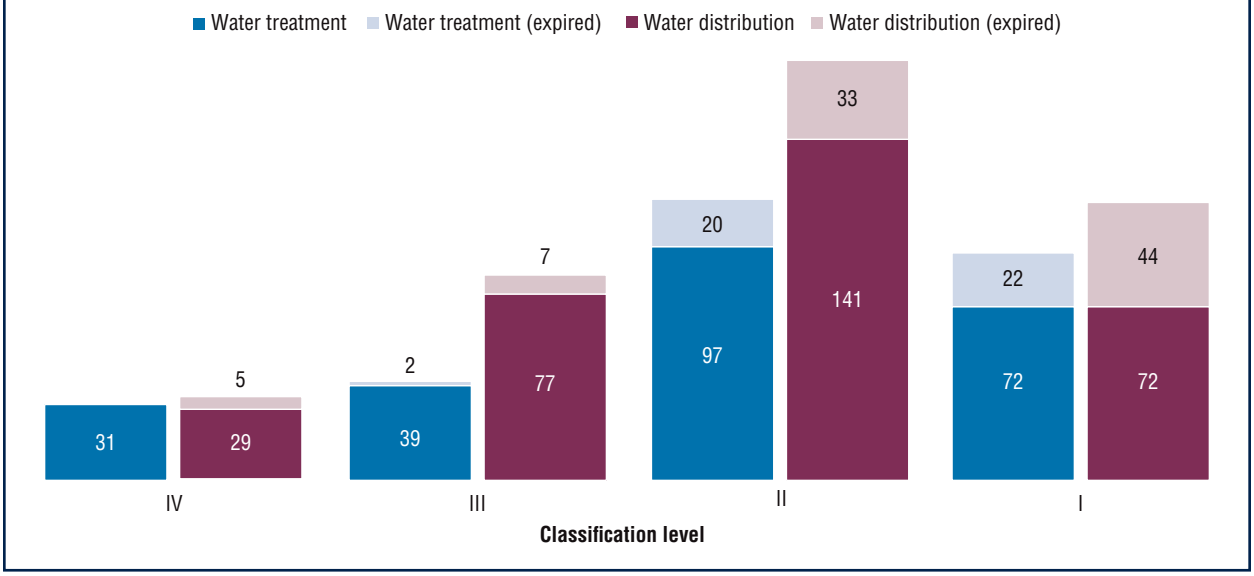
[e] The Association of Boards of Certification is an international organization that provides the standards for classification and certification and that issues examinations for operators.

Table 4.1: Number of Water Treatment and Distribution Facilities on March 31, by Classification Level, BC, 2024

Type of system	Classification level				Total
	IV	III	II	I	
Water treatment	31	39	97	72	**239**
Water treatment (expired)	0	2	20	22	**44**
Water treatment total	**31**	**41**	**117**	**94**	**283**
Water distribution	29	77	141	72	**319**
Water distribution (expired)	5	7	33	44	**89**
Water distribution total	**34**	**84**	**174**	**116**	**408**

Notes: Expired facilities are an internal flag set within the Environmental Operators Certification Program's Customer Relationship Manager system. It indicates that a facility's classification status is expired and needs to be renewed. It does not imply an operational status. Data are included here for completeness.
Source: Environmental Operators Certification Program, Customer Relationship Manager system; 2023/24. Prepared by the Office of the Provincial Health Officer, BC Ministry of Health, May 2025.

Figure 4.1: Number of Water Treatment and Distribution Facilities on March 31, by Classification Level, BC, 2024



Notes: Expired facilities are an internal flag set within the Environmental Operators Certification Program's Customer Relationship Manager system. This flag indicates that a facility's classification status is expired and needs to be renewed. It does not imply an operational status. Data are included here for completeness.
Source: Environmental Operators Certification Program, Customer Relationship Manager system; 2023/24. Prepared by the Office of the Provincial Health Officer, BC Ministry of Health, May 2025.

4.2 Operator Certification

Water suppliers must ensure that operators of water supply systems meet the necessary training and certification requirements. The DWPA (section 9) requires that a person not operate, maintain, or repair a prescribed water system[f] unless they are qualified in accordance with the regulations or are working under the supervision of a person who is qualified.[1] The DWPR (section 12) also states that a person is qualified to operate, maintain, or repair a water system if they have been certified by the EOCP for that class of system.[6]

Overall, for 2024, the total number of operators certified by the EOCP remained consistent with that of the previous year. Most operator certifications are for level I and level II, for both water treatment (73 per cent combined) and water distribution (79 per cent combined) (Table 4.2 and Figure 4.2), due to the high number of smaller and less complex water systems across BC. The remainder of operators are certified at level III and level IV, and they typically operate large and complex water systems.

The number of water treatment operators and water distribution operators not in good standing with the EOCP, at all certification levels, has doubled since 2023. The number of water treatment operators not in good standing climbed from 141 in 2023 to 302 in 2024, and the number of water distribution operators not in good standing rose from 478 in 2023 to 850 in 2024.[5] The reasons for this change are not clear, but the number of certified operators can fluctuate for a few reasons: operators may not have met the certification criteria set out by the EOCP; may have not paid their fees; may be behind on their continuing education units; or may have retired or left the industry. Given that the EOCP experienced organizational changes in 2023/24, it is possible that these changes affected the number of certifications issued during that period.

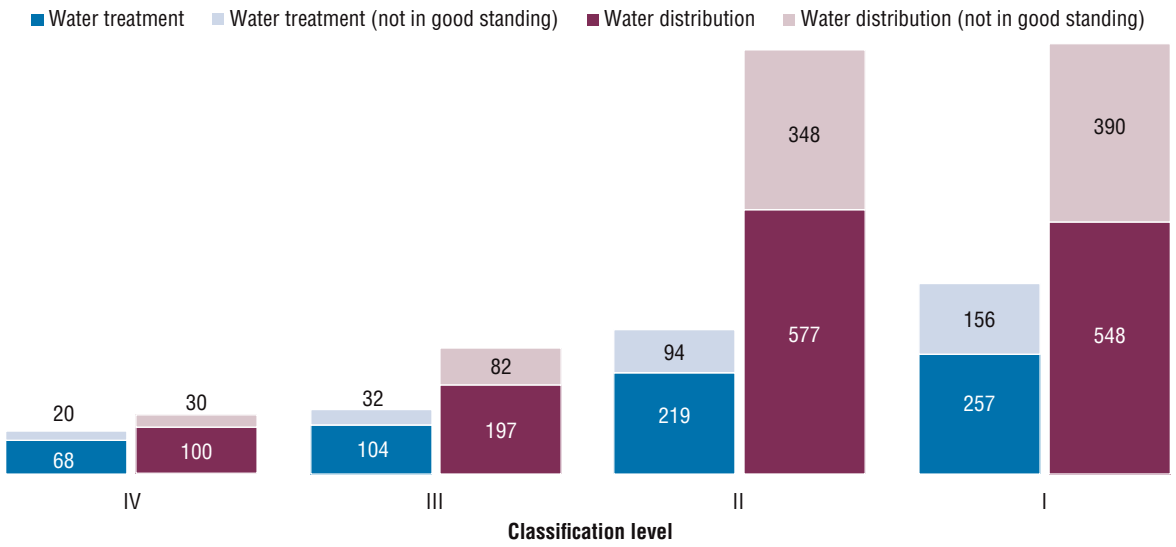
[f] A prescribed water system is any water supply system to which a section of the DWPA or DWPR pertains. In the case of section 9 of the DWPA, all water supply systems are prescribed except for small systems.

Table 4.2: Number of Certified Operators for Water Treatment and Distribution on March 31, by Certification Level, BC, 2024

Type of system	Certification level				Total
	IV	III	II	I	
Water treatment	68	104	219	257	**648**
Water treatment—not in good standing	20	32	94	156	**302**
Water treatment total	**88**	**136**	**313**	**413**	**950**
Water distribution	100	197	577	548	**1,422**
Water distribution— not in good standing	30	82	348	390	**850**
Water distribution total	**130**	**279**	**925**	**938**	**2,272**

Note: Operators that are not in good standing are operators that currently do not meet the certification criteria set out by the Environmental Operators Certification Program.
Source: Environmental Operators Certification Program, Customer Relationship Manager system; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

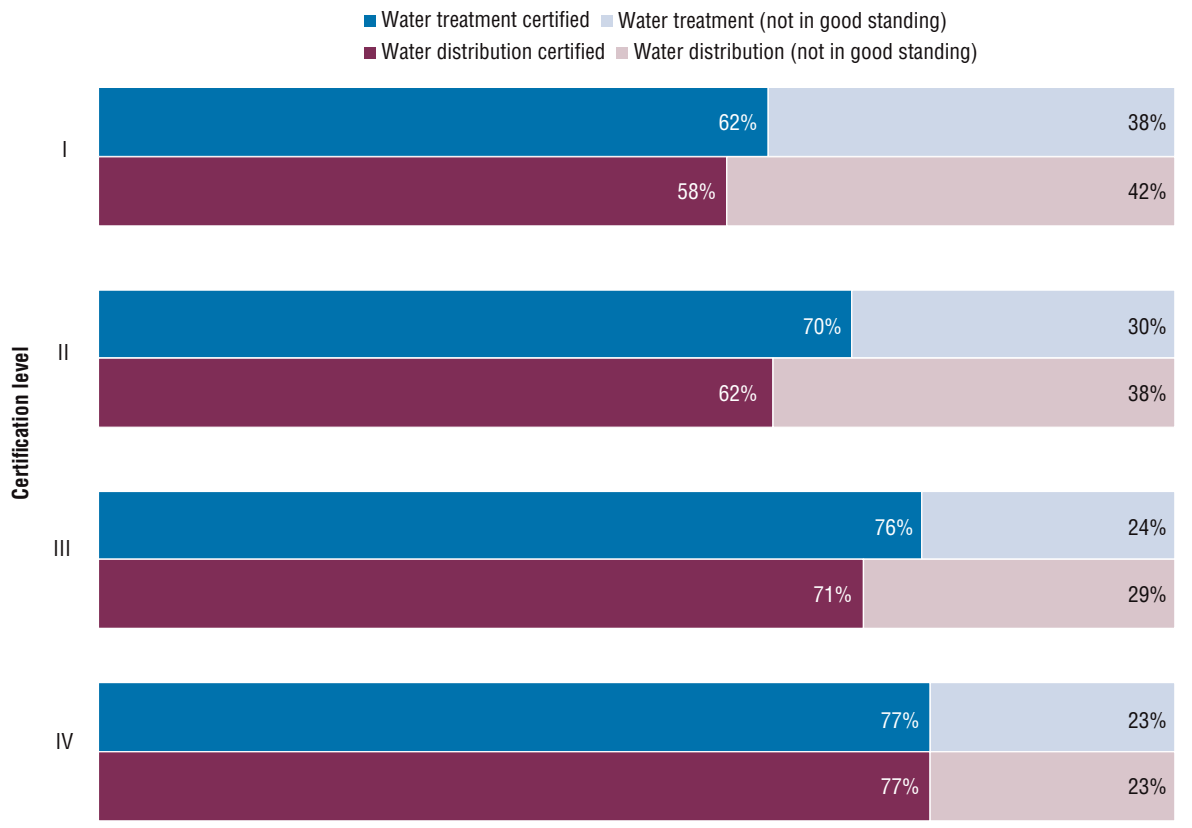
Figure 4.2: Number of Certified Operators for Water Treatment and Distribution on March 31, by Certification Level, BC, 2024



Note: Operators that are not in good standing are operators that currently do not meet the certification criteria set out by the Environmental Operators Certification Program.
Source: Environmental Operators Certification Program, Customer Relationship Manager system; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

The largest percentage of operators not in good standing is made up of level-I and level-II treatment and distribution operators, ranging from 30 per cent to 42 per cent (Figure 4.3). This may be because smaller, simpler water systems face recruitment and retention challenges; because operators of water systems in rural and remote areas face barriers to completing educational opportunities; or because these operators failed to complete the required paperwork for certification renewal, potentially perceiving a lack of urgency to do so.

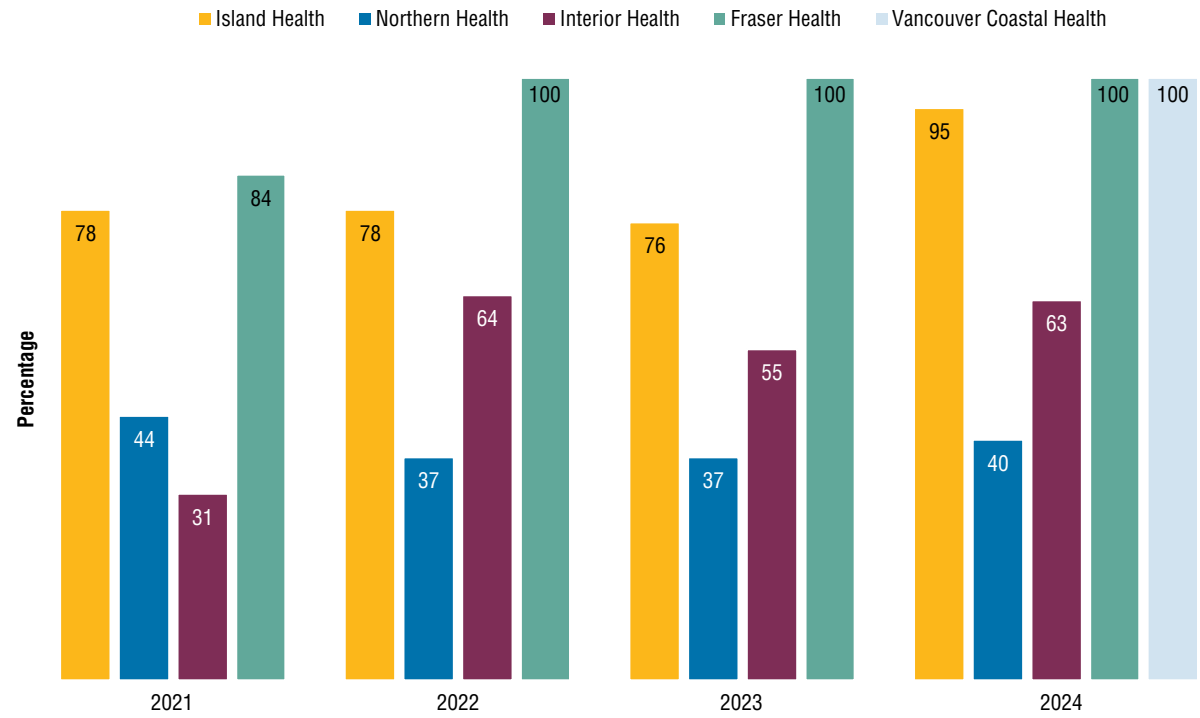
Figure 4.3: Percentage of Certified Operators for Water Treatment and Distribution on March 31, by Certification Level, BC, 2024



Note: Operators that are not in good standing are operators that currently do not meet the certification criteria set out by the Environmental Operators Certification Program.
Source: Environmental Operators Certification Program, Customer Relationship Manager system; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

As an indicator for good operations, the OPHO tracks the number of large water systems that have at least one operator certified to the required level of classification for the water system. Three health authorities reported that 95 per cent or more of systems serving more than 500 people per day in their jurisdiction had at least one operator certified to the appropriate classification level (Figure 4.4). Overall, compliance rates are improving. However, water systems in the Interior Health and Northern Health jurisdictions continue to have lower compliance, potentially due to the challenges in recruiting and retaining certified operators for mid-sized, rural, and remote systems. Vancouver Coastal Health was able to report on this metric for the first time, indicating 100 per cent compliance for large water systems.

Figure 4.4: Percentage of Large Water Systems with a Certified Operator on March 31, by Health Authority, BC, 2021 to 2024

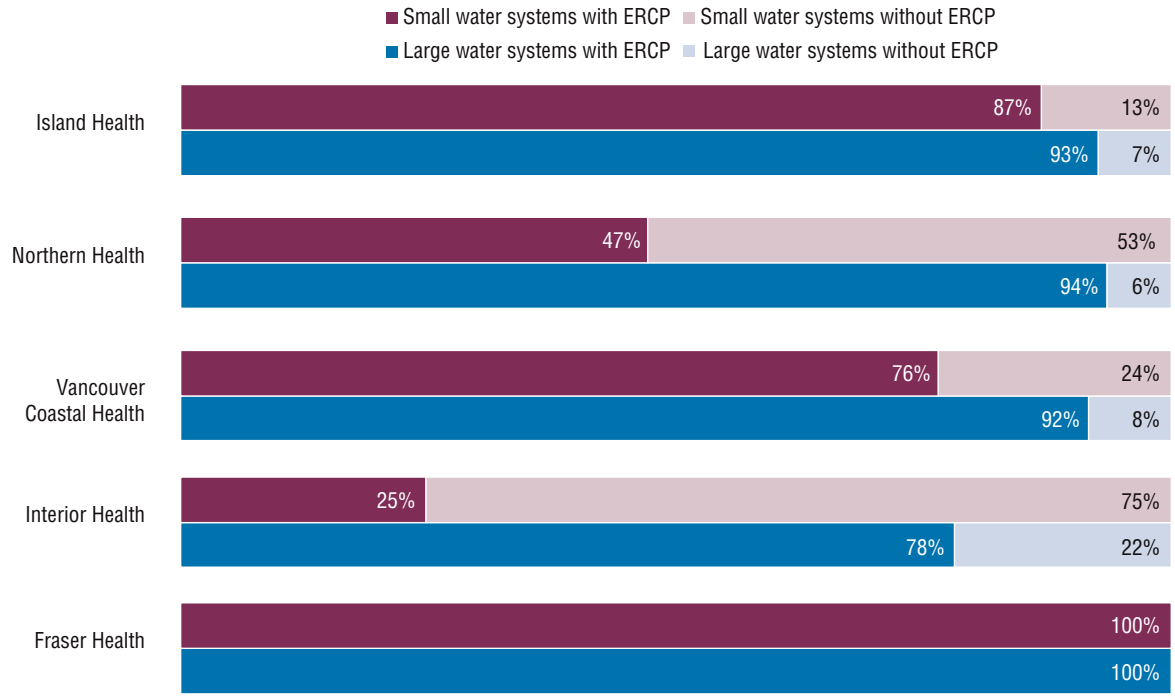


Notes: Large water systems are those serving more than 500 people in a 24-hour period. "With a certified operator" means there is at least one operator certified to the level of classification for the system. No data were available from Vancouver Coastal Health prior to 2024 due to data system limitations. In the *Annual Report of Activities Under the Drinking Water Protection Act in BC, 2022 to 2023*, similar data from Northern Health were incorrectly reported as 100 per cent. The data for those fiscal years have been corrected for this report.
Source: Regional health authorities, environmental health protection databases; 2020/21–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

4.3 Emergency Response and Contingency Plans

Section 10 of the DWPA requires prescribed water systems to have an emergency response and contingency plan (ERCP).[1] ECRPs outline measures and actions to address situations that could cause an operational interruption that threatens drinking water safety. In 2024, at least 90 per cent of large water systems under most regional health authorities had an approved ERCP (Figure 4.5). Fraser Health also reported that all small water systems in its jurisdiction had an accepted ERCP. The compliance rates for small water systems under other health authorities were lower, ranging from 25 to 87 per cent. While the percentage of small water systems with approved ERCPs is generally lower than for large water systems, the level of compliance among small water systems has remained stable or increased in most health authorities' regions. The higher compliance rate across the province for large water systems is likely because their operators have the levels of training and operational knowledge necessary to develop and execute an ERCP.

Figure 4.5: Percentage of Water Systems with an Emergency Response and Contingency Plan on March 31, by Size and Health Authority, BC, 2024



Notes: An ERCP is an emergency response and contingency plan for a water supply system. A system is deemed to have an ERCP as required by the *Drinking Water Protection Act* if it has been reviewed and accepted by a drinking water officer. Small water systems serve 500 or fewer people in a 24-hour period. Large water systems serve more than 500 people in a 24-hour period.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

The number of systems with an accepted ERCP (Table 4.3) for the Island Health and Vancouver Costal Health regions in 2024 is consistent with numbers from 2023. In the Northern Health region, small water system compliance declined by 19 per cent, and there was a slight decrease for large water systems. Interior Health reported an increase in both small and large water system compliance, at 14.7 per cent and 5.5 per cent, respectively. In 2023, Island Health launched an initiative to add a water scarcity component to ERCPs for all water supply systems to ensure that communities are better prepared for drought. By the end of 2024, 84 per cent of water supply systems in the Island Health jurisdiction had updated ERCPs that also include a drought component.[14]

Table 4.3: Number and Percentage of Water Systems with an Emergency Response and Contingency Plan on March 31, by Size and Health Authority, BC, 2024

Regional health authority	Small	Large	Total
Island Health	825 (87%)	79 (93%)	**904 (87%)**
Northern Health	618 (47%)	61 (94%)	**679 (49%)**
Vancouver Coastal Health	260 (76%)	33 (92%)	**293 (78%)**
Interior Health	461 (25%)	115 (78%)	**576 (29%)**
Fraser Health	382 (100%)	38 (100%)	**420 (100%)**

Notes: A system is deemed to have an emergency response and contingency plan as required by the *Drinking Water Protection Act* if it has been reviewed and accepted by a drinking water officer. Small water systems serve 500 or fewer people in a 24-hour period. Large water systems serve more than 500 people in a 24-hour period.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

5. Water Quality Compliance Monitoring

5.1 Guidelines for Canadian Drinking Water Quality

Health Canada leads the Federal-Provincial-Territorial Committee on Drinking Water (Committee on Drinking Water), which develops and publishes the *Guidelines for Canadian Drinking Water Quality*.[15] The guidelines set out the maximum acceptable concentration (MAC) or treatment goals for substances in drinking water.[g] These limits are based on scientific studies that examine the potential harm of both short-term and long-term exposure to a parameter at concentrations above certain levels.[16]

In 2023/24, the Committee on Drinking Water published one technical document for antimony (January 2024).[17]

5.2 Bacteriological Monitoring

Section 11 of the DWPA requires that water suppliers monitor their drinking water source, the water in their system, and the water their system provides for specified parameters (i.e., *E. coli*, fecal coliforms, and total coliforms) established by the DWPR and by the system's operating permit.[1,6] Total coliforms consist of a group of bacteria that occur naturally in the environment and can be found in fecal matter, soil, or vegetation. Total coliforms do not necessarily represent a health concern when detected, but are an indicator of possible water quality deterioration, treatment problems, or vulnerabilities within a distribution system.[18] Fecal coliforms are a group of bacteria associated with human or animal wastes. *E. coli* is a fecal coliform bacteria and has become the preferred and most widely used indicator of fecal contamination.[19]

On March 6, 2024, HLTH amended section 9(1) and Schedule A of the DWPR to remove fecal coliforms from the list of parameters requiring immediate reporting from the laboratory and from the list of parameters requiring routine monitoring.[20] This amendment brought the regulation in line with best practices and Health Canada's *Guidelines for Canadian Drinking Water Quality*.[16] As a result of improvements in *E. coli* testing and detection methods, these tests are now the standard in routine monitoring for fecal contamination of drinking water, making fecal coliform testing outdated and redundant.

Schedule B of the DWPR outlines sampling frequency requirements for water suppliers based on the size of the population served.[6] Water systems should meet their required sampling frequency for bacteriological monitoring 90 per cent of the time, a target established by the OPHO

[g] The Committee on Drinking Water also develops aesthetic objectives, operational objectives, and operational guidance for drinking water.

and the regional health authorities as an indicator of good monitoring practices.[h] In 2023/24, the regional health authorities provided bacteriological frequency sampling compliance data broken down by system size and by broad system type, meaning community water systems versus standalone water systems (Table 5.1). The previous two reporting periods only included data for community water systems.

Both Northern Health (31 per cent) and Interior Health (44 per cent) have lower small water compliance rates than Fraser Health (74 per cent) and Island Health (65 per cent) (Table 5.1). This may be due to staffing shortages, the larger number of small water systems, and the larger geographical areas drinking water officers must cover within both the Interior Health and Northern Health regions. Water suppliers in parts of the Interior Health and Northern Health regions may also struggle to get samples to a lab within the 30-hour time limit required for water quality testing. Although small water systems had lower compliance rates than large systems—particularly in the Northern and Interior Health regions—improvements were observed in all health authority jurisdictions compared to 2023, perhaps due to increased inspections.

The number and percentage of community drinking water systems meeting the sampling frequency requirements at least 90 per cent of the

Table 5.1: Number and Percentage of Water Systems Meeting the Sampling Frequency Requirement 90 Per Cent of the Time, by Type, Size, and Health Authority, BC, Fiscal Year 2023/24

Regional health authority	Water system size	Community water systems	Standalone water systems	All water systems
Island Health	Small	185 (65%)	318 (48%)	503 (53%)
	Large	58 (82%)	10 (71%)	68 (80%)
	Total	**243 (68%)**	**328 (48%)**	**571 (55%)**
Northern Health	Small	54 (31%)	195 (17%)	249 (19%)
	Large	26 (76%)	15 (48%)	41 (63%)
	Total	**80 (39%)**	**210 (18%)**	**290 (21%)**
Interior Health	Small	287 (44%)	564 (47%)	851 (46%)
	Large	108 (90%)	17 (63%)	125 (85%)
	Total	**395 (51%)**	**581 (47%)**	**976 (49%)**
Fraser Health	Small	85 (74%)	177 (66%)	262 (69%)
	Large	32 (100%)	5 (83%)	37 (97%)
	Total	**117 (80%)**	**182 (67%)**	**299 (71%)**

Notes: The total numbers of community and standalone water systems for calculating percentages are provided in Table 2.1. Reporting on the frequency requirement is averaged over the fiscal year. Results presented in the table may include data from seasonal operations, which has been noted to cause inconsistencies in how data are reported for those systems. Vancouver Coastal Health was unable to report for 2023/24 due to inaccurate data fields.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

[h] There are circumstances in which a drinking water officer would not require sampling at this frequency. Examples include seasonal operations, remote locations, or small water systems using untreated surface water under a long-term boil water notice.

time increased for all regional health authorities during this reporting period. Large water systems continued to show higher compliance rates than small water systems. In Island Health, Interior Health, and Fraser Health, at least 76 per cent of large water systems met this requirement. For the first time, compliance data are available for standalone water systems. These systems showed lower compliance than community water systems, with rates ranging from 18 to 67 per cent, compared to 39 to 80 per cent for community water systems. Small standalone water systems, such as those serving industrial camps, food facilities, or recreational areas, sometimes struggle to meet sampling frequency requirements. This could be because water suppliers in remote areas may struggle to deliver water samples to a lab within the required 30-hour time frame for water quality testing. Operators of standalone facilities usually have many other responsibilities or roles in addition to their responsibilities for the water system, which may also hinder their ability to deliver samples in time. For example, an operator of such a facility may also be a restaurant owner, a campground caretaker, a school custodian, a building or business manager, or an off-site facility owner.

5.3 Water Quality Testing: Chemical and Physical Parameters

In BC, drinking water officers use the *Guidelines for Canadian Drinking Water Quality*[16] to define potability for prescribed water systems. While drinking water legislation in BC does not prescribe chemical sampling parameters or frequencies, it does require that all water systems provide potable water, and it enables drinking water officers to specify sampling requirements on an operating permit. As such, water suppliers must conduct chemical, physical, and radiological sampling at a frequency determined by the drinking water officer to assess whether the drinking water exceeds any MAC for health.

In 2023/24, compliance for this metric among community water systems was generally good. The number of systems monitoring chemical water quality in accordance with their monitoring plan increased by 10 per cent in 2023/24 over 2022/23.[5] In the four health authorities reporting, at least 76 per cent of large community water systems were compliant (Table 5.2). In three out of four of the reporting regional health authority jurisdictions, 60 per cent or more of small community water systems were monitoring chemical water quality in accordance with their monitoring plan (Figure 5.1). However, community systems in the Northern Health region had a lower compliance rate of 29 per cent. Overall, small community water system compliance increased in 2023/24 over 2022/23 in the jurisdictions of all health authorities except Island Health, where it decreased.

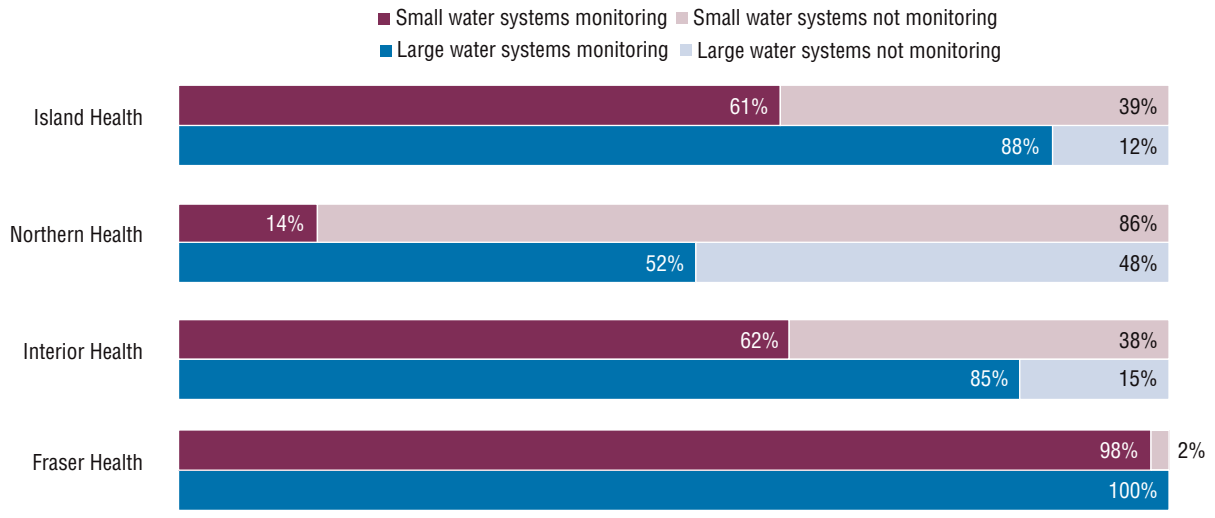
In 2023/24, for the first time, the drinking water protection programs at the regional health authorities provided the OPHO with data on chemical monitoring for standalone water systems (Table 5.2). The compliance rate with this requirement is lower than it is among community water systems, particularly for small standalone water systems, which lowers the overall compliance rate when the data are combined. Standalone water systems in the Northern Health jurisdiction were least able to fulfill this requirement, with only 13 per cent of them meeting their chemical sampling requirements.

Table 5.2: Number and Percentage of Systems Monitoring Chemical Water Quality, by Size, Type, and Health Authority, BC, March 31, 2024

Regional health authority	Water system size	Community water systems	Standalone water systems	All water systems
Island Health	Small	178 (62%)	398 (60%)	576 (61%)
	Large	64 (90%)	11 (79%)	75 (88%)
	Total	**242 (68%)**	**409 (60%)**	**651 (63%)**
Northern Health	Small	51 (29%)	138 (12%)	189 (14%)
	Large	26 (76%)	8 (26%)	34 (52%)
	Total	**77 (37%)**	**146 (13%)**	**223 (16%)**
Interior Health	Small	392 (60%)	751 (63%)	1,143 (62%)
	Large	109 (91%)	16 (59%)	125 (85%)
	Total	**501 (64%)**	**767 (63%)**	**1,268 (63%)**
Fraser Health	Small	114 (99%)	259 (97%)	373 (98%)
	Large	32 (100%)	6 (100%)	38 (100%)
	Total	**146 (99%)**	**265 (97%)**	**411 (98%)**

Notes: The total numbers of community and standalone water systems for calculating percentages are provided in Table 2.1. Health authorities were deemed to have been monitoring chemical water quality if they were doing so in accordance with their established monitoring plan. Data were not available from Vancouver Coastal Health.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 5.1: Percentage of Water Systems Monitoring Chemical Water Quality, by Size and Health Authority, BC, March 31, 2024



Notes: Water suppliers were deemed to have been monitoring chemical water quality if they were doing so in accordance with their established monitoring plan. Data were not available from Vancouver Coastal Health due to data system limitations.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Table 5.3 shows the number of water systems exceeding the *Guidelines for Canadian Drinking Water Quality*[16] at the source and at the tap. Manganese and arsenic continue to be the parameters most reported to exceed their MAC guideline value at the source; however, due to treatment or dilution processes, the number of water systems that continue to exceed the guidelines for these parameters at the tap is considerably lower.

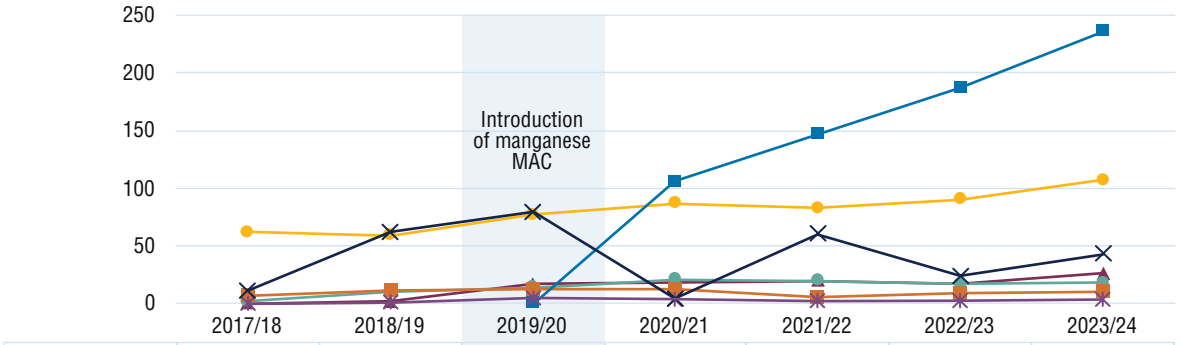
Since the introduction of the health-based MAC for manganese in 2019, which led to additional monitoring, the number of water systems exceeding the guideline value at the source and at the tap continues to grow (Figure 5.2 and Figure 5.3). In 2023/24, there were 26 per cent more manganese exceedances at the source than in 2022/23, while arsenic exceedances rose by 19 per cent.

Table 5.3: Number of Water Systems Reporting an Exceedance of the *Guidelines for Canadian Drinking Water Quality* on March 31, BC, 2024

Parameter of concern	Exceedances in maximum acceptable concentrations (MAC) at the source and delivered to the tap	
	Source	Delivered
Arsenic	107	29
Lead	26*	18
Uranium	18	14
Nitrate	10	8
Manganese	236	143
Selenium**	3	3
Disinfection by-products	N/A	20
Other	43	26

Notes: Exceedances are totals for all regional health authorities. The Vancouver Coastal Health data system does not track compliance with the *Guidelines for Canadian Drinking Water Quality*; information reported is the number of systems with treatment to manage elevated levels in source water. Actual numbers may be higher. Fraser Health does not have a system in place for tracking the above parameters; values were obtained by surveying environmental health officers and therefore may be inconsistent with 2022/23 data. Fraser Health has also excluded four systems with elevated arsenic levels from the above count as they are approved non-potable systems.
*It could not be conclusively verified that lead parameters for "source" were not the result of leaching from taps or plumbing lines.
**In 2014, BC established its own selenium drinking water guideline separate from the *Guidelines for Canadian Drinking Water Quality* (MAC of 0.01 mg/L).
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

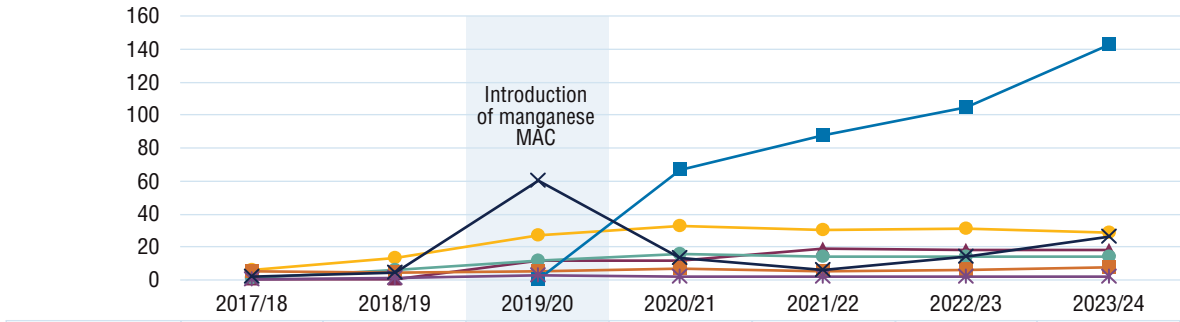
Figure 5.2: Number of Water Systems Reporting an Exceedance of the *Guidelines for Canadian Drinking Water Quality* at the Source, by Fiscal Year, BC, 2017/18 to 2023/24



	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Arsenic	62	59	77	87	83	90	107
Lead	0	2	17	18	20	17	26
Uranium	2	10	14	21	20	17	18
Nitrate	7	11	13	13	6	9	10
Manganese	NA	NA	0	106	147	187	236
Selenium	0	1	4	3	2	2	3
Other	11	62	79	4	60	24	43

Notes: The maximum acceptable concentration (MAC) for manganese was introduced in 2019. The introduction of this new guideline caused water systems with pre-existing high levels of manganese in the water supply to automatically become out of compliance with the new guideline. In 2014, BC established its own selenium drinking water guideline separate from the *Guidelines for Canadian Drinking Water Quality* (MAC of 0.01 mg/L).
Source: Regional health authorities, environmental health protection databases; 2017/18–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 5.3: Number of Water Systems Reporting an Exceedance of the *Guidelines for Canadian Drinking Water Quality* Delivered to the Tap, by Fiscal Year, BC, 2017/18 to 2023/24



	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Arsenic	6	13	27	33	30	31	29
Lead	0	0	12	12	19	18	18
Uranium	1	6	12	16	14	14	14
Nitrate	5	4	5	7	5	6	8
Manganese	NA	NA	0	67	88	105	143
Selenium	0	1	3	2	2	2	2
Other	2	4	60	13	6	14	26

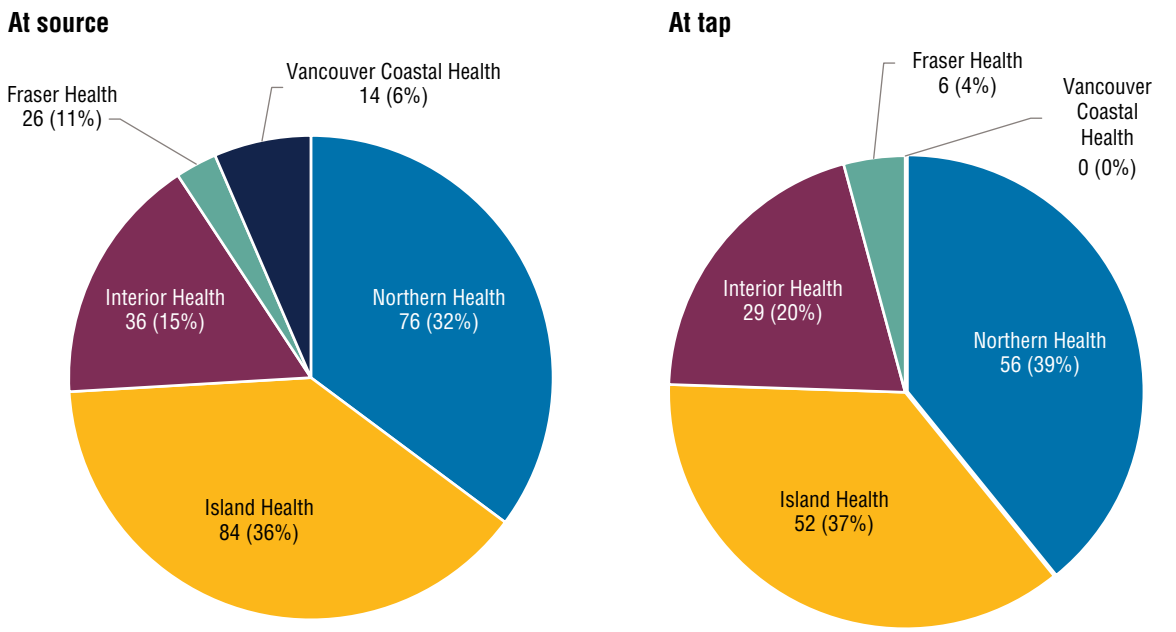
Notes: The maximum acceptable concentration (MAC) for manganese was introduced in 2019. The introduction of this new guideline caused water systems with pre-existing high levels of manganese in the water supply to automatically become out of compliance with the new guideline. In 2014, BC established its own selenium drinking water guideline separate from the *Guidelines for Canadian Drinking Water Quality* (MAC of 0.01 mg/L).
Source: Regional health authorities, environmental health protection databases; 2017/18–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Exceedances in the "other" category at the source increased by 79 per cent from 2022/23 (43 up from 24).[5] Fluoride and boron exceedances accounted for most of this increase. In water at the tap, manganese and the "other" category saw the most notable increases in the number of exceedances since 2022/23. Manganese in tap water increased by 36 per cent (143 exceedances up from 105) and the "other" category increased by 86 per cent (26 up from 14).[5]

The drinking water protection programs at Northern Health and Island Health authorities reported the largest number of manganese exceedances at the source and at the tap (Figure 5.4). The rise in manganese exceedances can be attributed to additional monitoring and a change in the MAC for manganese in 2019. For example, Island Health launched a manganese follow-up process in May 2023, which revealed a considerable number of additional water systems with manganese exceedances at the source (84 up from 61) and at the tap (52 up from 15).[5]

Health Canada is also reviewing updated evidence for arsenic and, in 2025, posted a proposed reduction in the MAC for public comment. Should a reduced MAC come into effect, it is anticipated that many water systems may exceed the proposed guideline.

Figure 5.4: Number and Percentage of Water Systems Reporting an Exceedance of Manganese Guidelines, at Source and at the Tap, by Health Authority, BC, Fiscal Year 2023/24



Notes: An exceedance of manganese is based on levels specified in the *Guidelines for Canadian Drinking Water Quality* (GCDWQ). Health authorities use different methods to track these data, which results in inconsistencies in reporting, thus limiting the reliability and interpretability of the data. The Vancouver Coastal Health data system does not track compliance with the GCDWQ; the information reported is the number of systems with treatment to manage elevated levels in source water. Actual numbers may be higher. Fraser Health does not have a system in place for tracking the above parameters; values were obtained by surveying environmental health officers and therefore may be inconsistent with 2022/23 data.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

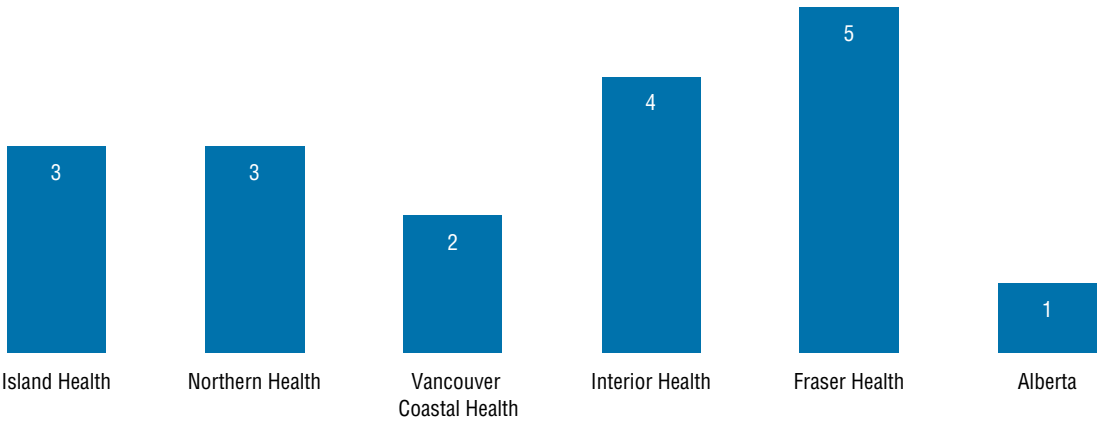
5.4 Approved Laboratories and Testing

The DWPR requires laboratories that conduct water quality monitoring for *E. coli* and total coliforms in drinking water to be approved in writing by the PHO.[6] As of March 31, 2024, there were 18 PHO-approved laboratories available for testing *E. coli* and total coliforms in water. Figure 5.5 shows how many approved laboratories were located in each health authority's region, as well as one in Alberta.

Drinking water legislation requires water suppliers to submit water samples for total coliform and *E. coli* testing at frequencies set out in the DWPR. The laboratory conducting the tests must notify the water supplier, the drinking water officer, and the medical health officer if any monitored parameter fails to meet the DWPR standard.

In BC, the BC Centre for Disease Control Public Health Laboratory (BCCDC PHL) provides subsidized sampling to all small water systems and some large water systems.[i] Subsidized sampling aims to support smaller water systems and those in rural and remote areas to meet their sampling frequency targets. In regions where transporting samples to the BCCDC PHL within the 30-hour time limit is a challenge, the BCCDC PHL has contracted this service to other laboratories. In 2023/24, the three subcontracted labs included

Figure 5.5: Number of Approved Laboratories for Bacteriological Testing on March 31, by Location, BC, 2024



Notes: Approved laboratories for bacteriological testing have been approved in writing by the Provincial Health Officer of BC, per section 8(4) of the Drinking Water Protection Regulation. BC has one approved laboratory outside of the province, located in Calgary, Alberta, as an option for water suppliers that subsidize their own testing and may prefer transport to Calgary. During this reporting period, CARO Analytical Services are included in Fraser Health data due to the temporary relocation of the laboratory from Richmond (Vancouver Coastal Health region) to Burnaby (Fraser Health region).[21]
Source: C. Lee, Provincial Coordinator, Enhanced Water Quality Assurance Program; June 2, 2025. Prepared by the Office of the Provincial Health Officer, May 2025.

[i] Very large local government water systems, including those supplied by Metro Vancouver or the Capital Regional District water supplies, do not receive subsidized water sampling. In the Interior Health region, most large water systems of all types have taken on the responsibility of budgeting for their own sampling.

CARO Analytical Services – Kelowna, Northern Laboratories (2010) Ltd. in Prince Rupert, and Wellness Water Testing Laboratory in Prince George. This report includes data from these subsidized laboratories but not from larger water systems that pay for testing at PHO-approved laboratories of their choice.

In 2023/24, BC water operators submitted 92,532 subsidized drinking water samples to the BCCDC PHL and three subcontracted labs. Based on the available data on samples tested, less than 1 per cent had positive *E. coli* reports (Table 5.4). Samples that test positive for *E. coli* must immediately be reported by the testing laboratory to the water supplier, the drinking water officer responsible for the system, and the medical health officer for the local health authority to determine what action should be taken, such as issuing a boil water notice for part or all of the water system. If a water system is already on a boil water notice, for reasons such as inadequate treatment of surface water or no treatment at all, the health authority may alert the laboratory that the immediate reporting requirement for those systems is not required, as an advisory is already in place to address the inherent biological risks of the water system. Of these positive *E. coli* sample reports, the BCCDC PHL and CARO Analytical Services – Kelowna confirmed that 49 per cent and 72 per cent of their samples, respectively, were taken from sites that were not on a boil water notice at the time the sample was taken.

Rejected samples accounted for less than 1 per cent (655) of all water samples in 2023/24 (Table 5.4), a slight decrease from 2022/23 when 2,155 samples (2.25 per cent) were rejected.[5] Analysis of water samples must begin within 30 hours of the samples being collected. If the samples do not arrive at the laboratory within 30 hours, they are considered at risk for sample rejection. For most of the province, the 30-hour timeframe is not an issue; however, in remote areas of northern BC, the central coast, and parts of the Interior, transport challenges may prevent samples from being delivered in time to meet the deadline, particularly during extreme weather events or winter months when road conditions or flights are affected. In these situations, laboratories will test and report samples received after 30 hours at the health authority's request; however, if a sample exceeds the 48-hour hold-time[j] limit, it is automatically rejected as an expired sample. Expiry is the most common reason for rejected drinking water samples (69 per cent).[22] Samples that exceeded the 30-hour transit limit but were still processed are not recorded as rejected samples.

Other reasons for rejected samples include sample leaks, incomplete paperwork, use of improper bottles, samples outside of acceptable temperature ranges, and process errors. January 2024 had the greatest number of rejected samples (19 per cent), primarily due to expired samples due to transport challenges (Figure 5.6), most of which came from water systems within the jurisdictions of Northern Health (37 per cent) and Interior Health (16 per cent).[22] Interior Health experienced a few unexpected spikes in rejected samples from CARO Analytical Services – Kelowna in the summer months, reportedly due to couriers running at or over capacity.[23]

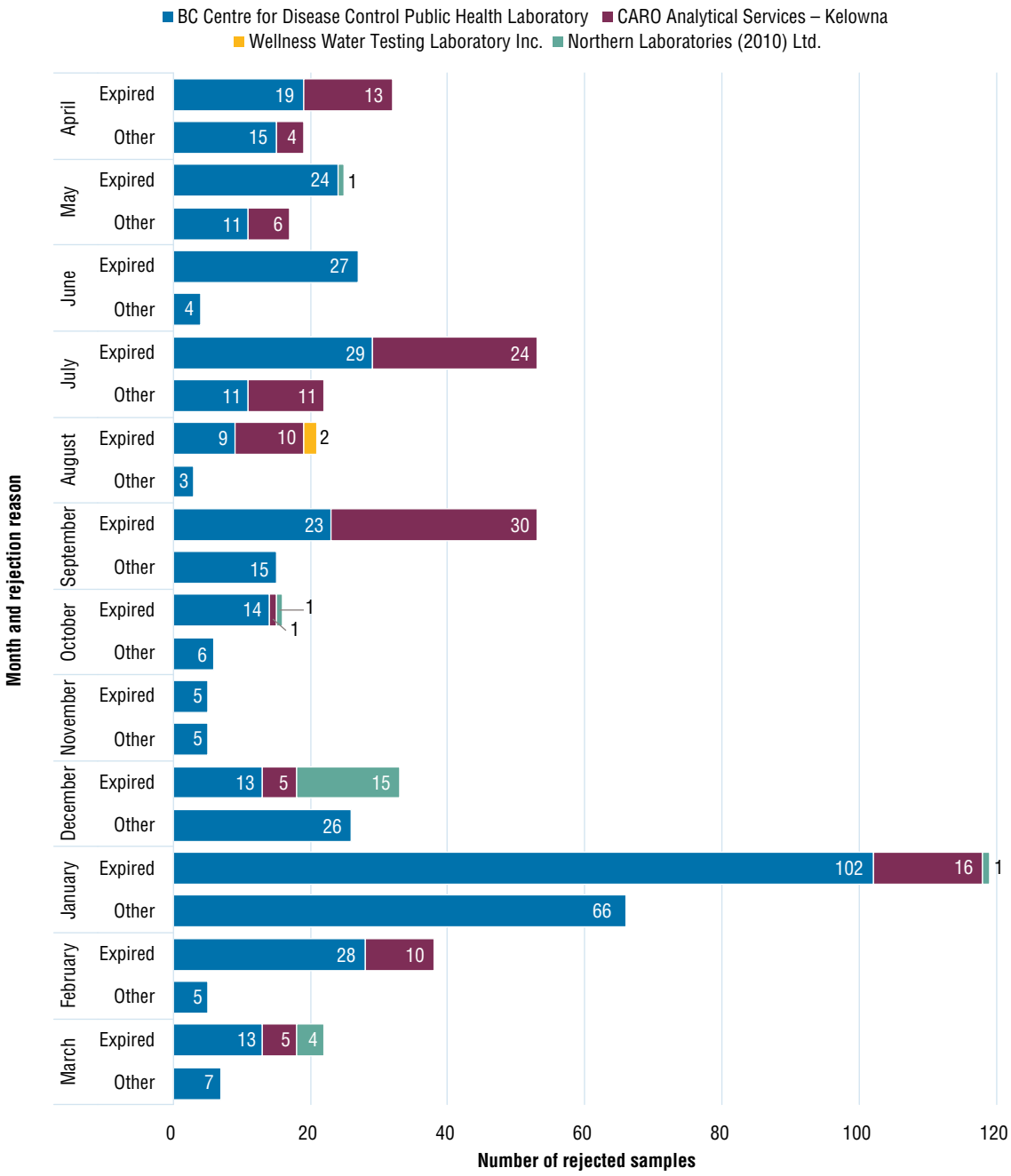
[j] The time between the sample being taken and being tested in the lab.

Table 5.4: Water Sample Testing for *E. coli*, BC, Fiscal Year 2023/24

Reporting laboratory	Samples submitted	Samples tested	Samples rejected	Number of sample sites with positive *E. coli* reports not on BWN at the time of sampling	Total number of sample sites that reported positive for *E. coli*
BC Centre for Disease Control Public Health Laboratory	69,628	69,148	480 (0.69%)	67 (0.10%)	138 (0.20%)
CARO Analytical Services – Kelowna	18,126	17,991	135 (0.74%)	33 (0.18%)	46 (0.26%)
Northern Laboratories (2010) Ltd.	4,161	4,139	22 (0.53%)	-	26 (0.63%)
Wellness Water Testing Laboratory Inc.	617	615	2 (0.32%)	-	6 (0.98%)
Total	**92,532**	**91,867**	**665 (0.72%)**	**100 (0.11%)**	**208 (0.23%)**

Notes: Untreated source water samples are not included. A sample is considered rejected if analysis did not occur because of issues impacting the reliability of results, such as holding time beyond 30 hours after the sample was collected; this may occur due to transportation issues, laboratory issues, or other challenges. The total number of sample sites with a positive *E. coli* report is a count of sample sites, not water systems. Sample sites with a positive *E. coli* report that were not on a boil water notice (BWN) at the time of sampling are included within the total number of sample sites data. These are sample sites where the sample requisition indicated the water system it was from was not on a BWN at the time of sampling. Data on BWN status at the time of sampling are not currently tracked by Wellness Water Laboratory Inc. or Northern Laboratories (2010) Ltd.
Source: BC Centre for Disease Control Public Health Laboratory, laboratory information management system; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 5.6: Number of Water Samples Rejected by Subsidized Laboratories, by Reason and Month, BC, Fiscal Year 2023/24



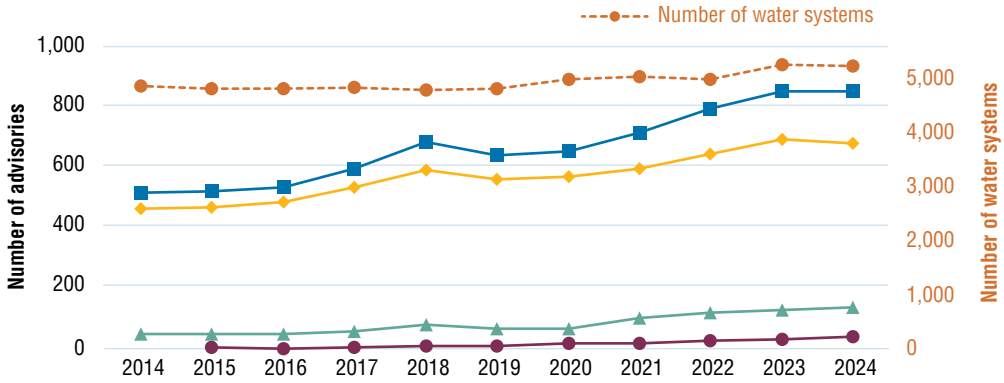
Notes: This figure includes only data provided by the BC Centre for Disease Control Public Health Laboratory and three other laboratories approved by the Provincial Health Officer that provide subsidized drinking water testing. Samples that exceeded the 30-hour transit time but were still processed and reported by the laboratories are not included in this dataset. Samples that were rejected due to exceedances of hold or transport times are recorded as expired. Samples that were rejected for all other reasons are recorded as "other."
Source: BC Centre for Disease Control Public Health Laboratory, laboratory information management system; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

6. Public Notification of Drinking Water Quality Concerns

Under the DWPA, if a prescribed water quality standard is not met or the water supplier believes there is a threat to drinking water, they must notify the drinking water officer.[1] The officer may request or order the water supplier to give public notice of the potential threat and recommend what actions should be taken by the system users.

Over the past few years, the number of drinking water advisories recorded on March 31 has steadily increased (Figure 6.1). On March 31, 2024 (Table 6.1), however, the number of advisories remained fairly stable, with a minor change from 864 in 2023 to 862 in 2024.[5] There was a small drop in boil water notices, from 700 in 2023 to 686 in 2024.[5] There were marginal increases in the numbers of water quality advisories and "do not use/consume" notices, likely due to increased sampling for manganese after the introduction of its guideline in 2019. While the total number of advisories did not increase in 2024, the numbers are still high, with 17 per cent of

Figure 6.1: Number of Active Drinking Water Advisories on March 31, by Advisory Type and Year, BC, 2014 to 2024



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Boil water notice	471	476	491	541	601	568	576	602	654	700	686
Water quality advisory	50	50	48	58	82	68	69	104	122	131	137
Do not use/do not consume		3	2	4	8	11	18	19	27	33	39
Total advisories	521	529	541	603	691	647	663	725	803	864	862
Water systems	4,840	4,800	4,791	4,825	4,773	4,799	4,973	5,001	4,968	5,240	5,209

Notes: "Total advisories" is the sum of all advisories for that fiscal year. "Do not use/do not consume" data were not available for 2014. The number of water systems is included in the figure to compare the number of advisories to the number of water systems in the province.
Source: Regional health authorities, environmental health protection databases; 2013/14–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Table 6.1: Number and Percentage of Water Systems with Active Advisories on March 31, by Advisory Type and Health Authority, BC, 2024

Advisory type	Island Health	Northern Health	Vancouver Coastal Health	Interior Health	Fraser Health	Total
Boil water notice	25 (2%)	115 (8%)	59 (16%)	479 (24%)	8 (2%)	**686 (13%)**
Water quality advisory	1 (<1%)	29 (2%)	7 (2%)	98 (5%)	2 (<1%)	**137 (3%)**
"Do not use" or "do not consume" notice	0 (0%)	7 (<1%)	5 (1%)	27 (1%)	0 (0%)	**39 (1%)**
Total	**26 (2%)**	**151 (11%)**	**71 (19%)**	**604 (30%)**	**10 (2%)**	**862 (17%)**
Number of water systems	**1,034**	**1,373**	**378**	**2,004**	**420**	**5,209**

Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

water systems on an advisory. Boil water notices comprised 80 per cent of the total number of advisories and remain the most common type of advisories, with 13 per cent of water systems on a boil water notice.

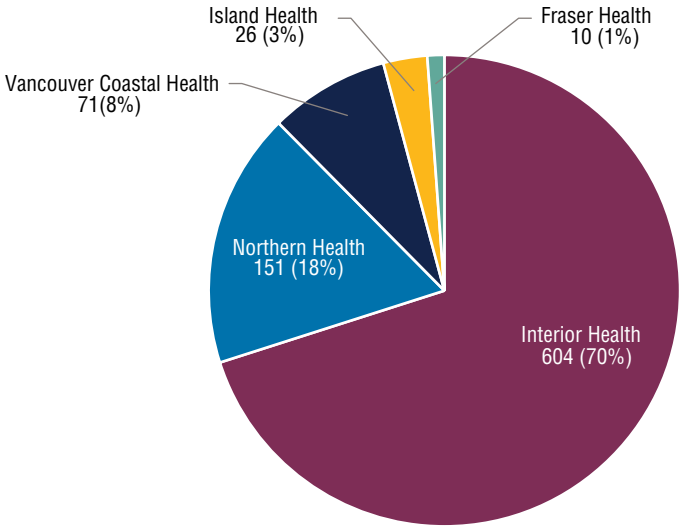
The Interior Health region continues to have the largest overall number of advisories (604, or 70 per cent) (Figure 6.2), and 585 (97 per cent) of those are connected to small water systems. Small water systems are more likely than larger systems to be on an advisory due to the challenges small systems face. Small water systems often have operational capacity and compliance challenges that are difficult to resolve. They frequently suffer from deficient infrastructure components, inadequate treatment, and a lack of funds or access to funding to make needed improvements.

These challenges are well documented throughout previous OPHO drinking water reports and can be exacerbated by the introduction of new or revised guidelines with harder-to-reach water quality targets or design standards. For example, the introduction of the MAC for manganese led to an increase in water quality advisories for many systems. Among others, the new manganese MAC is believed to be the main contributor to the growing number of advisories in the Northern Health region in recent years (Figure 6.3).

Figure 6.4 shows the number of new advisories issued over the past five fiscal years compared to the number of advisories that were resolved over that same period. As in previous years, the number of new advisories exceeded the number of advisories that were resolved. If new advisories are issued due to an infrastructure or treatment deficiency, the matter is unlikely to be resolved quickly by water system operators and owners, as planning and saving for upgrades takes time.

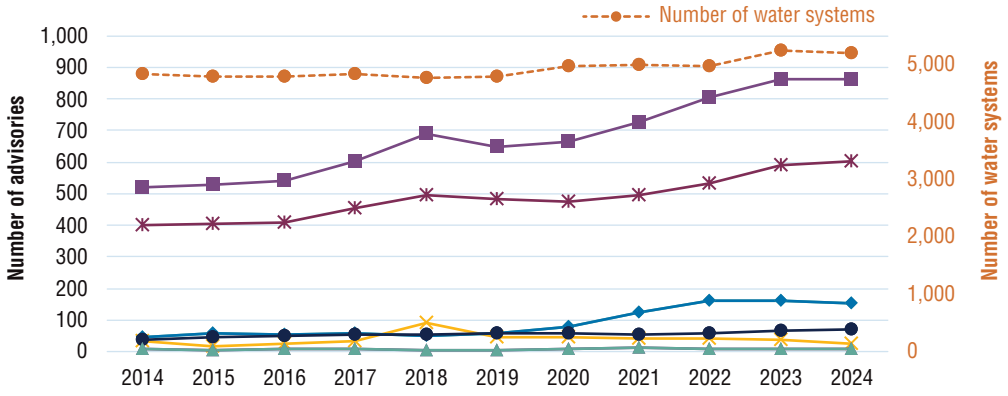
In 2023/24, the number of new advisories increased by 41 per cent from the previous year. Likewise, the number of resolved advisories increased by 36 per cent. These are the highest

Figure 6.2: Number and Percentage of Drinking Water Advisories in Effect on March 31, by Health Authority, BC, 2024



Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

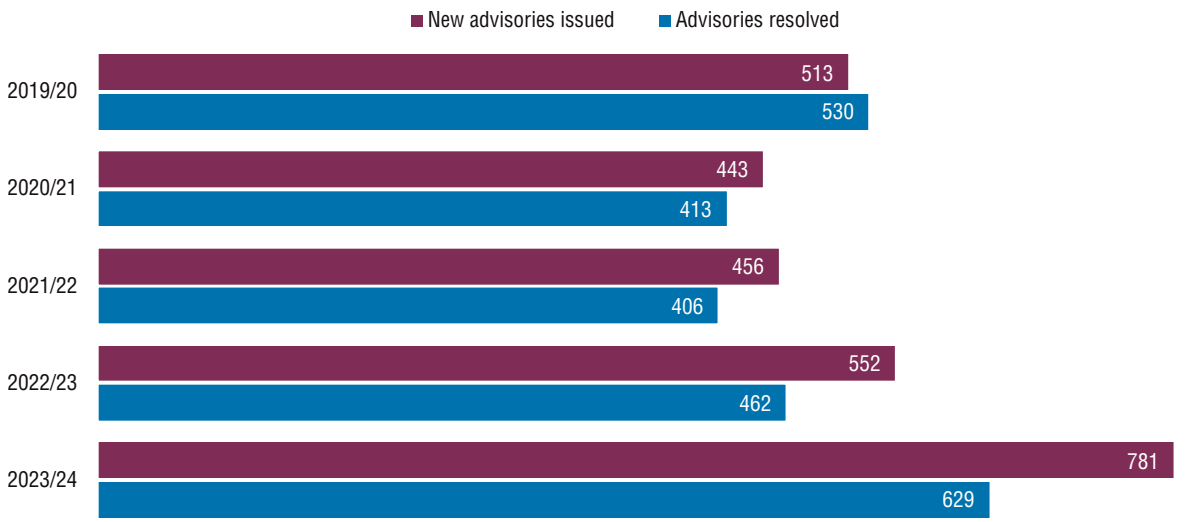
Figure 6.3: Number of Active Drinking Water Advisories on March 31, by Health Authority, BC, 2014 to 2024



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Island Health	32	17	23	34	90	44	44	43	43	38	26
Northern Health	44	56	53	56	48	58	78	124	160	160	151
Vancouver Coastal Health	39	45	49	52	52	56	59	52	57	65	71
Interior Health	399	405	408	454	496	483	473	495	534	591	604
Fraser Health	7	6	8	7	5	6	9	11	9	10	10
Total advisories	521	529	541	603	691	647	663	725	803	864	862
Water systems	4,840	4,800	4,791	4,825	4,773	4,799	4,973	5,001	4,968	5,240	5,209

Note: The number of water systems is included in the figure to compare the number of advisories to the number of water systems in the province.
Source: Regional health authorities, environmental health protection databases; 2013/14–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 6.4: Number of Drinking Water Advisories Issued and Resolved, by Fiscal Year, BC, 2019/20 to 2023/24

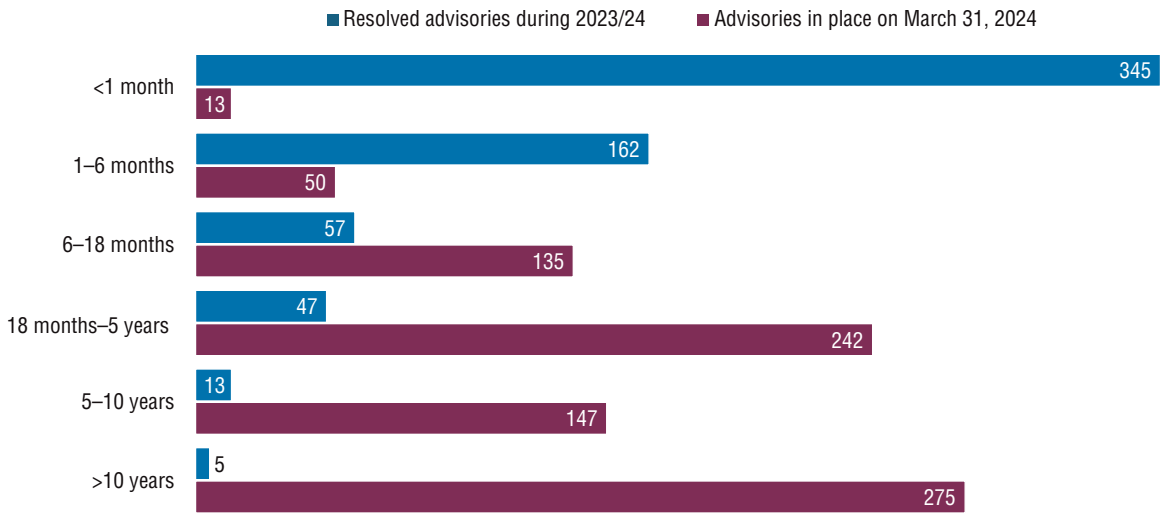


Notes: New advisories issued is a count of all advisories that were issued over the fiscal year. Resolved advisories is a count of all advisories that were rescinded over the same fiscal year. A water system may have more than one advisory issued and rescinded over the year.
Source: Regional health authorities, environmental health protection databases; 2019/20–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

recorded numbers of new and resolved advisories reported by health authorities since 2017/18.[5] It is difficult to attribute these increases to any particular factor; however, as health authority staffing levels continue to stabilize in most regions and those programs catch up on overdue inspections, the number of problems identified that require an advisory may have increased. Extreme climate-related events may have also contributed to the number of new advisories, such as the wildfires in summer 2023 in the northeast and the Okanagan; floods in Pemberton, Lytton, and the Fraser Valley in January 2024; and record drought across the province, particularly in Penticton, Vernon, and Kelowna.

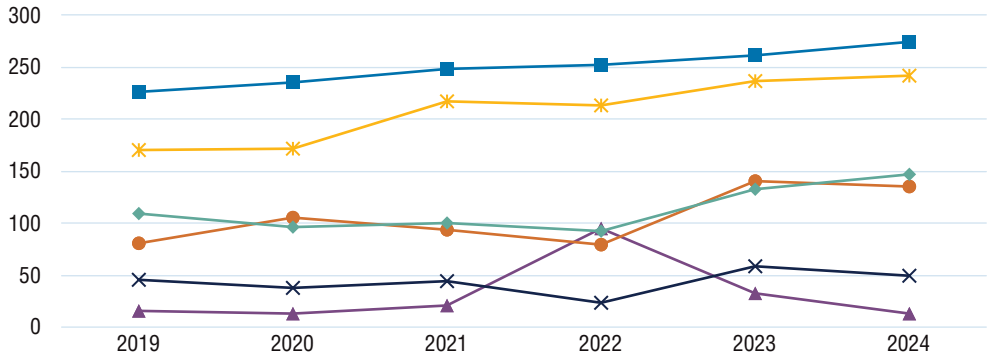
In 2023/24, the pattern of resolved advisories is consistent with previous years in which water suppliers had success in resolving short-term advisories but experienced challenges in resolving long-term advisories (i.e., advisories lasting 18 months or longer). Most of the advisories resolved during 2023/24 were resolved within one month (55 per cent), followed by those that were resolved within six months (26 per cent). Only 10 per cent of the advisories that were resolved had been in place for more than 18 months (Figure 6.5). The inverse pattern also continued, in that most active advisories in place as of March 31 were long-term advisories: 77 per cent of the active advisories were in place for more than 18 months, compared to 73 per cent in 2022/23.[5] Figure 6.6 highlights this growing trend of increasing long-term advisories each year, with the largest group being those in place for more than 10 years.

Figure 6.5: Number and Duration of Drinking Water Advisories in Place and Resolved, BC, 2023/24



Note: "Advisories in place" refers to current advisories as of March 31, whereas "resolved advisories" refers to the number of advisories rescinded over the entire fiscal year.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 6.6: Number of Active Drinking Water Advisories on March 31, by Duration, BC, 2019 to 2024



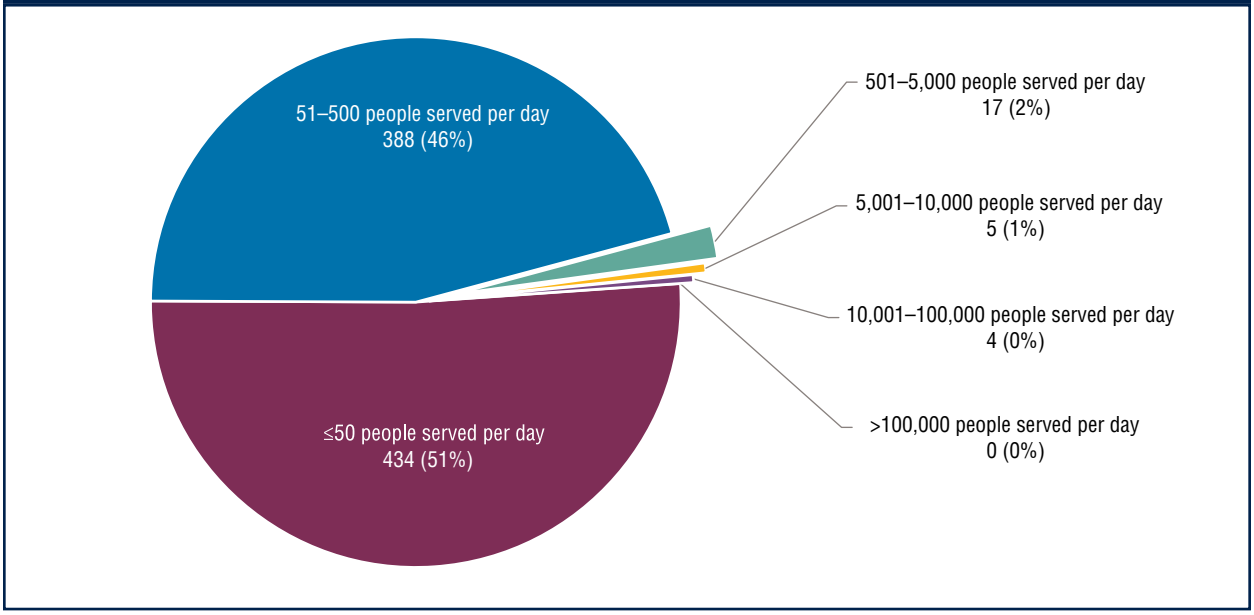
	2019	2020	2021	2022	2023	2024
<1 month	16	13	21	95	32	13
1–6 months	45	38	44	24	59	50
6–18 months	81	106	94	80	141	135
18 months–5 years	170	172	217	214	237	242
5–10 years	109	96	100	92	133	147
>10 years	226	235	249	253	262	275

Source: Regional health authorities, environmental health protection databases; 2018/19–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Small water systems account for 97 per cent of all advisories in place as of March 31, 2024 (Figure 6.7). Over half (51 per cent) of all advisories are on systems serving fewer than 50 people per day. The OPHO also tracks how long these same advisories have been in place using a series of time intervals, broken down by the population size served by the water system (Table 6.2). As shown, when the time interval increases there is a corresponding increase in the percentage of those advisories among small water systems: 98 per cent of advisories in place for five to ten years and 99 per cent of advisories in place for a decade or more.

Of the 26 large water systems on advisory (3 per cent of the total), 17 (2 per cent of the total) belong to the smallest category of large water systems, serving between 501 and 5,000 people, and 12 (70 per cent) of those were in the Interior Health region (Table 6.3). Overall, 19 (73 per cent) of the advisories affecting large water systems were in the Interior Health jurisdiction. Northern Health had six large systems on advisory, and all of these advisories were for water quality.[24] Vancouver Coastal Health had only one large system on water quality advisory on that date, and it had been in place for less than a month.[25] As noted in our 2022/23 annual report, the only large system serving over 10,000 people per day on a long-term advisory lasting over ten years is a standalone water system serving an outdoor festival venue in the Interior.[5]

Figure 6.7: Number and Percentage of Water Systems with an Active Advisory on March 31, by Population Served, BC, 2024



Note: The data in this table exclude 14 water systems from Northern Health that did not have information on the size of the population served.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Table 6.2: Number and Percentage of Active Drinking Water Advisories on March 31, by Size and Duration, BC, 2024

System size	Small water systems			Large water systems					Small and large total
Population served per day	≤50	51–500	Total ≤500	501–5,000	5,001–10,000	10,001–100,000	>100,000	Total >500	
<1 month	3 (23%)	7 (53%)	**10 (77%)**	1 (8%)	2 (15%)	0 (0%)	0 (0%)	**3 (23%)**	**13**
1–6 months	29 (58%)	19 (38%)	**48 (96%)**	1 (2%)	0 (0%)	1 (2%)	0 (0%)	**2 (4%)**	**50**
6–18 months	60 (46%)	66 (50%)	**126 (96%)**	5 (4%)	0 (0%)	0 (0%)	0 (0%)	**5 (4%)**	**131**
18 months–5 years	118 (50%)	106 (45%)	**224 (96%)**	6 (3%)	2 (<1%)	2 (<1%)	0 (0%)	**10 (4%)**	**234**
5–10 years	69 (48%)	73 (50%)	**142 (98%)**	2 (1%)	1 (1%)	0 (0%)	0 (0%)	**3 (2%)**	**145**
>10 years	155 (56%)	117 (43%)	**272 (99%)**	2 (<1%)	0 (0%)	1 (<1%)	0 (0%)	**3 (1%)**	**275**
Total	**434 (51%)**	**388 (46%)**	**822 (97%)**	**17 (2%)**	**5 (1%)**	**4 (0%)**	**0 (0%)**	**26 (3%)**	**848**

Notes: This table excludes 14 water systems for which Northern Health did not have information on the size of the population served. Percentages in this table are calculated using the total number of small and large water systems for each row, representing the number of advisories by size and duration. For example, 56 per cent of advisories that have been in place for over 10 years are small water systems serving fewer than 50 people. Due to rounding, percentages in the small water systems columns may not add up to the total column value.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Table 6.3: Number and Percentage of Active Drinking Water Advisories on March 31, by Population Served and Health Authority, BC, 2024

System size	Small water systems			Large water systems					Small and large total
Population served per day	≤50	51–500	Total ≤500	501–5,000	5,001–10,000	10,001–100,000	>100,000	Total >500	
Island Health	17 (65%)	9 (35%)	**26 (100%)**	0 (0%)	0 (0%)	0 (0%)	0 (0%)	**0 (0%)**	**26**
Northern Health	68 (50%)	63 (46%)	**131 (96%)**	4 (3%)	1 (<1%)	1(<1%)	0 (0%)	**6 (4%)**	**137**
Vancouver Coastal Health	49 (69%)	21 (30%)	**70 (99%)**	1 (1%)	0 (0%)	0 (0%)	0 (0%)	**1 (1%)**	**71**
Interior Health	297 (49%)	288 (48%)	**585 (97%)**	12 (2%)	4 (<1%)	3(<1%)	0 (0%)	**19 (3%)**	**604**
Fraser Health	3 (30%)	7 (70%)	**10 (100%)**	0 (0%)	0 (0%)	0 (0%)	0 (0%)	**0 (0%)**	**10**
Total	**434 (51%)**	**388 (46%)**	**822 (97%)**	**17 (2%)**	**5 (<1%)**	**4 (<1%)**	**0 (0%)**	**26 (3%)**	**848**

Notes: This table excludes 14 water systems for which Northern Health did not have information on the size of the population served. Percentages in this table are calculated using the total number of small and large water systems for each row, representing the number of active advisories by size and health authority. For example, 65 per cent of active advisories at Island Health are small water systems serving fewer than 50 people.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

7. Abatement and Enforcement

Effective regulatory drinking water protection programs require both abatement and enforcement procedures and require that the programs have adequate staffing and resources to effectively carry out those tasks. Abatement involves working collaboratively with system owners and operators to prevent and correct drinking water quality problems. Enforcement involves taking appropriate action when violations of specific requirements occur. Drinking water programs in BC focus primarily on abatement activities, which include regular inspections, education, and engagement.

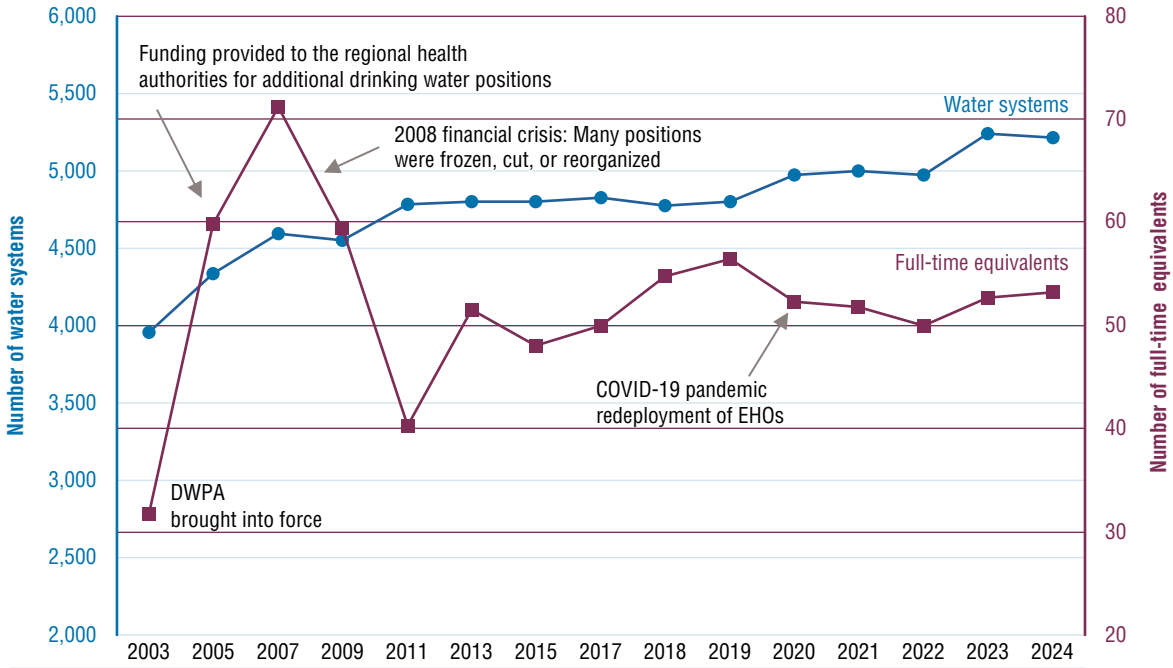
7.1 Drinking Water Program Resources

The OPHO has monitored the number of full-time-equivalent positions working on drinking water at the regional health authorities since 2003 with the Office's first progress report on the Action Plan.[26] The amount of time staff allocate to drinking water is difficult to estimate, as many drinking water program staff are also responsible for other program areas. As a result, the OPHO asks the regional health authorities to estimate the full-time equivalent of staff working in drinking water (Appendix B, Table B.2). For example, if environmental health officer generalists spend two days a week on drinking water, that counts as a 0.4 full-time equivalent. The estimates are difficult for drinking water managers or program specialists at the regional health authorities to determine, and there are reporting inconsistencies. However, the data in Figure 7.1 do show the continuous growth of water systems compared to changes in the number of full-time-equivalent positions dedicated to regulating them.

The 2002 *Action Plan for Safe Drinking Water in British Columbia* called for dedicated funding for new drinking water officer positions.[27] This dedicated funding was provided following the introduction of the DWPA in 2003, and the number of dedicated drinking water positions in the regional health authorities grew for the following four years.[27] The 2008 financial crisis led to hiring freezes, and positions were cut or reorganized. After 2011, staffing levels slowly increased but never returned to the levels seen between 2003/04 and 2006/07. In 2020, during the COVID-19 pandemic, many regional health authorities redeployed environmental health program staff to handle contact tracing and other areas of public health, which reduced staffing levels in drinking water programs. The pandemic also worsened the ongoing vacancies at Northern Health.

In 2024, the number of funded full-time-equivalent positions working in drinking water and the number of water systems were largely unchanged from 2023. This equated to approximately 152 water systems per environmental health officer delegated the duties of a drinking water officer, and 672 water systems per public health engineer.

Figure 7.1: Number of Water Systems and Health Authority Full-time-equivalent Drinking Water Program Positions on March 31, BC, 2003 to 2024



	2003	2005	2007	2009	2011	2013	2015	2017	2018	2019	2020	2021	2022	2023	2024
Number of water systems	3,957	4,332	4,591	4,550	4,779	4,798	4,800	4,825	4,773	4,799	4,973	5,001	4,968	5,240	5,209
Number of full-time equivalents	31.8	59.8	71.1	59.4	40.3	51.5	48.0	50.0	54.8	56.4	52.3	51.8	50.0	52.7	53.2

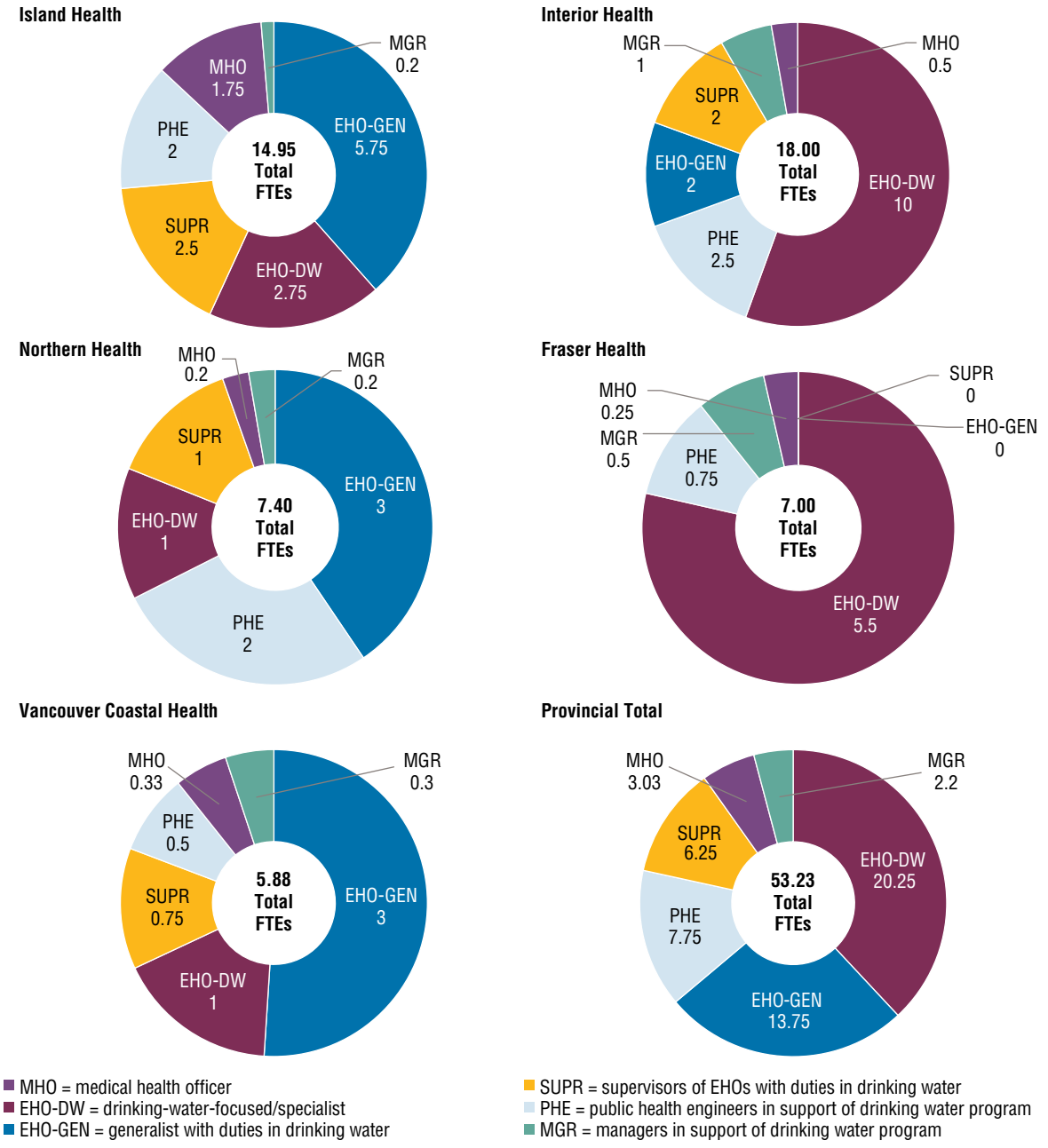
Notes: A full-time equivalent (FTE) is a measure of the amount of time spent by all the people working on drinking water. It does not measure the total number of people working in the program unless they spend 100 per cent of their time on drinking water, as many staff have duties in other areas of health protection. For example, if a generalist environmental health officer spends two days per week working on drinking water, they would be counted as a 0.4 FTE. FTEs for administrative support were not included in these data. Data points reflect the number of FTEs as of March 31 of each year. These numbers represent filled FTE positions and do not capture ongoing vacancies within the programs. Data on the number of FTEs are not available for 2004, 2006, 2008, 2010, 2012, 2014, and 2016. Data provided for earlier years were not consistently gathered on March 31. This table corrected data for 2005 and added data that were available from Provincial Health Officer records for 2003 to be able to show the trajectory since the *Drinking Water Protection Act* came into force.
Sources: Regional health authorities, drinking water program leads, and environmental health protection databases, 2002/03–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

While the data reported on funded positions remain steady, the number of unfilled positions remains high, especially for Northern Health, and this is not reflected in the data. In 2023/24, health authorities reported at least 15 full-time vacancies. Island Health reported two environmental health officer generalist vacancies, Interior Health reported one generalist vacancy, and Northern Health reported that 12 of its 24 environmental health officer positions (50 per cent) were vacant. To address the hiring challenges in the regional health authorities, in 2023/24, the HLTH Health Protection Branch advocated for environmental health officers and drinking water officers to be considered in provincial planning for recruitment and retention initiatives in remote and rural parts of the province.[28]

Regional health authority drinking water program management and service delivery structures vary, primarily because of differences in geography and travel distances, staffing limitations, and the number of water systems in each region. Because of its small geographic size and the smaller number of water systems in its jurisdiction, Fraser Health has a centralized drinking water team under a dedicated manager. In contrast, to manage the many water systems in its sizable jurisdiction, Interior Health uses two regionally dispersed teams of drinking water specialists, one for large water systems and another for small water systems. Environmental health officer generalists at Interior Health are responsible for environmental health water systems, which include standalone water systems such as public health facilities. These are defined by the OPHO as standalone water systems that serve food facilities or licensed care facilities that are permitted under other public health legislation.

As a result of these specialized teams, Fraser and Interior regional health authorities have higher percentages of drinking water specialists compared to the other three health authorities (Figure 7.2). Northern, Island, and Vancouver Coastal Health provide most drinking water inspection services through environmental health officer generalists with the support of one or more specialists. Interior Health has the largest number of full-time equivalents working in drinking water, but it also has the largest number of water systems (Figure 2.3) and drinking water advisories in the province. Northern Health has the lowest number of full-time equivalents despite having the second-largest number of water systems in the province spread over the largest geographic region.

Figure 7.2: Number of Health Authority Full-time-equivalent Drinking Water Program Positions on March 31, by Health Authority, BC, 2024



Notes: A full-time equivalent (FTE) is a measure of the amount of time spent by all the people working on drinking water. It does not measure the total number of people working in the program unless they spend 100 per cent of their time on drinking water, as many staff have duties in other areas of health protection. For example, if a generalist environmental health officer (EHO-GEN) spends two days per week working on drinking water, they would be counted as a 0.4 FTE. The FTEs listed are the number of filled FTEs for the regional health authority drinking water programs and do not reflect any temporary staffing reassignments or other competing responsibilities. The amount of an EHO-GEN's time spent on drinking water is difficult to capture with perfect accuracy; therefore, it is estimated by the regional health authorities. In the *Annual Report of Activities Under the Drinking Water Protection Act in BC, 2022 to 2023,* similar data were presented in Table 13 and were later found to contain an error; subtotals for the EHO categories were incorrect, but totals for the individual regional health authorities and the grand total were correct.
Source: Regional health authorities, drinking water program leads; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

7.2 Drinking Water System Inspections

Drinking water officers have the authority to conduct inspections of water supply systems under the DWPA.[1] The BC *Drinking Water Officers' Guide* recommends that inspection frequency policies be developed based on risk and other relevant factors, such as the probability and impact of an adverse event occurring, the number of users and their demographics, system complexity, and compliance history.[11] Each regional health authority sets out policies for determining the frequency of inspections of drinking water supply systems (Table 7.1).

In 2023/24, the number of water systems receiving an inspection notably increased in the Northern Health and Interior Health regions, with a slight increase in the Fraser Health region (Table 7.2). The percentage of water systems meeting inspection frequency targets increased for all health authorities, in some cases doubling, as it did for Island Health (16 per cent in 2022/23 to 35 per cent in 2023/24) and Northern Health (10.8 per cent in 2022/23 to 20.5 per cent in 2023/24).[5] Vancouver Coastal Health was able to report these data for the first time. These increases may reflect improvements to health authority staffing levels and drinking water officers catching up on inspections following the COVID-19 pandemic.

While the number of system inspections province-wide has improved since 2020/21, health authorities have yet to return to their pre-pandemic inspection rates (Figure 7.3).

Table 7.1: Drinking Water Inspection Frequency Targets, by Health Authority, BC

Health authority	Basis for target	Target breakdown
Island Health	Priority risk assessment	High priority: two inspections per year
		Moderate priority: one inspection per year
		Low priority: one inspection every other year
Northern Health	Water supply system size	Large systems: one inspection per year
		Small systems: one inspection every other year
Vancouver Coastal Health	Priority risk assessment	High priority: two inspections per year
		Medium priority: one inspection per year
		Low priority: one inspection every other year
Interior Health	Focused approach	Large systems: once every two years
		Small systems: comprehensive inspections on a four-year cycle
		Environmental health systems: one inspection per year
Fraser Health	Time period	One routine inspection per year for every water system

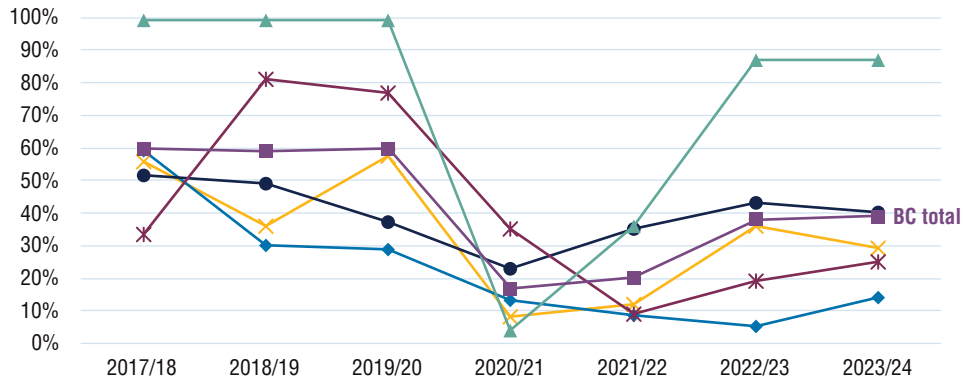
Note: Interior Health defines an environmental health system as a private standalone water system that provides drinking water to a licensed or permitted facility, such as a daycare or a restaurant.
Source: Regional health authorities, drinking water program leads; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Table 7.2: Number and Percentage of Water Systems Inspected and Percentage Meeting Inspection Frequency Targets, by Health Authority, BC, Fiscal Year 2023/24

Regional health authority	Number and percentage of water systems receiving an inspection or assessment	Percentage of water systems meeting inspection frequency targets
Island Health	310 (29.1%)	35.0%
Northern Health	193 (14.1%)	20.5%
Vancouver Coastal Health	152 (40.1%)	45.6%
Interior Health	511 (25.2%)	79.0% large systems
		69.0% small systems
		47.0% environmental health systems
Fraser Health	377 (87.1%)	87.0%

Note: Interior Health defines an environmental health system as a private standalone water system that provides drinking water to a licensed or permitted facility, such as a daycare or a restaurant.
Source: Regional health authorities, environmental health protection databases; 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Figure 7.3: Percentage of Water Systems Receiving an Inspection, by Health Authority and Fiscal Year, BC, 2017/18 to 2023/24



	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Island Health	56.0%	36.0%	57.3%	8.1%	12.0%	36.0%	29.1%
Northern Health	59.0%	30.0%	28.7%	13.4%	8.7%	5.4%	14.1%
Vancouver Coastal Health	51.5%	49.1%	37.2%	22.9%	35.1%	43.0%	40.1%
Interior Health	33.4%	81.0%	77.0%	35.0%	9.0%	19.0%	25.2%
Fraser Health	99.0%	99.0%	99.0%	4.0%	36.0%	87.0%	87.1%
BC Total	59.8%	59.0%	59.8%	16.7%	20.2%	38.1%	39.1%

Notes: This figure charts the percentage of water systems that received at least one inspection in each fiscal year and does not factor in inspection frequency targets. Only Fraser Health has an inspection frequency target of one inspection per year per system; therefore, it is the only health authority with an inspection target of 100 per cent. As such, the Office of the Provincial Health Officer (OPHO) does not expect the other four health authorities to be inspecting 100 per cent of their water systems each year. The OPHO will chart inspection target data once data availability and reliability improve.
Source: Regional health authorities, environmental health protection databases; 2017/18–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

7.3 Investigation and Enforcement Activities

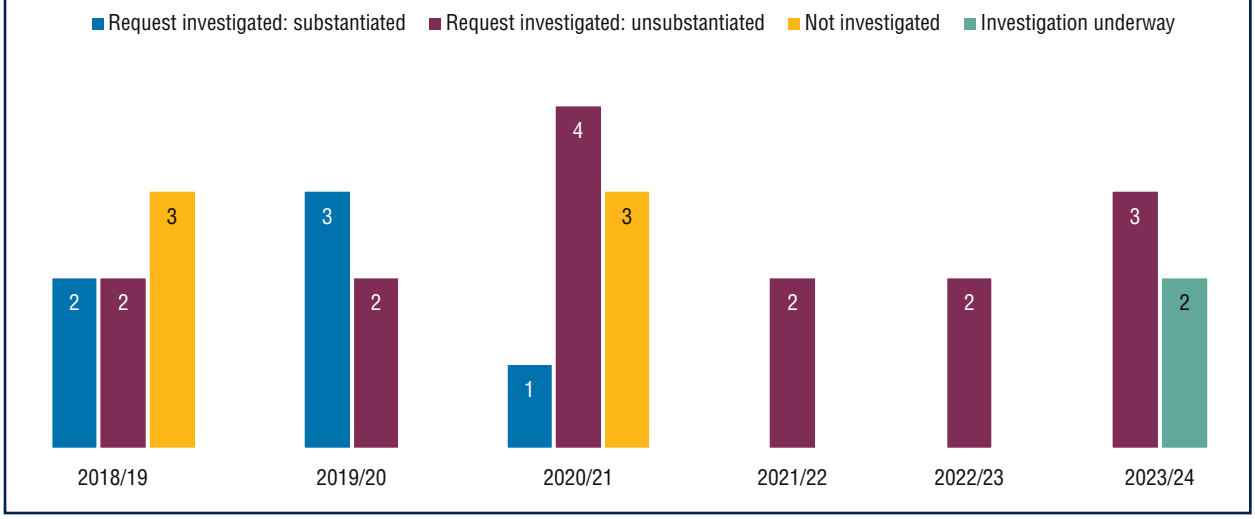
In addition to routine inspection and monitoring work, drinking water officials receive and respond to a variety of complaints and concerns about drinking water quality. Some complaints are received in the form of a request for an investigation under section 29 of the DWPA. Under section 29, any person has a right to request an investigation by a drinking water officer if they think there is a threat to their drinking water source.[1]

In 2023/24, five requests for section 29 investigations were received. Three were investigated and were not substantiated (Figure 7.4), and two investigations were still underway at the time of reporting, both at Island Health. The three unsubstantiated investigations took place in the Island Health, Northern Health, and Vancouver Coastal Health jurisdictions.

Drinking water programs in BC follow a progressive enforcement approach, sometimes referred to as a graduated enforcement or a progressive compliance approach. Progressive enforcement entails the implementation of progressively escalating enforcement actions to eliminate, reduce, or mitigate risk, considering the risks to public health and the context and history of the situation. Drinking water officers have several enforcement tools available under the DWPA, such as issuing tickets, orders, injunctions, and prosecutions.

Injunctions and prosecutions under the DWPA are rare and none occurred during this reporting period. When enforcement actions are required, the most used tools are tickets and orders. Since the pandemic, the use of enforcement tools has declined. During 2023/24, only one section 26 order (i.e., orders respecting contraventions)

Figure 7.4: Number of Section 29 Investigation Requests, by Response and Fiscal Year, BC, 2018/19 to 2023/24



Notes: "Request investigated: substantiated" refers to a request sent to a health authority that had sufficient evidence to proceed with an investigation, and a threat to drinking water was confirmed. "Request investigated: unsubstantiated" refers to requests that were investigated, but that resulted in insufficient evidence of a threat. Requests recorded as "not investigated" had insufficient evidence to begin an investigation or there was a lack of resources. "Investigation underway" indicates that a request for investigation was received, but the investigation has not yet been completed.
Source: Regional health authorities, environmental health protection databases; 2018/19–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

was issued, to a private recreational standalone water system located in the Interior Health region (Figure 7.5).

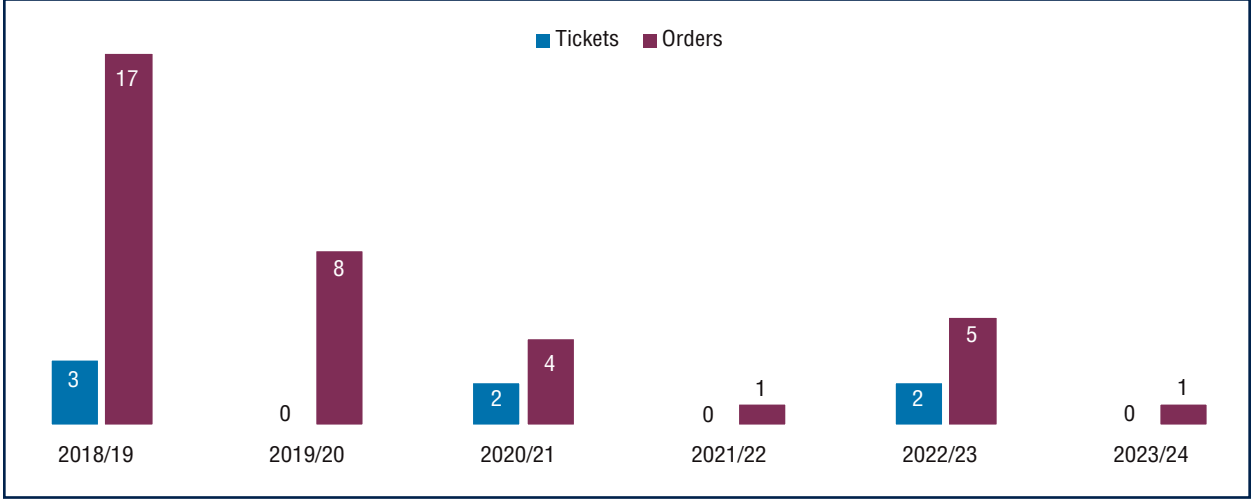
7.4 Actions of the Office of the Provincial Health Officer Under the DWPA

Under section 39.1 of the DWPA, a person who is affected by a decision made by a drinking water officer under specified sections of the Act can request a reconsideration from the original decision maker or a review of the decision from the PHO.[1] At this time, data on the number of reconsiderations requested are not available from the regional health authorities; however, the number is believed to be low. During 2023/24, the OPHO received no requests to review any drinking water officer decisions.

Section 4.2 of the DWPA provides the PHO with oversight responsibilities of government actions as they relate to drinking water and public health. It states that the PHO must report to the Minister on any situation that, in the opinion of the PHO, significantly impedes the protection of public health in relation to drinking water and that arises in relation to the actions or inactions of the government or government agencies.[1] During 2023/24, the OPHO provided no formal reports to the Minister under this section; however, the OPHO frequently engages with partner agencies to resolve matters with affected parties when they arise, using a progressive enforcement approach.

Under Part 5 of the DWPA, the PHO may make a recommendation to the Minister to designate an area by order for the purpose of developing a drinking water protection plan (DWPP) if certain criteria are met under the Act.[1] A DWPP is a legislative tool that may provide special powers to local authorities to regulate activities in areas of concern for community water supply systems. The OPHO made no recommendations to the Minister for a DWPP in 2023/24.

Figure 7.5: Number of Tickets and Orders Issued to Water Suppliers, by Fiscal Year, BC, 2018/19 to 2023/24



Notes: The *Drinking Water Protection Act* includes several enforcement tools for drinking water officers to use, including violation tickets and written and verbal orders. This figure does not include data on what section was used to issue the orders.
Source: Regional health authorities, environmental health protection databases, 2018/19–2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

8. Conclusion

Access to clean, safe, and reliable drinking water is crucial for good health, so it is imperative that systems remain in place to protect the quality and sustainability of water as an essential resource to all people living in British Columbia. The DWPA is one of many pieces of provincial legislation in place to protect source water supplies and ensure that water suppliers provide water that is potable from water systems that are well managed, monitored, and maintained.

The PHO has a responsibility under section 4.1 of the DWPA to report annually on activities carried out under the Act to protect drinking water. This report provides a comprehensive overview of permitting, inspection, monitoring, and enforcement activities conducted under the DWPA during the 2023/24 fiscal year. As the second annual submission to the Minister of Water, Land and Resource Stewardship using an updated reporting framework, it highlights progress and challenges in protecting drinking water in BC.

Across BC there are many different sizes of water systems, ranging from as small as two neighbours sharing a well to large urban systems serving several connected municipalities. There are also many different types of water systems serving a range of different populations and facilities. Some water systems are owned and operated by a form of local government, while others may be owned and operated by a private utility, business, individual, or group of individuals. These systems all rely on a variety of different water sources with different strengths, risks, and vulnerabilities. This report provides an update on the number of water systems in BC with regional data on the different types, sizes, and sources used. This information assists the OPHO in the monitoring and oversight of drinking water by helping identify which water systems have the greatest inherent vulnerabilities and compliance challenges.

Like past OPHO drinking water reports, the data presented here highlight the inherent vulnerabilities and ongoing compliance challenges that small water suppliers face when it comes to meeting their obligations under the Act, compared to larger local government-owned and -operated water suppliers. Obligations for which large water suppliers show higher rates of compliance include meeting their water monitoring frequency targets, conducting emergency response and contingency planning, and meeting operator qualification requirements.

Inspection activity remained relatively stable across the province during fiscal year 2023/24, though the percentage of systems inspected has yet to return to pre-pandemic levels. Workforce shortages continued to affect regional health authorities in 2023/24, with Northern Health experiencing the highest number of unfilled roles within their health protection program for drinking water. These staffing gaps have workload implications that

have been shown to affect the reach of inspection programs in those regions with shortages.

Drinking water officers use a progressive enforcement approach when working with water suppliers. While they have several enforcement tools available to them under the DWPA, such tools are used sparingly; in 2023/24, only one order was issued to a drinking water supplier. Instead, drinking water officers typically seek compliance from water suppliers with limited capacity by building trust and cooperation through education and advocacy.

When a health risk is identified with a water supply, that risk is managed through a drinking water advisory until the necessary improvements or changes to the water system can be made. The number of drinking water advisories, which has been steadily increasing in recent years, plateaued this fiscal year with 17 per cent of systems under advisory on March 31, 2024. While climate-related events may be influencing the number of advisories, other factors are also contributing. The large number of vulnerable small water systems across the province continues to be the biggest driver of the ongoing high advisory statistics, with 97 per cent of advisories in place for systems serving less than 500 people per day.

Efforts to improve drinking water data collection and data management from source to tap continued this year, particularly with HLTH's ongoing progress with the development of a provincial data system for health protection programs (i.e., Public Health Operations and Compliance System) and Ministry of Water, Land and Resource Stewardship's development of a source water data set. These data initiatives aim to revolutionize the data on drinking water systems and sources available to the public, water suppliers, researchers, and provincial policymakers. It will also vastly improve data availability and reliability for future OPHO drinking water reports.

While this report offers no new recommendations, the findings herein reinforce the 20 current recommendations outlined in the last OPHO progress report, *Clean, Safe, and Reliable Drinking Water: An Update on Drinking Water Protection in BC, 2017/18–2021/22*.[2] Key priorities from that report include

- Developing a provincial source-to-tap strategy (recommendation 1) that includes a small water systems strategy (recommendation 12).
- Completing an interoperable data system for drinking water (recommendation 10).
- Addressing emergency response planning and climate resilience for drinking water (recommendations 5 and 6).
- Ensuring that drinking water protection programs are adequately resourced (recommendation 15).
- Reviewing and modernizing the DWPA and source water protection tools (recommendations 3, 4, and 16).[2]

Sustained commitment to these priorities from the agencies named as leads in that report is essential to ensure that all people living in BC have access to clean, safe, and reliable drinking water. An update on these recommendations will be provided in the OPHO's next progress report. OPHO progress reports are released every few years in addition to the annual activities reports such as this one.

Appendix A. Water System Type Definitions

Table A.1: Water System Categories, by Type of Community Water System

Water system type		Water system sub-type	
Local government water system	Any community water system that falls under the *Local Government Act* (LGA). This includes municipalities, regional districts, and improvement districts. These water systems have governance and financial requirements provided by the LGA and the *Community Charter*, with oversight provided by the Ministry of Housing and Municipal Affairs (HMA).	**Municipal**	Community water system owned or operated by a municipality.
		Regional district	Community water system owned and operated by a regional district. Regional districts are the local government for unincorporated areas and may provide governance and services such as drinking water to regions as a whole, such as Metro Vancouver.
		Improvement district	Community water system owned and operated by an improvement district. Improvement districts—which include irrigation and waterworks districts—are independent public corporations that provide limited services, such as drinking water or fire protection, in rural (unincorporated) areas of the province. They may exist within the boundaries of a municipality or regional district but operate independently.[k]

[k] Although improvement districts are incorporated under the *Local Government Act*, they are not considered an official form of local government in the same way as municipalities or regional districts, nor are they eligible for local government infrastructure improvement funding available through the Ministry of Housing and Municipal Affairs. Information on improvement districts and other government bodies can be found at https://www2.gov.bc.ca/gov/content/governments/local-governments/improvement-districts-governance-bodies and in the Provincial Health Officer's report, *Clean, Safe, and Reliable Drinking Water: An Update on Drinking Water Protection in BC, 2017/18–2021/22*.[2]

Table A.1: Water System Categories, by Type of Community Water System (Cont...)

Water system type		Water system sub-type	
Development incorporated by the Comptroller of Water Rights	Any community water system incorporated by the Comptroller of Water Rights at the Ministry of Water, Land, and Resource Stewardship (WLRS).	**Utility**	Water system that is built by a developer in an area where no existing water service is available. A utility provides water, in exchange for compensation, to five or more people or to a corporate facility (such as a ski resort). Utilities are regulated under the *Water Utility Act* and the *Utilities Commissions Act* and may be set up under any of several different business or ownership models, including a strata corporation, a society, a corporation, an individual, or a partnership. The Comptroller of Water Rights and the Utility Regulation section of WLRS provide oversight on governance and financing.
		Water users' community	Specific type of community water system that draws its system of governance and incorporation from the *Water Users' Communities Act* (formerly Part 3 of the *Water Act*). A water users' community is a collection of six or more water license holders who collectively create and maintain a system to store or deliver water to their respective places of use. The Comptroller of Water Rights incorporates and names water users' communities.

Table A.1: Water System Categories, by Type of Community Water System (Cont...)

Water system type		Water system sub-type	
Independent	Residential developments that have no administrative or financial oversight from the Comptroller of Water Rights or HMA. Independents are not regulated as a utility, a water users' community, an improvement district, a regional district, or a municipality. Examples include subdivisions, mobile home parks, shared interest properties, apartment buildings, and shared systems between neighbours.	**Strata corporation**	Community water system that is owned and operated by a strata corporation, where the governance of the water system falls under the *Strata Property Act*, not the *Water Utility Act*. Most strata developments are built as utilities, but once most of the lots are sold, the Comptroller may approve the transfer of ownership from the developer to the strata corporation and exempt the strata from the *Water Utility Act* to avoid regulatory duplication.
		Private corporation or registered business	Community water system that is owned and operated by a private company run as a corporation, partnership, or sole proprietorship but does not meet the definition of a utility.
		Private owner (Individual)	Water supply system owned and operated by an individual property owner serving water to tenants or neighbouring properties for domestic use. The owner of these systems has no formal business model and is not incorporated or registered as a company under any Act. The users of the water are not co-owners of the system.
		Joint (user) ownership—incorporated	Community water system that is jointly owned and managed by the owners of the properties or residences the water system serves. The owners or users of these systems have incorporated to run their water system as a society or cooperative association. Such a jointly owned water system is not a strata and is not regulated as a utility or a water users' community.
		Joint (user) ownership—"good neighbour system"	Community water system that is jointly owned by the users of the system. Such a system is unincorporated and has no formalized business model or governance structure for decision-making or operations. This is commonly known as a "good neighbour water system" and may have some form of joint works agreement or easement.

Source: Prepared by the Office of the Provincial Health Officer. Adapted from Table 2.3 from *Clean, Safe, and Reliable Drinking Water: An Update on Drinking Water Protection in BC, 2017/18–2021/22;* 2024.

Table A.2: Water System Categories, by Type of Standalone Facility Water System

Industrial or commercial facility	**Work camp:** Industrial or commercial premises in which structures used for employee living quarters are provided. These water supply systems are also regulated by the Industrial Camps Regulation under the *Public Health Act*.
	Work site: Industrial or commercial work site that supplies drinking water for domestic use to workers or to the public from its own water supply system.
Recreational facility	**Publicly owned:** Recreational area, tourist attraction, or accommodations with a water supply system that provides domestic water to visitors and is owned by a provincial, federal, or local government. Examples include provincial parks, national parks, city parks, recreational areas, campgrounds, picnic grounds, government-owned tourist attractions, and rest areas.
	Privately owned: Recreational and tourist facilities and accommodations owned by non-government entities. Examples include privately owned hotels, motels, inns, bed and breakfasts, resorts, camps, campgrounds, RV parks, water parks, golf courses, ski hills, racetracks, fairgrounds, and tourist attractions.
Public health facility	Facility that is regulated by public health officials under the *Public Health Act, Food Safety Act*, or *Community Care and Assisted Living Act*. This includes food facilities (regulated through environmental health programs) and community care facilities (regulated through licensing programs) that provide their own water supply and therefore are subject to the *Drinking Water Protection Act* (DWPA) as water suppliers. Health care facilities designated under the *Hospital Act* that provide their own water supply are also included.
School	Educational institution (public or independent) that provides kindergarten to Grade 12 education and uses water from a private source. The school district or the independent school is the water supplier under the DWPA.
Civic or community facility or institution	Building that is used to provide a service or public benefit. Examples include libraries, post offices, jails, community centres, town halls, event centres, churches, post-secondary institutions, and vocational training centres. Facilities that rely on their own private water supply are considered water suppliers under the DWPA. These civic facilities may be publicly or privately owned.

Source: Prepared by the Office of the Provincial Health Officer. Adapted from Table 2.4 from *Clean, Safe, and Reliable Drinking Water: An Update on Drinking Water Protection in BC, 2017/18–2021/22;* 2024.

Appendix B. Additional Data Tables

Table B.1: Number of Water System Construction Permits by Health Authority, BC, Fiscal Year 2023/24

Regional health authority	Improvements or upgrades	Extensions	New systems	Construction permit waivers	Total
Island Health	109	136	4	70	**319**
Northern Health	37	15	12	10	**74**
Vancouver Coastal Health	35	16	5	0	**56**
Interior Health	145	106	3	12	**266**
Fraser Health	43	41	1	4	**89**
Total	**369**	**314**	**25**	**96**	**804**

Source: Regional health authorities, environmental health protection databases, 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

Table B.2: Number of Full-time-equivalent Drinking Water Program Positions on March 31, by Health Authority and Position, BC, 2024

Regional health authority	Medical health officers	Environmental health officers (EHOs)			Public health engineers in support of drinking water program	Managers in support of drinking water program	Total
		Drinking water-focused specialists	Generalists with duties in drinking water	Supervisors of EHOs with duties in drinking water			
Island Health	1.75	2.75	5.75	2.50	2.00	0.20	**14.95**
Northern Health	0.20	1.00	3.00	1.00	2.00	0.20	**7.40**
Vancouver Coastal Health	0.33	1.00	3.00	0.75	0.50	0.30	**5.88**
Interior Health	0.50	10.00	2.00	2.00	2.50	1.00	**18.00**
Fraser Health	0.25	5.50	0.00	0.00	0.75	0.50	**7.00**
Total	**3.03**	**20.25**	**13.75**	**6.25**	**7.75**	**2.20**	**53.23**

Notes: A full-time equivalent (FTE) is a measure of the amount of time spent by all the people working on drinking water. It does not measure the total number of people working in the program unless they spend 100 per cent of their time on drinking water, as many staff have duties in other areas of health protection. For example, if a generalist EHO spends two days per week working on drinking water, they would be counted as a 0.4 FTE. These counts do not include administrative staff that support the drinking water programs. The FTEs listed are the number of filled FTEs for the regional health authority drinking water programs and do not reflect any temporary staffing reassignments or other competing responsibilities. The amount of an EHO's time spent on drinking water is difficult to capture with perfect accuracy; therefore, it is estimated by the regional health authorities. In the *Annual Report of Activities Under the Drinking Water Protection Act in BC, 2022 to 2023,* similar data were presented in Table 13 and were later found to contain an error; subtotals for the EHO categories were incorrect, but totals for the individual regional health authorities and the grand total were correct.
Source: Regional health authorities, drinking water program leads, 2023/24. Prepared by the Office of the Provincial Health Officer, May 2025.

References

1 Drinking Water Protection Act [SBC 2001, c.9] [statute on the internet]; [cited 2025 May 2]. https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/00_01009_01.

2 BC Office of the Provincial Health Officer. Clean, safe, and reliable drinking water: an update on drinking water protection in BC, 2017/18–2021/22. Victoria, BC: BC Office of the Provincial Health Officer; 2022 [cited 2025 May 2]. https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/drinking-water-reports/drinkingwaterreportupdateweb.pdf.

3 Hedgerow Software Ltd. Hedgerow Regulatory Compliance Management Platform ("Hedgehog") [internet]. Calgary, AB: Hedgerow Software Ltd. https://www.hedgerowsoftware.com/.

4 HS GovTech Solutions Inc. HS GovTech ("HealthSpace") [internet]. Vancouver, BC: HS GovTech Solutions Inc. https://hsgovtech.com/environmental-health-2.

5 BC Office of the Provincial Health Officer. Annual report of activities under the Drinking Water Protection Act in BC, 2022 to 2023. Victoria, BC: BC Office of the Provincial Health Officer; 2023 [cited 2025 May 2]. https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/reports-publications/drinking-water-reports/pho-drinking-water-annual-report-2022-23.pdf.

6 Drinking Water Protection Regulation [B.C. Reg. 200/2003] [statute on the internet]; [cited 2025 May 2]. https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/200_2003.

7 BC Ministry of Health. Guidance document for determining groundwater at risk of containing pathogens (GARP). Version 3. Victoria, BC: BC Ministry of Health; 2017 [cited 2025 May 2]. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/how-drinking-water-is-protected-in-bc/garp_assessment_oct_2017.pdf.

8 Lettrari, H. Personal communication. BC Ministry of Water, Land and Resource Stewardship; 2025 Aug 5.

9 BC Ministry of Health. Guide for communicating with water users. Victoria, BC: BC Ministry of Health; 2023 [cited 2025 May 2]. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/documents/guide_for_communicating_with_water_users.pdf.

10 BC Ministry of Health. Guide to emergency response and contingency plans for water supply systems. Victoria, BC: BC Ministry of Health; 2023 [cited 2025 May 2]. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/documents/guide_to_emergency_response_and_contingency_plans_for_water_supply_systems.pdf.

11 BC Ministry of Health. Drinking water officers' guide. Consolidated version. Victoria, BC: BC Ministry of Health; 2024 [cited 2025 May 2]. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/how-drinking-water-is-protected-in-bc/drinking_water_officers_guide_-_consolidated.pdf.

12 Sowa, S. Personal communication. Island Health Authority; 2025 Sep 11.

13 Environmental Operators Certification Program. EOCP facility classification. [internet]. Burnaby, BC: Environmental Operators Certification Program; [cited 2025 May 2]. https://eocp.ca/facilities/facility-classification/.

14 Luttrell, G. Personal communication. Island Health Authority; 2025 Jul 28.

15 Government of Canada. Guidelines for Canadian drinking water quality – summary tables. Ottawa, ON: Government of Canada; 2024 [cited 2025 May 2]. https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html.

16 Government of Canada. Canadian drinking water guidelines. Ottawa, ON: Government of Canada; 2022 [cited 2025 May 2]. https://www.canada.ca/en/health-canada/services/environmental-workplace-health/water-quality/drinking-water/canadian-drinking-water-guidelines.html.

17 Government of Canada. Guidelines for Canadian drinking water quality: Guideline technical document – antimony. Ottawa, ON: Government of Canada; 2024 [cited 2025 May 2]. https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-guideline-technical-document-antimony.html.

18 Government of Canada. Guidelines for Canadian drinking water quality: Guideline technical document – total coliforms. Ottawa, ON: Government of Canada; 2020 [cited 2025 Sep 11]. https://www.canada.ca/content/dam/hc-sc/documents/services/healthy-living/water-coliforms-coliformes-eau/water-coliforms-coliformes-eau-eng.pdf.

19 Government of Canada. Guidelines for Canadian drinking water quality: Guideline technical document – *Escherichia coli*. Ottawa, ON: Government of Canada; 2020 [cited 2025 Sep 11]. https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-guideline-technical-document-escherichia-coli.html.

20 Order in Council 103/2024 [statute on the internet]; [cited 2025 May 2]. https://www.bclaws.gov.bc.ca/civix/document/id/oic/oic_cur/0103_2024.

21 Lee, C. Personal communication. Enhanced Water Quality Assurance; 2025 Jun 2.

22 Tchao, C. Personal communication. BCCDC Public Health Laboratory; 2025 April 8.

23 Norlin, I. Personal communication. Interior Health Authority; 2025 Jun 24.

24 Green, J. Personal communication. Northern Health Authority; 2024 Jun 25.

25 Muirhead, P. Personal communication. Vancouver Coastal Health Authority; 2024 Oct 1.

26 BC Office of the Provincial Health Officer. Progress on the action plan for safe drinking water in British Columbia (2007). Victoria, BC: BC Office of the Provincial Health Officer; 2007 [cited 2025 May 2]. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/waterreport.pdf.

27 BC Ministry of Health Planning, BC Ministry of Health Services. Action plan for safe drinking water in British Columbia. Victoria, BC: BC Ministry of Health Planning, BC Ministry of Health Services; 2002 [cited 2024 Aug 2]. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/safe_drinking_printcopy.pdf.

28 Ospan, A. Personal communication. BC Ministry of Health; 2025 Jun 16.

Office of the
Provincial Health Officer

www.health.gov.bc.ca/pho/reports/drinkingwater