Annual Report for 2021-22

State of Drinking Water Quality in Saskatchewan

Water Security Agency

Science and Licensing

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Saskatchewan

Contents

Letters of Transmittal

The Honourable Jeremy Cockrill

Minister Responsible for Water Security Agency

Office of the Lieutenant Governor of Saskatchewan

May It Please Your Honour:

I respectfully submit the Annual Report on the State of Drinking Water Quality in Saskatchewan for the fiscal year ending March 31, 2022.

Respectfully submitted,

Jeremy Cockrill
Minister Responsible for Water Security Agency

Shawn Jaques
Interim President and CEO

Water Security Agency

Dear Minster:

I have the honour of submitting the Annual Report on the State of Drinking Water Quality in Saskatchewan for the fiscal year ending March 31, 2022. I acknowledge responsibility for this 2021-22 report and declare the information contained within is accurate, complete, and reliable.

Respectfully submitted,

Shawn Jaques
Interim President and Chief Executive Officer
Water Security Agency

About the Report

This is the 20th Annual Report on the Status of Drinking Water in Saskatchewan for the fiscal year ending on March 31, 2022. The provision of safe drinking water is a priority to ensure the protection of human health and prosperity of Saskatchewan's citizens. The State of Drinking Water Quality Report is a legislated requirement under *The Environmental Management and Protection Act, 2010* to demonstrate the ongoing commitment of the Government of Saskatchewan to ensure safe drinking water is available to Saskatchewan residents.

In 2001, a waterborne disease outbreak in North Battleford, Saskatchewan, resulted in the review and update of the provincial approach to safe drinking water. The investigation and recommendations provided in the Laing Report[1] resulted in plans and actions to improve drinking water in Saskatchewan, including legislated annual reporting on the status of drinking water quality in Saskatchewan, the *2002 Safe Drinking Water Strategy*, and the *25 Year Water Security Plan*.

Previous annual reports have detailed the progress of government, municipalities and non-government entities in the shared goal of establishing and maintaining safe drinking water in Saskatchewan. While we recognize these collective achievements, the 2021-22 annual report has been updated to align with our *2022-2026 Strategic Plan* goals to increase transparency and service to clients as it relates to the ongoing improvement of drinking water and wastewater management in Saskatchewan.

In collaboration with our stakeholders and partners, the Water Security Agency has reviewed and updated the content of the report to facilitate decision-making by water managers, improve public access to drinking water information, and ensure timely and accurate reporting. The report headings follow the framework of the **multi-barrier approach to safe drinking water** which is the basis of an effective public water supply as it provides several 'barriers' to contamination from source to tap[2].

The multi-barrier approach identifies five barriers associated with safe drinking water systems including source protection, treatment, distribution, monitoring programs and response to adverse conditions. In addition, this report includes sections on public perception and trust associated with regulated drinking water in Saskatchewan, and investment as it relates to drinking water and wastewater infrastructure and management.

The report will provide the following information under each drinking water management barrier/section.

- A clear and concise description of the drinking water management barrier/section and why it is important to ensure safe drinking water.
- Descriptions and outcomes associated with each indicator supporting the barrier/section.
- The impact of the indicator(s) status or trend as it relates to the barrier/section and any actions or strategies intended to improve or maintain the condition.

[1] North Battleford Inquiry (Sask.), Laing, R.D., & Saskatchewan. (2002) Report of the Commission of Inquiry. Regina: Saskatchewan Ministry of Justice.
[2] Walkerton Inquiry (Ont.), O'Connor, D.R., & Ontario. (2002). Report of the Walkerton Inquiry. Toronto: Ontario Ministry of the Attorney General.

Introduction

In Saskatchewan, drinking water sources include both groundwater wells and surface waters, such as rivers and lakes. In 2021-22, approximately 81 per cent (960,400) of Saskatchewan residents accessed public drinking water systems regulated by the Water Security Agency (WSA)[3]. An estimated 17 per cent (201,156) of residents in rural and remote areas access privately-sourced water (e.g., domestic wells). The remainder of the population is served by drinking water systems on First Nations or by semi-public systems that serve small or infrequent populations in rural and remote locations.

The quality of drinking water, the condition of systems that produce it and the protection of source waters are essential to public health, the environment and economic growth in Saskatchewan. WSA leads the ongoing planning, regulation and reporting associated with drinking water governance and management in Saskatchewan. Municipalities or private owners of water and wastewater facilities are responsible for the facilities and their operation according to *The Waterworks and Sewage Works Regulations.*

Several government departments contribute to the governance, protection and provision of drinking water supplies and source water protection including the Ministry of Health, the Saskatchewan Health Authority, the Ministry of Government Relations, SaskWater, the Ministry of Environment and the Ministry of Agriculture. Enforcement is provided by the Provincial Protective Services Branch within the Ministry of Corrections, Policing and Public Safety. Partners that provide key services or funding include the federal and provincial governments, the Saskatchewan Urban Municipalities Association, the Saskatchewan Association of Rural Municipalities, Saskatchewan Water and Wastewater Association (SWWA) and the Saskatchewan Operator Certification Board (OCB).

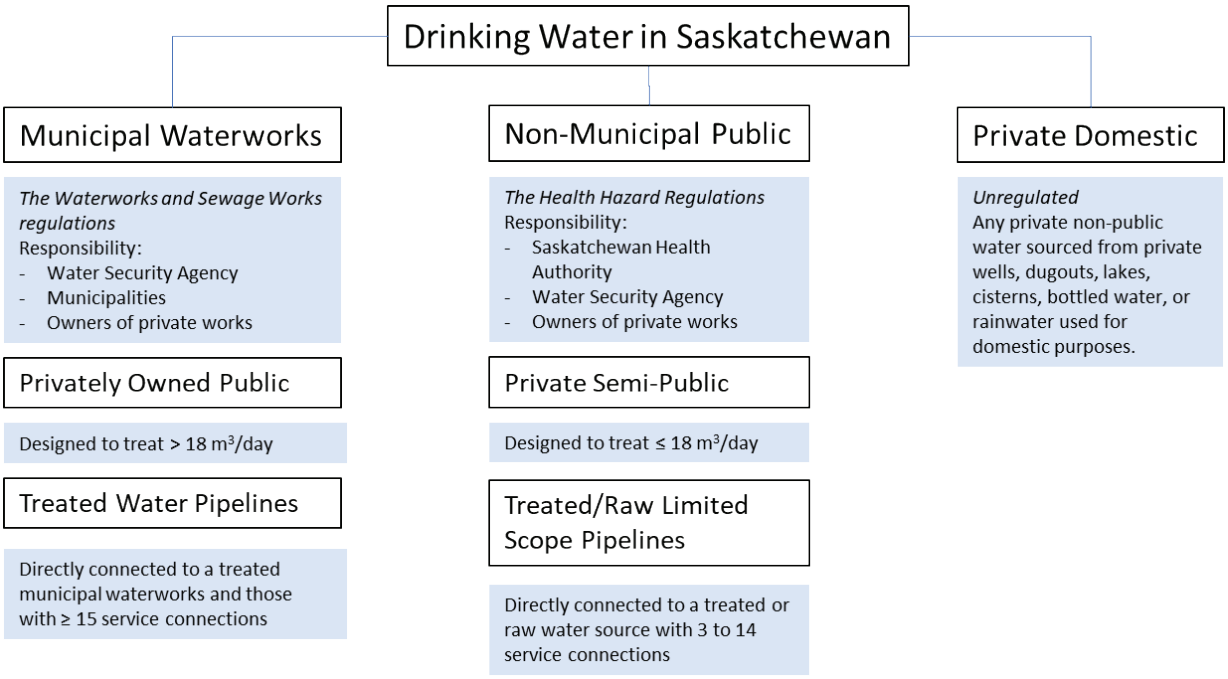
[3] Statistics Canada. Q1 2022 Population of Saskatchewan. Table 17-10-0009-01 Population estimates, quarterly

Drinking Water Governance in Saskatchewan

Drinking water management in Saskatchewan is legislated under *The Environmental Management and Protection Act, 2010,* and *The Waterworks and Sewage Works Regulations* and *The Health Hazard Regulations*. WSA and the Saskatchewan Health Authority (SHA) are the primary government agency and ministry responsible for the programs and activities associated with drinking water regulation in the province.

QUICK FACTS

Landowners and residents accessing private domestic water sources are responsible for the safety and management of their own drinking water in Saskatchewan. For more information: Saskatchewan Guide to Private Well and Water Management



Progress and Challenges in 2021-22

Safe drinking water management systems include the legislation, policies, administration and procedures/protocols carried out to ensure safe drinking water from source to tap[4]. Constantly working to identify and improve the system is an important aspect of effective drinking water management.

In February 2022, the Water Security Agency contributed to the Ministry of Health's review of *The Health Hazard Regulations* and is currently assessing *The Waterworks and Sewage Works Regulations* to facilitate amendments planned for 2025. Resource guidelines for legal sampling and liquid domestic waste collection and disposal were updated in collaboration with the Ministry of Environment. To ensure effective communication and regulatory consistency, the Water Security Agency and Saskatchewan Health Authority meet annually to discuss regulated systems and communicate updates and information.

In 2021-22, information on water and wastewater management was moved from SaskH2O.ca to the Government of Saskatchewan site saskatchewan.ca. The new location for information continues to provide access to drinking water advisories and warnings, water quality and operator resources. Provincial enforcement services for drinking and wastewater were also relocated to the Ministry of Corrections, Policing, and Public Safety

Drinking water management remains a significant challenge for smaller communities due to financial limitations that can impact their ability to meet drinking water standards, or difficulty acquiring or maintaining certified operators to run water and wastewater facilities. WSA's environmental project officers (EPOs) continue to work closely with these communities to minimize risk to human health and the environment.

In addition, the agency strives to limit present and future risks associated with wastewater effluent by approving and permitting wastewater works, reviewing downstream use impact studies and setting effluent limits. WSA also works with Health Canada and Canadian provinces and territories to identify and study new or emerging chemicals of concern. The agency continues to participate in the Ministry of Environment's Compliance Audit Program, which conducted four audits associated with water and wastewater programming in 2021-22.

The Water Security Agency's communication and association with the OCB (saskocb.ca) and SWWA (swwa.ca) supports the ongoing development and delivery of drinking water and wastewater programs delivered by these organizations, including operator certification, ongoing education and networking to promote professional growth in the water industry.

For more information on the roles and responsibilities of the Water Security Agency, see wsask.ca.

[4] Bereskie, T. *et al*. 2018. Drinking-water management in Canadian provinces and territories: a review and comparison of management approaches for ensuring safe drinking water. *Policy*. 20(3): 565-596

Multi-Barrier Approach to Safe Drinking Water Management

This report focuses on the state of drinking water from human consumptive water works as they provide the primary source of drinking water in Saskatchewan and represent the performance of our drinking water management system from source to tap.

In 2021-22, there were 620 human consumptive water treatment and distribution systems regulated by the Water Security Agency, including municipal and private water treatment plants, and treated water pipelines.

For small communities with low or declining populations or in situations where funding for water treatment is limited, facilities may be permitted and regulated to provide water for hygienic use. In these instances, the water is *only* used for bathing, showering and personal hygiene. Owners of hygienic systems are required to ensure their customers are aware the water is not fit to consume. There are 147 regulated hygienic systems in Saskatchewan. For communities with hygienic systems, they are required to provide their customers with access to a source of potable water (e.g., central system, bottled water for purchase or emergency circumstances).

Human consumptive use is water used for drinking, cooking, food preparation and brushing teeth.

Hygienic use is water that can only be used for bathing and showering. Hygienic water quality may not meet the standards for human consumption but are still required to provide water to customers that is free of bacterial contamination. Hygienic systems are not required to have a certified water treatment operator.

QUICK FACTS

Saskatchewan residents use an average of 332 litres of water per person per day. For more information on reducing water use see Make Every Drop Count - A Guide to Home Water Conservation.

Regulated systems include municipal water treatment facilities and their distribution systems, pipelines and large private or government owned waterworks regulated by the Water Security Agency.

There are 42 limited scope pipelines that distribute water for human consumptive or hygienic purposes servicing a minimum of three but fewer than 15 service connections.

WSA operates 72 dams in Saskatchewan to ensure a sustainable and reliable quantity of water for municipal, industrial and agricultural use.

Distribution system is the portion of a waterworks that carries water for human consumptive or hygienic use to a service connection (e.g,. a household or business). Distribution systems are regulated and inspected to ensure water quality is maintained for its intended purpose.

Source Water Protection

Source water protection is the first barrier in an effective drinking water management system. Protection of drinking water sources helps prevent and reduce contaminants, which in turn, reduces treatment costs. Monitoring the environment and regulating wastewater systems is one of the primary ways to protect current and future drinking water sources, aquatic life and the environment.

In Saskatchewan, approximately 50 to 60 per cent of the population is served by water treatment operations dependent on a surface water source. Source waters are protected through:

- inspecting wastewater collection and treatment processes;
- regulating liquid domestic waste transport and disposal;
- applying effluent standards and monitoring requirements to operation permits;
- assessing surface water quality in primary rivers; and,
- establishing municipal source water protection bylaws.

Wastewater Treatment Inspection Compliance

In 2021-22, 613 wastewater operations or collection systems associated with lagoon or mechanical wastewater treatment were permitted by the Water Security Agency. Ninety-three per cent of wastewater treatment facilities employed a certified operator in 2021-22.

Inspections ensure compliance with *The Waterworks and Sewage Works Regulations* and provide timely feedback on wastewater management. A total of 616 inspections were conducted in 2021-22 with 55 per cent of inspections found to be fully compliant. Seventy-four per cent of inspections were compliant with 90 per cent of inspection items. Most inspection non-compliance was attributed to a few items related to operational issues including lagoon design requirements or compliance dates, and record keeping associated with maintenance and inspections (Figure 1).

QUICK FACTS

Wastewater treatment and collection facilities connected to a hygienic drinking water system are not required to have a certified operator.

Lagoon treatment is the most common method of wastewater treatment in Saskatchewan. It consists of a series of open basins or reservoirs designed to treat and store sewage.

Mechanical treatment uses an artificial environment to process sewage using processes like lagoon treatment but allows for reduced processing time and overall footprint of the facility.

Results of specific wastewater system inspections, sampling and contact information can be found online (waterquality.saskatchewan.ca/WasteWater).

***Source Water Protection** ensures 'high quality source waters are protected now and into the future' – Safe Drinking Water Strategy, 2002.*

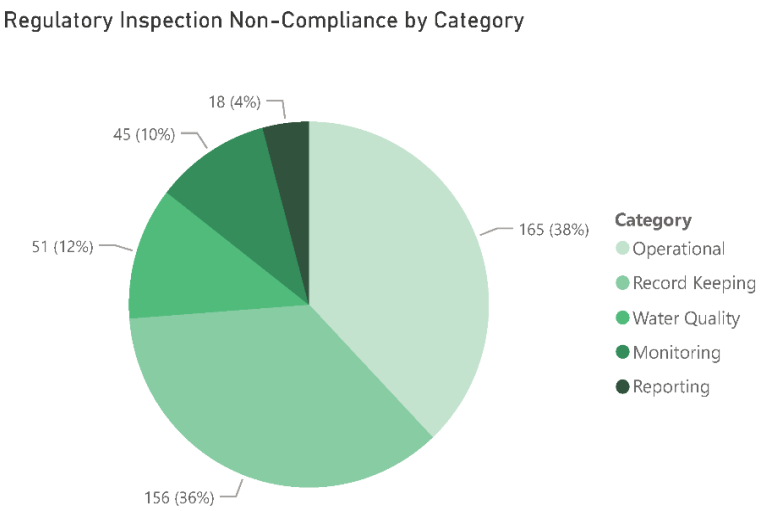


Figure 1. Wastewater regulatory inspection non-compliance by category. Per cent from greatest (light) to least (dark).

Transport and Disposal of Liquid Domestic Waste

The transport and disposal of domestic sewage requires responsible waste management practices to protect source water supplies, the environment and human health.

Sewage haulers are required to obtain a *Permit to Transport and Dispose of Liquid Domestic Waste* issued by WSA. Disposal at an approved wastewater treatment facility is preferred; however, land spreading may be permitted when a facility is not accessible within 50 kilometres of collection or if the sewage is disposed of on the private property on which it was generated. The hauler may be required to provide a Waste Management Plan (WMP) if permit terms cannot be met. Signed permissions from wastewater facilities and landowners are required regardless of method of disposal.

In 2021-22, the Water Security Agency amended the permit template to clearly identify the approved disposal locations. A technical review of the WMP requirements was initiated and WMPs were set to expire with hauling permits to reduce the administrative burden on haulers. As of March 31, 2022, there were 259 permitted and active haulers in the province with 25 identifying land spreading as a method of disposal.

Sewage Effluent Discharges to Surface Water

Regulating and monitoring wastewater effluent is needed to manage and mitigate the potential impacts of wastewater to environment, aquatic life and source water quality for downstream use.

QUICK FACTS

In 2021-22, Environment's Compliance Audit Program audited Liquid Domestic Waste Haulers in northwest Saskatchewan. Results indicated haulers had a 94% compliance rate with the terms of their permits. The primary non-compliance issue identified was record keeping.

Liquid domestic waste means any wastewater, including sewage, created at a household as a part of everyday domestic activities (e.g., wastewater from washing dishes, clothes, showering, toilets, etc.).

Permit applications (WSA 505) and permission forms (WSA 506) to haul liquid domestic waste are online.

Applying pesticides to control aquatic nuisances in and around surface water requires a permit and an applicator licence according to The Environmental Management and Protection Act, (2010) and The Pest Control Products (Saskatchewan) Act, 2003. In 2021-22, there were 49 permits issued.

More information on the Canada-wide Strategy for Management of Municipal Wastewater Effluent is on the Canadian Council of the Ministers of the Environment (CCME) website.

The *Canada-wide Strategy for the Management of Municipal Wastewater Effluent* (MWWE) was developed by provincial and territorial Ministers to ensure that all wastewater facilities achieve a minimum of secondary level treatment that meets National Performance Standards (NPS), and regularly report on the quality and quantity of effluent being discharged to surface waters. Facilities are provided graduated timelines to comply with the standards based on their risk classification.

In Saskatchewan, 96 wastewater systems are required to meet MWWE standards, of which, 36 are low to medium risk facilities working towards compliance (Figure 2). This number will decline as communities establish funds to upgrade or construct facilities to meet the standards.

In addition to MWWE, wastewater facilities releasing effluent to fish bearing waters are subject to the *Wastewater Systems Effluent Regulations* (WSER) according to the federal *Fisheries Act*. In 2021-22, WSA identified 71 wastewater facilities subject to WSER and works with communities on compliance and reporting through the federal Effluent Regulatory Reporting System.

To further protect source water, WSA requires a Downstream Use Impact Study (DUIS) prior to issuing or renewing operational permits on wastewater facilities subject to MWWE and WSER. A DUIS allows for the development of site-specific Effluent Discharge Objectives (EDO) that may be included in the operational permits issued pursuant to *The Waterworks and Sewage Works Regulations*. In 2021-22, the WSA received and reviewed eight DUIS reports from communities that discharge treated effluent into fish-bearing waters.

Addressing sewage works capacity and treatment concerns requires planning, financial investment and construction time. This means the reduction in the number of works representing a risk to source waters is expected to decline slowly.

501 Utility Authority Lagoon, WSA

QUICK FACTS

In 2020-21, the Water Security Agency signed a five-year administrative agreement with Environment and Climate Change Canada (ECCC) to ensure facilities captured under WSER are monitoring and reporting as required.

WSA is working with other jurisdictions and the CCME Secretariat to write a 10-year MWWE progress report.

The plan and design of a wastewater treatment facility may change after the DUIS and EDO are completed to ensure treatment will meet the standards set out in the permit to operate

Wastewater effluent quality is reviewed annually during inspections conducted by WSA EPOs.

The agency represents Saskatchewan on the CCME, Water Management Committee, and Water Guidelines Working Group to oversee development of science-based guidelines for the protection of aquatic life. In 2021-22, Canada-wide water quality guidelines were developed for polycyclic aromatic hydrocarbons (PAHs) and perfluorooctanoic acid (PFOA).

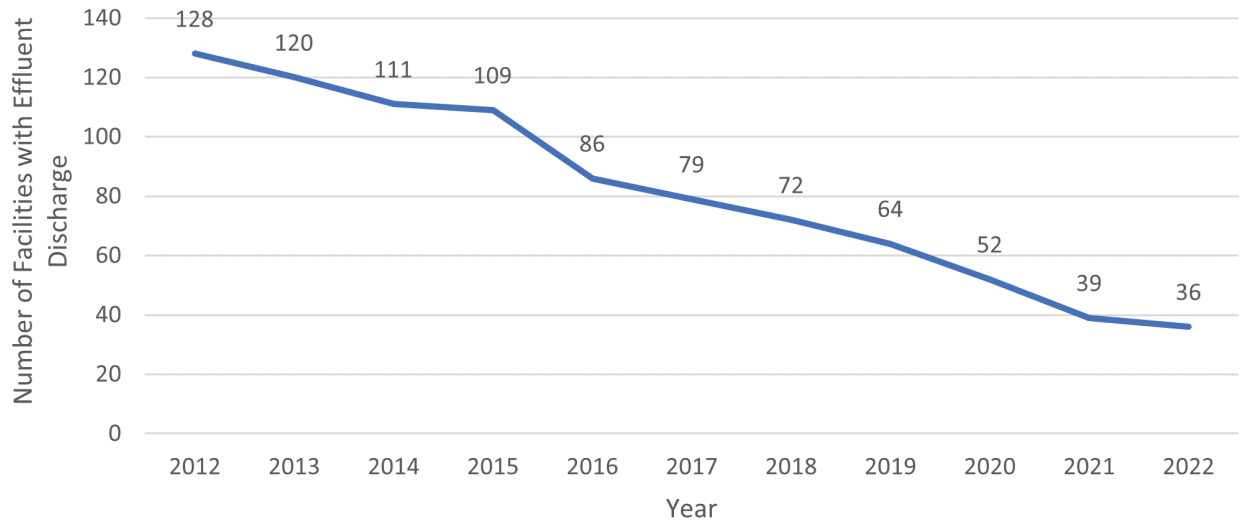


Figure 2. Number of wastewater facilities with effluent discharge posing a potential risk to surface water over past 10 years.

Surface Water Quality of Primary Rivers in Saskatchewan

WSA monitors water resources to protect water quality and ecosystem function. The Primary Water Quality Monitoring Program monitors 10 primary rivers at 24 sites, four times a year, to assess the state of the water quality. The data is also used for reporting and decision-making purposes including issuing permits and licences for water use.

Surface water quality is defined by its physical, chemical and biological characteristics, which are influenced by natural processes and human activities. Water quality is compared with science-based water quality objectives for the protection of aquatic life[5,6,7] to assess river health using a water quality index tool developed by the CCME[8]. Each site or location receives a score from 0 to 100, which classifies water quality as poor, marginal, fair, good or excellent.

In Saskatchewan, nutrient objectives are commonly exceeded due to naturally high concentrations in our watersheds. High flows and transport of sediment in the spring can raise concentrations of metals, while low flow or winter conditions can increase unionized ammonia or lower dissolved oxygen concentrations.

QUICK FACTS

For the first time in Canada, WSA is conducting a study, in partnership with the Ministry of Agriculture, to evaluate the safety and use of TETON (endothall) to control algae in irrigation canals located near Outlook, SK.

WSA works with ECCC annually to report on the Canadian Environmental Sustainability Indictors for water quality in Canadian rivers. Access to data and information is online canada.ca.

[5] WSA. 2015. Surface Water Quality Objectives. wsask.ca
[6] Canadian Council of the Ministers of the Environment (CCME). 2020. Canadian Environmental Quality Guidelines for the Protection of Aquatic Life: Summary Table. ccme.ca
[7] Prairie Provinces Water Board (PPWB). 2021 . 2021 Water Quality Objectives. ppwb.ca
[8] CCME. 2017. CCME Water Quality Index Manual. ccme.ca

The average surface water quality in the primary rivers sampled from 2019 to 2021 is good and continues to support aquatic life (Figure 3). It is important to note that the water quality index provides a snapshot of river health. For more information and the latest water quality trends in Saskatchewan transboundary rivers see, the Prairie Provinces Water Board report #179 (ppwb.ca).

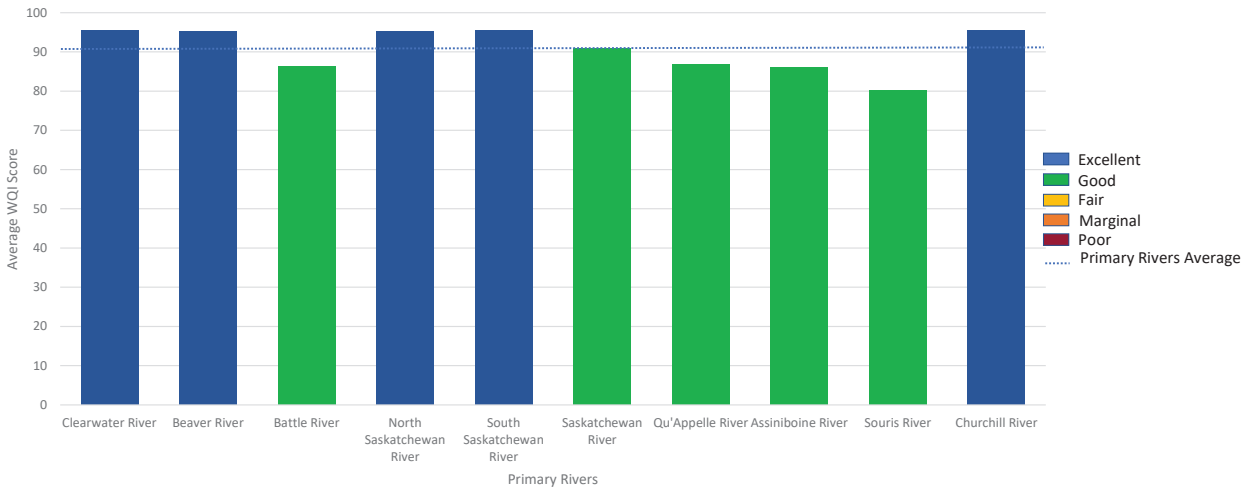


Figure 3. Water quality index scores for the primary rivers of Saskatchewan from 2019 to 2021.

Municipal Source Water Protection Bylaws

Municipal bylaws protect source water and drinking water supplies at the local level. Figure 4 shows an increase over the last decade of the percentage of municipalities with bylaws in place to protect their drinking water supplies. Approximately 90 per cent of the population resides in a municipality with source water protection provisions. Municipalities have become increasingly aware of their responsibilities for source water protection through collaboration and education provided by Government Relations.

QUICK FACTS

Municipalities can ensure water quality for human consumption is not compromised by new development by establishing priorities and goals through The Statements of Provincial Interest Regulations. Government Relations assists municipalities through the process and provides a Statements of Provincial Interest Handbook.

Ministry of Environment, Environmental Protection Branch regulates municipal and industrial waste management and landfill operations and hazardous waste. For more information: Saskatchewan's Solid Waste Management Strategy, Hazardous Waste Management, and Solid Waste Management.

The Ministry of Agriculture requires waste storage and waste management plans for intensive livestock operations in Saskatchewan. In addition, they provide environmental education and programming, and funding to agricultural producers in Saskatchewan. See the Agriculture Development Fund, Environmental Programs, and Regulation of Intensive Livestock Operations.

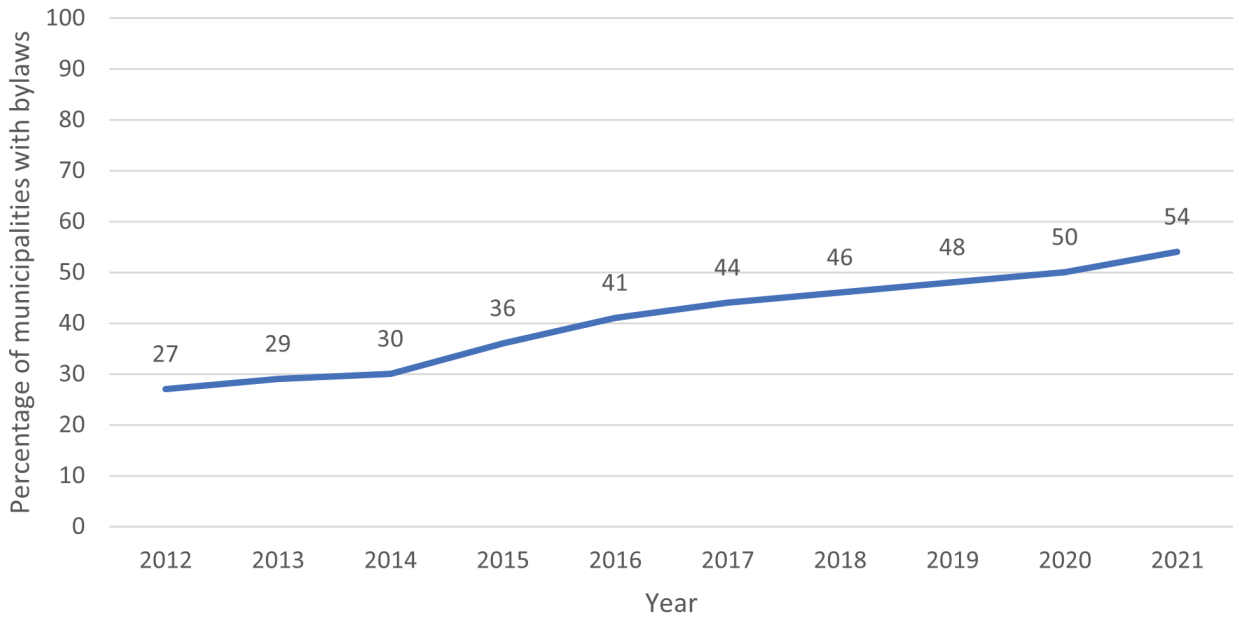


Figure 4. Percentage of municipalities with source water protection bylaws. Source: Government Relations

Source Water Protection – What is happening?

Source water protection may be the most vital component of an effective drinking water management strategy. Investment and effort into the protection of source water can minimize costs associated with drinking water treatment, maintain ecosystem function and provide sustainable water for future growth in Saskatchewan.

Indicator	State	Trend	Explanation
Wastewater Inspection Compliance	Mixed/Fair	Improving	Municipalities have trained operators and continue to work with WSA to improve compliance.
Liquid Domestic Waste Transport and Disposal	Good	Improving	WSA continues to improve the regulatory process through changes to the permit application process and the waste management plan requirements.
Wastewater Effluent Discharge	Good	Improving	Federal and provincial legislation continues to mitigate the effects of wastewater effluent to the environment through improved treatment and standards.
Surface Water Quality	Good	No Change	The water quality index suggests source water continues to support aquatic life but is insufficient to interpret trends.
Source Water Protection Bylaws	Good	Improving	Densely populated areas of the province have established bylaws while less dense municipalities are establishing bylaws slowly over time.

Drinking Water Treatment and Distribution

Providing safe drinking water is highly reliant on the knowledge and capabilities of waterworks operators, infrastructure design and maintenance, and ongoing compliance with the regulations. The Water Security Agency provides professional regulatory oversight, and engineering design review and approval services to ensure owners and operators meet regulatory requirements. Effective water treatment and distribution that facilitates the delivery of safe drinking water to consumers requires:

- employment of certified operators to run waterworks, and,
- engineering approvals to construct.

Operator Certification

Water treatment plant operation, maintenance and repairs should take place under the direction of a certified operator. Operators are certified by the Saskatchewan Operator Certification Board (OCB) according to the Water and Wastewater Works Operator Certification Standards and the Water and Wastewater Operator Certification Program Guide (EPB 144). The classification of the water treatment plant and distribution is based on the complexity of the operation or point systems and determines the level of operator certification required (Table 1). Ongoing education is required by all operators to maintain certification.

QUICK FACTS

In 2021, Saskatchewan adopted the Association of Boards of Certification (ABC) standardized testing for operators, in line with the Canadian Water and Wastewater Operator Certification Best Practices.

Search for certified operators by community online at saskocb.ca.

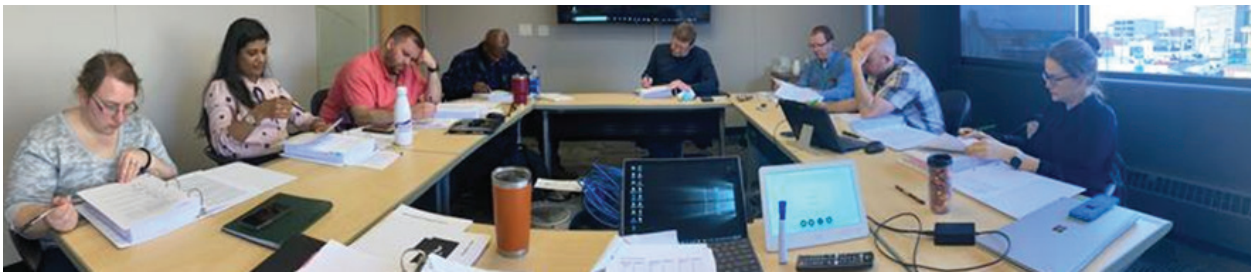
Hygienic systems do not require a certified operator.

'Waterworks systems and operations *provide safe, clean and sustainable drinking water' – Safe Drinking Water Strategy, 2002*

In 2021-22, 94 per cent of human consumptive treatment facilities employed a certified operator at the required level for their treatment classification. Acquiring and retraining certified operators can be difficult, especially in rural and remote communities. In many circumstances, operators working to attain the required level of certification have some level of certification and experience. WSA provides additional guidance on establishing regional/contract operators (EPB 286) so communities without an operator can meet the mandatory certification requirements.

Table 1. Facility classifications, descriptions and required level of operator certification.

Drinking Water Facility Classification and Description		**Operator Level**
Class I Small Systems	Groundwater treatment and distribution serving fewer than 500 people Treated drinking water pipelines serving fewer than 500 people	Small Systems
Class I	Water distribution serving up to 1,500 people Water treatment point class up to 30	Level I
Class II	Water distribution serving 1,501 to 15,000 people Water treatment point class from 31 to 55	Level II
Class III	Water distribution serving 15,001 to 50,000 people Water treatment point class from 56 to 75	Level III
Class IV	Water distribution serving greater than 50,000 people Water treatment point class 76 or higher	Level IV



Engineering Approvals

To ensure waterworks and sewage works will meet the provincial regulatory requirements and to reduce the need for future modifications, construction permits are required to build water treatment facilities, and distribution and collection works in Saskatchewan.

Permits to Construct a Waterworks and Sewage Works are issued once WSA's Design Standards (EPB 501/EPB 503) and regulations are met and approved by WSA regulatory approvals engineers. Design standards follow nationally-recognized standards and best practices. The engineering approvals group works closely with communities and consulting engineers to apply site-specific considerations when required.

QUICK FACTS

A waterworks can include municipal wells, distribution systems including pipelines, and water treatment plants.

Instructions to complete the application for a Water Rights Licence and Approval to Construct and Operate works is provided by WSA.

Additional approvals or permits that may be required to build or operate a treatment facility include:

- A Water Rights Licence (WSA)
- An Aquatic Habitat Protection Permit (WSA)
- Adequate land control
- Approval for any connections to rural water pipelines (WSA/SHA)

Compliance with As-Built Reporting ensures the final design plans (as-builts) did not deviate from the original design to ensure treatment performance. In 2021-22, Environment's *Compliance Audit Program* audited five cities' As-Built Reporting and found 79% of audit items compliant.

Drinking Water Treatment and Distribution – What is happening?

Water treatment requires specialized expertise from the initial stages of design and build, maintenance and operation, and delivery to the public. The Water Security Agency and SHA provide the regulatory oversight while certified operators and waterworks owners are responsible for carrying out planning, maintenance and operation of their water treatment facilities.

Indicator	State	Trend	Explanation
Operator Certification	Good	No Change	While a high number of treatment facilities maintain trained operators and training opportunities have expanded (e.g., online), there are still significant challenges for rural and remote communities to find and retain a certified operator.
Engineering Approvals	Good	No Change	Construction applications and reviews remain consistent in quality and quantity.

Churchbridge WTP RO system

Monitoring and Compliance

Consistent and sustained delivery of safe drinking requires ongoing monitoring and inspection to verify effective water treatment. A Permit to Operate a Waterworks provides the operational requirements including record keeping, reporting, sampling and monitoring requirements, and minimum water quality standards. EPOs determine compliance with the operational permit during inspection to ensure the facility and operations meet regulatory requirements. Monitoring and compliance to provide reliable and safe drinking water for consumers is accomplished through:

- research and development to set drinking water guidelines;
- compliance with drinking water standards with the plant and distribution; and,
- inspection of drinking water treatment and distribution systems.

Guidelines for Drinking Water Quality

The Water Security Agency represents Saskatchewan on the Federal-Provincial-Territorial Committee on Drinking Water (CDW) and works with other jurisdictions and experts across Canada to develop the science-based drinking water quality guidelines in Canada. Participation in the CDW ensures that Saskatchewan is applying drinking water standards to waterworks that are achievable and protective of human health.

To manage risk, the WSA conducts research and exposure studies, evaluates treatment applicability and cost, and consults with the public and provincial stakeholders before adopting the guidelines as drinking water quality standards in the province. The drinking water quality standards are found in *The Waterworks and Sewage Works Regulations* and The Saskatchewan Drinking Water Quality Standards and Objectives (EPB 507). These standards are also included in each new or renewed waterworks operational permit.

The CDW approved some of the herbicide guidelines such as bromoxynil, diquat, 2-4 D and dicamba and WSA will conduct research on their applicability in the province before adopting this as drinking water quality standards. The CDW is also working to develop a guideline or objective for Perfluoroalkyl substances, which are persistent compounds resistant to environmental degradation.

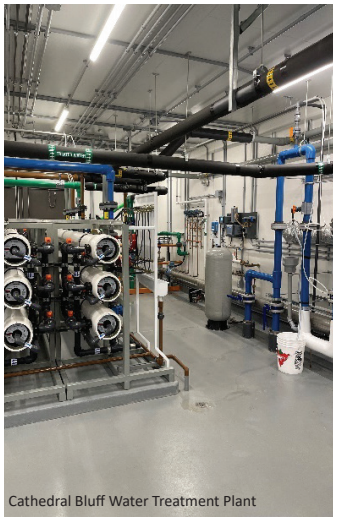
WSA continues to study the concentrations of chemicals or biological contaminants of emerging concern due to their potential impact on human health and the environment. Evaluation of Emerging Substances of Concern in Saskatchewan takes place at selective water and wastewater treatment plants, and surface water sources.

QUICK FACTS

The current Guidelines for Canadian Drinking Water Quality can be accessed online at canada.ca.

In 2021-22, WSA studied the boron removal efficiency of 23 water treatment plants, with an assortment of treatment methods. Results found boron concentrations were significantly reduced by reverse osmosis. The study results are used by the CDW to determine if the Maximum Acceptable Concentration for boron should be reduced from 5 mg/L to 2 mg/L.

'The drinking water ***regulatory system is clear and effective*** *– Safe Drinking Water Strategy, 2002*



Cathedral Bluff Water Treatment Plant

Water Quality Compliance

Operators monitor water quality to ensure treatment is effective and water is safe for human consumption. A Permit to Operate a Waterworks outlines the minimum monitoring requirements as determined by *The Municipal Drinking Water Quality Monitoring Guidelines* (EPB 202). The water quality parameters monitored depend on factors associated with source water, treatment method and performance, resources available for sampling and the population served. The frequency of sampling for most parameters is primarily based on the type of source water and population served.

Compliance with the regulations and drinking water standards is the responsibility of the owners and operators of waterworks. WSA receives water quality results from waterworks monitoring and follows up with operators/owners who have not submitted samples. For most waterworks, priority water quality monitoring includes sampling for the following:

Bacteria

The bacteriological quality of water is a critical parameter for drinking water due to the possibility of acute health effects for consumers. Saskatchewan uses total coliform bacteria and *E. coli* bacteria as indicators of the quality of drinking water. Bacteriological monitoring is conducted primarily throughout the distribution system to ensure water remains disinfected at the point of consumption.

Turbidity

Turbidity is an on-site measurement of water clarity to monitor treatment performance. Low turbidity indicates water treatment was effective in removing suspended particles from the water, while increased turbidity can impair disinfection and provide pathogens with a medium to grow on. Turbidity is monitored during the treatment process and prior to distribution depending on the water source.

Disinfection

Chlorine is used to disinfect water to eliminate and prevent the spread of waterborne disease. Though waterworks may use other methods of disinfection (e.g., ozone, UV-light), a chlorine-based residual must be maintained throughout the distribution system. Operators measure total and/or free chlorine on-site to confirm effective disinfection of treated water and long-lasting protection throughout the distribution.

QUICK FACTS

Why is chlorine used to disinfect drinking water if by-products may also present a risk to human health?

Chlorine is an inexpensive, effective disinfectant used to eliminate the risk of acute illness. Conversely, disinfection by-products pose a relatively small risk of adverse health effects over long-term exposure, which can often be mitigated through operational changes to the disinfection process.

Water quality samples must be analyzed by an accredited laboratory to ensure quality assurance and control standards were followed, and results are accurate. The Canadian Association for Laboratory Accreditation provides a list of accredited labs online Directory Search (cala.ca)

The Water Security Agency monitors results from all human consumptive systems that artificially fluoridate or have high, naturally-occurring fluoride.

Health and Toxicity

Health and toxicity parameters include a range of metals naturally occurring in source water. For example, naturally high concentrations of arsenic, uranium and selenium can make water treatment difficult and expensive for communities. Monitoring for health and toxicity takes place at the water treatment plant before the water enters the distribution system.

Trihalomethanes and Haloacetic Acids

Trihalomethanes (THM) and haloacetic acids (HAA) are generated during the water treatment process when chlorine reacts with organic matter in the water. Waterworks with a surface water source are more likely to require disinfection by-product monitoring. Monitoring takes place throughout the waterworks distribution system where concentrations can be higher due to increased reaction time between chlorine and organic matter.

Figure 5 shows water quality compliance with drinking water standards is high for health and toxicity, bacteria and disinfection. Failure to send an on-site chlorine residual reading when submitting bacteria samples contributes to lower disinfection compliance. Turbidity compliance is based on the EPO's review of turbidity compliance inspections. Compliance of disinfection by-products is variable and consists of ongoing and assessment type monitoring.

QUICK FACTS

Overall compliance with water quality standards remains relatively consistent for human consumptive regulated systems in Saskatchewan.

In addition to required sampling, waterworks may submit additional samples for analysis to ensure safe drinking water is maintained following upset conditions, routine maintenance, or while operations are adjusted.

Find drinking water quality by waterworks online at waterquality.saskatchewan.ca/DrinkingWater.

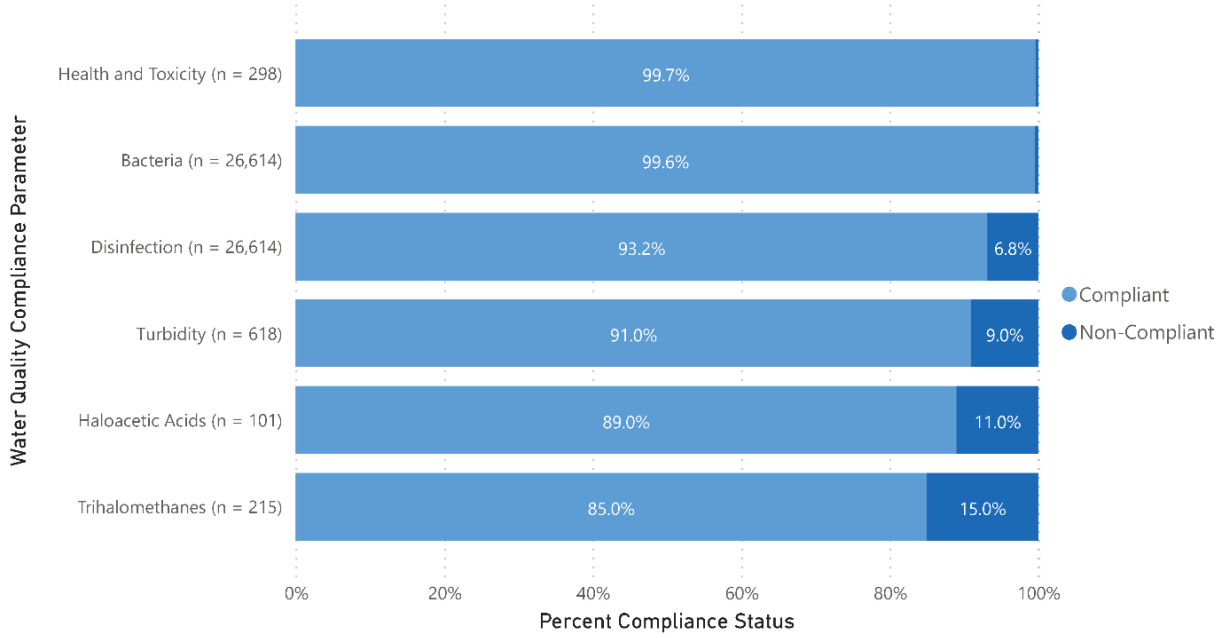


Figure 5. Compliance with required water quality monitoring in 2021-22.[9]

[9] Health and toxicity is non-compliant if at least one parameter in a sample exceeds for arsenic, barium, boron, cadmium, chromium, lead, selenium or uranium.

Drinking Water Systems Inspection Compliance

Waterworks inspections provide performance feedback to waterworks owners and operators. Inspections are an essential tool in drinking water management systems to identify and correct issues before they pose a significant risk. *The Waterworks and Sewage Works Regulations* stipulate that operations have a minimum of one or two inspections annually depending on the water source and population served.

In 2021-22, 99.5 per cent (617/620) of human consumptive water treatment and distribution systems were inspected by WSA EPOs. A total of 794 inspections were conducted with 23 per cent of the inspections considered fully compliant. Eighty-seven per cent of inspections were compliant with 90 per cent of inspection items. Figure 6 shows non-compliant inspection items were largely due to missed bacteriological sampling, failure to maintain and calibrate test equipment, and failure to keep records associated with monitoring and testing.

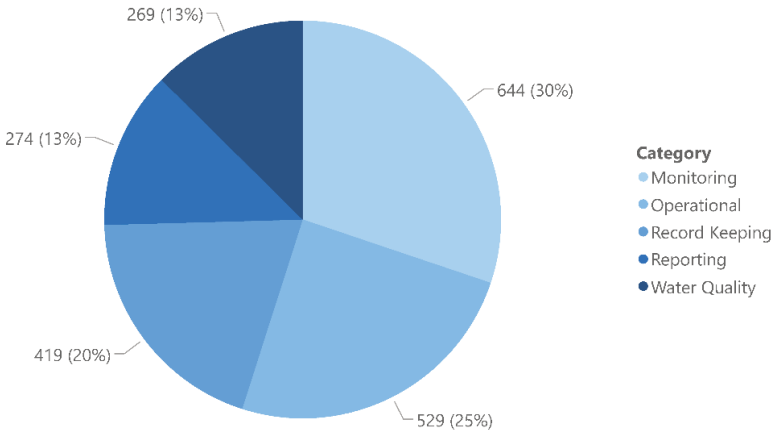


Figure 6. WSA drinking water regulatory inspection non-compliance by category. Per cent from greatest (light) to least (dark).

QUICK FACTS

Individual waterworks inspections for WSA-regulated works can be found online at: Drinking Water Quality Search (saskatchewan.ca).

Drinking water inspections contain an average of 100 regulatory items. Operators and owners achieving 100% compliance are doing exceptional work!

Most inspections result in only one non-compliant item, often a result of a minor oversight easily addressed by operators and owners of waterworks.

For more complex or ongoing issues, WSA EPOs and engineers provide additional guidance and support. Correction of non-compliance issues are the responsibility of waterworks owners and operators.

What about small drinking water systems regulated by the Saskatchewan Health Authority?

The Saskatchewan Health Authority regulated 847 drinking water supplies in 2021-22 and conducted 764 inspections of public drinking water systems to monitor compliance with The Health Hazard Regulations. The percentage of the population served by these systems is small in comparison to those regulated by WSA; however, they still require regulatory oversight for the protection of human health. SHA does not provide permits for public water supplies but does issue approvals and conducts annual inspections.

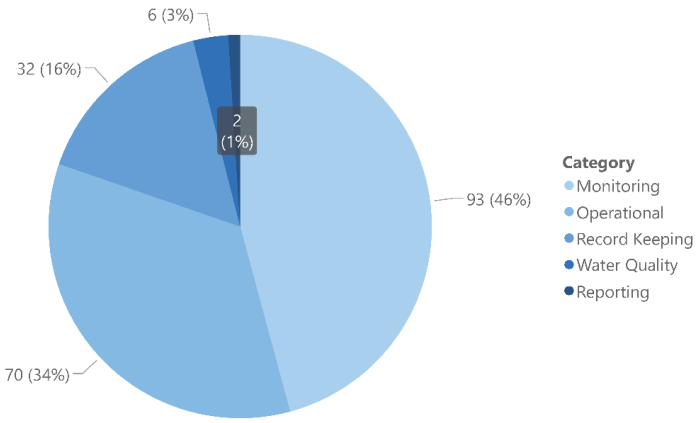


Figure 7. SHA drinking water regulatory inspection non-compliance by category. Per cent from greatest (light) to least (dark).

Monitoring and Compliance – What is happening?

WSA determines monitoring requirements and follows up with inspections to ensure compliance with *The Water Works and Sewage Works Regulations* and the *Saskatchewan Drinking Water Standards and Objectives.* Monitoring, inspection and compliance are ongoing activities that keep a drinking water management system in-check. As a component of the multi-barrier approach, there is always room to improve compliance through feedback mechanisms like inspections.

QUICK FACTS

Program resources for SHA public health inspections were reprioritized for a proportion of the 2021-22 fiscal year to accommodate COVID-19 pandemic response activities. As a result, 10% of public water supplies did not receive a routine inspection.

Examples of SHA regulated public water supplies include water systems serving public eating establishments, campgrounds, and other public or privately owned facilities predominately in rural or remote locations.

More information on SHA regulated water systems can be found at www.saskatchewan.ca/residents/environment-public-health-and-safety/environmental-health/water-and-wastewater-management

Indicator	State	Trend	Explanation
Drinking Water Guidelines	Good	No Change	WSA continues to participate and actively contribute to the review and development of drinking water guidelines to inform standards and objectives.
Water Quality Compliance	Good	No Change	Compliance remains high, especially for parameters that pose an acute risk to human health, in WSA-regulated human consumptive waterworks.
Drinking Water Systems Inspection Compliance	Mixed/Fair	Improving	Inspections are designed to catch large and minor issues. Most non-compliance issues identified can be easily addressed by owners and operators of both WSA- and SHA- regulated systems.

Response to Adverse Conditions

Protecting public health is the priority when adverse water quality is detected by routine water sampling. A risk-based management approach dictates the response by WSA or SHA that considers the source water, treatment, distribution, cross-connections and the operator's skill level. In most cases, follow-up sampling and monitoring is all that is required to verify the water is safe to consume. When drinking water quality is impacted and poses potential risk, WSA and SHA respond with:

- public notification of Precautionary Drinking Water Advisories (PDWA) and Emergency Boil Water Orders (EBWO); and
- abatement and enforcement.

Waterworks owners are responsible for immediately report known or anticipated disruptions to the disinfection process or operations. They must act on the direction or advice given by the EPO or public health inspector (PHI) to resolve issues and ensure that consumers receive notifications in a timely and effective manner.

For WSA-regulated waterworks, EPOs receive bacteria detection reports directly from analytical laboratories and work closely with communities, PHIs and medical health officers (MHOs) to ensure appropriate advisories or orders are issued according to the *Adverse Drinking Water Quality Incident and Bacteriological Follow-up Standard* (EPB 505).

QUICK FACTS

In 2021-22, four EBWOs were issued because *E. coli* was detected in a routine water sample.

If human consumptive regulated waterworks are unable to meet minimum treatment requirements, they are placed on a long standing PDWA.

Hygienic waterworks, not used for human consumption, are required by their Permit to Operate to submit routine bacteriological samples.

See www.saskatchewan.ca Advisories and Warnings for current PDWAs issued by WSA, Environment, and SHA.

Precautionary Drinking Water Advisories and Emergency Boil Water Orders

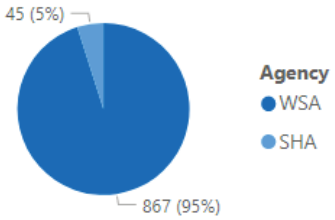


Figure 8. Advisories or orders in effect or issued by WSA and SHA in 2021-22.

In 2021-22, there were a total of 912 PDWAs and EBWOs in effect or issued by WSA and SHA combined (Figure 8). All drinking water advisories and orders are submitted to the national Canadian Network for Public Health Intelligence (CNPHI) advisory application by EPOs and PHIs, to ensure real-time notification and information sharing, which enhances communication and response coordination. Priority levels are given to the advisory or order with options to identify water quality and operational reasons for the classification.

Precautionary Drinking Water Advisories are issued when there is a concern that upset conditions, operational problems or start-up of a waterworks may impact drinking water quality. PDWAs will direct users to boil the water prior to use where there is microbial contamination. When the risk cannot be eliminated by boiling or presents additional exposure risk, the PDWA will direct users — 'Do Not Drink' or 'Do Not Use'. Under these circumstances, consumers are advised to find an alternate safe drinking water source. In CNPHI, PDWAs are given a priority level of non-critical, important or urgent.

Emergency Boil Water Orders are issued to mitigate confirmed public health threats due to microbial contamination (e.g., *E.coli*). WSA EPOs work closely with SHA under these circumstances as EBWOs are issued by Medical Health Officers (MHOs). All EBWOs have a priority level of emergency in CNPHI.

In 2021-22, WSA issued 867 advisories (Figure 9). Non-critical PDWAs, which are *precautionary low risk* advisories, made up 92 per cent of all advisories issued. These are issued as a precautionary measure associated with water quality concerns due to line breaks or pressure loss in the distribution system and operational issues associated with planned systems maintenance, treatment failure, and power loss or failure.

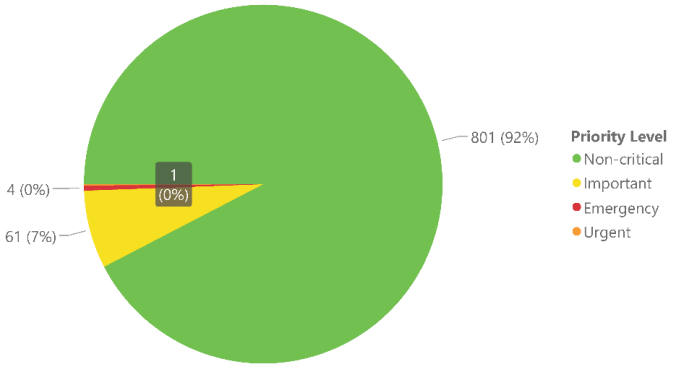


Figure 9. PDWAs and EBWOs issued for WSA-regulated waterworks. Source: CNPHI

Important PDWAs, which are *crucial or high risk,* comprised seven per cent of the advisories largely issued due to significant line breaks or pressure loss, exceedances of water quality standards and high turbidity readings in treated water. Operational reasons for important PDWAs included inadequate disinfection at the treatment plant or distribution system, equipment failure or damage, planned maintenance, and inability of treatment to cope with changes to source water quality. There were no urgent PDWAs issued in 2021-22.

Four EBWOs were issued for different WSA-regulated waterworks in 2021-22. Follow up and adherence to protocols is a priority of WSA and SHA under these circumstances and issues associated with these EBWOs were resolved in a median time of three days (range two to 26 days).

QUICK FACTS

Turbidity-related upsets may require EPO advice on system repairs, reservoir cleaning, distribution system flushing and verification through water quality monitoring.

Low disinfection levels are detected and reported by operators who work with EPOs to resolve the problem. Failure to report chlorine residuals with bacteriological samples collected from the distribution system is considered non-compliant with disinfection standards.

EPOs and PHIs are professionally trained to interpret the level of risk that determines the communication and response to adverse conditions within the regulatory framework.

To provide safe drinking water to the public, qualified operators and responsible waterworks owners work with the regulators to notify consumers, fix problems and re-instate service.

Non-critical and important PDWAs were in effect for a median length of seven and eight days, respectively. EBWOs on WSA-regulated waterworks had a median length of three days.

In 2021-22, 98.5% of WSA-regulated waterworks that posted advisories still met the minimum treatment requirements.

What about small drinking water systems regulated by the Saskatchewan Health Authority?

Of the 45 advisories issued by the SHA, 37 were PDWAs and eight were EBWOs (Figure 10). PHIs issue PDWAs for a variety of reasons including as a precautionary measure while a water system is started for seasonal operation, a lack of treatment or maintenance, and in response to equipment or facility failures. PHIs adhere to standard operating procedures when issuing PDWAs and, in more serious situations, EBWOs. SHA MHOs are responsible for issuing EBWOs pursuant to *The Public Health Act, 1994* on WSA- or SHA-regulated water systems. The predominant reason for issuing an EBWO is the presence of bacteria, particularly *E.coli*, in a water sample.

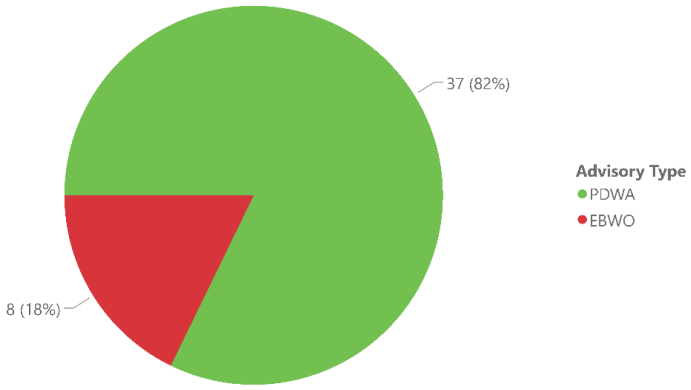


Figure 10. PDWAs and EBWOs issued for SHA-regulated waterworks Source: CNPHI

Abatement and Enforcement

WSA prioritizes education and guidance as a primary response to issues of non-compliance. Verbal warnings are issued for minor offences encountered during inspection duties and documented on inspection forms to ensure proper follow-up. Written warnings consist of letters of non-compliance and warnings of non-compliance. These are issued for non-compliance detected during inspections, or when follow-up requirements previously identified were not complied with. Waterworks and Sewage Works Protection Orders are issued to the owner of the waterworks with the responsibility to protect human health and the environment.

The Water Security Agency provides the framework for EPOs to ensure that uniform and efficient compliance and enforcement practices are followed in dealing with non-compliance for drinking water and wastewater violations. The enforcement protocol requires that compliance be obtained initially through public education and prevention (abatement) with enforcement a measure of last resort. Compliance-related actions are applied when an issue is causing, or has the potential to cause, a significant risk to public health and safety, or the environment.

QUICK FACTS

In 2021-22, Environment's *Compliance Audit Program* audited 12 communities' quality assurance and control, and emergency planning protocols. Results showed 64.5% compliance with regulatory items.

Communities can access the Waterworks Emergency Response Planning Standard (EPB 540) to assist with preparing a waterworks emergency plan.

The Water Security Agency, with support from Natural Resources Canada, offers resources to communities interested in developing Hydrologic Drought Response Plans. To find out more, please contact comm@wsask.ca

To report a spill that poses a risk to a drinking water source and public health, or the environment call the Ministry of Environment at 1.800.667.7525.

Response to Adverse Conditions – What is happening?

WSA works with communities and SHA to ensure regulatory protocols are followed in response to adverse conditions posing potential risk to human health. In addition to the preventative barriers, a coordinated and standardized approach to adverse conditions is best practice to protect the public should preventative measures fail.

Indicator	State	Trend	Explanation
PDWA/EBWO Response	Good	Not Applicable	WSA and SHA inspectors and medical health officers continue to work together to ensure public safety by following established protocols. Operators and owners of waterworks provide notification to regulators and the public when adverse conditions arise.
Abatement and Enforcement	Good	Not Applicable	Priority remains to work with communities and their operators to correct non-compliance through education and verbal warnings during inspection.

Public Perception and Trust

The public's perception of drinking water safety influences water use. Perceptions should be based on accurate information that enables communities and individuals to make informed decisions. Reliable and timely information builds trust between the public, operators and owners of water works, and the regulators. Public perceptions and trust in regulated drinking water management systems is fostered through:

- transparent and effective communication of accurate information; and,
- feedback through the annual drinking water survey.

Transparent and Effective Communication

Information to build a positive perception of Saskatchewan's drinking water must be understandable, current and readily available. When citizens know and understand their drinking water, they can make decisions based on an accurate assessment of risk. WSA and waterworks owners work to build trust with the public by providing:

- annual notification to consumers (EPB 536);
- online water quality and inspection report results;
- online advisories (PDWA/EBWO) currently in place; and,
- annual reporting on the State of Drinking Water in Saskatchewan.

Perceived Drinking Water Safety

WSA conducts an annual survey to gauge the public's perception of drinking water quality and safety in Saskatchewan. The survey was initiated in the wake of the 2001 North Battleford water crisis to provide public feedback as an outcome to the work conducted by the regulators, operators, and owners of waterworks. For 2021-22, the survey collected data from 804 respondents from May 10 to 12, 2022. Ten per cent of survey respondents reported accessing a private well for drinking water.

The survey found 85 per cent of Saskatchewan residents strongly or somewhat agreed their drinking water was safe, which remains consistent over time ranging from 84 to 90 per cent over the past 10 years. Fewer residents (78 per cent) are confident that everyone in Saskatchewan has safe drinking water. Residents may feel more confident in the safety of their own water because they have more control and familiarity with it; however, this cannot be confirmed by the survey at this time.

***'Citizens and consumers trust and value** their drinking water and the operations that produce it' – Safe Drinking Water Strategy, 2002*

QUICK FACTS

Find Water and Wastewater Management information on Advisories and Warnings, Drinking Water Quality, Operator Information, and Wastewater and Surface Water Quality here:

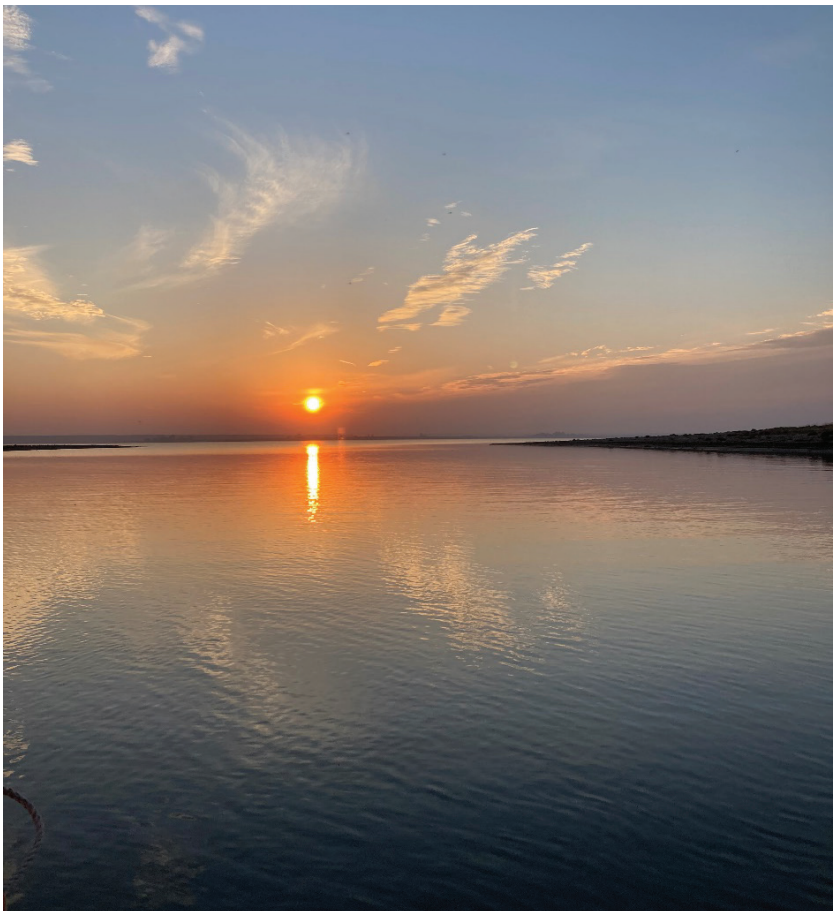
The Annual Notification to Consumers produced by water providers must contain information about the compliance of the waterworks with water quality standards and sample submission as outlined in their permit. It can be included on water bills or tax notices, published in a local paper or local media, or online.

In 2021-22, Environment's Compliance Audit Program audited four regulated waterworks to determine if their Annual Notification to Consumers included all required communication items. Results found 57% compliance with notification items.

Public Perception and Trust – What is happening?

To maintain transparency, regulators, owners and operators of waterworks provide the public with information through online resources, inspection reports, water quality results and notifications. The public provides feedback on drinking water safety and satisfaction directly to the community and operators, and through feedback surveys conducted annually by WSA.

Indicator	State	Trend	Explanation
Transparent and Effective Communication	Good	No Change	WSA and waterworks owners and operators continue to share information with the public regarding routine water quality and inspection reports and drinking water advisories.
Perceived Drinking Water Safety	Good	No Change	Most Saskatchewan residents continue to perceive their drinking water as safe. WSA improved annual reporting to ensure transparent and effective communication with the public.



QUICK FACTS

SaskWater is a commercial Crown water utility that provides drinking water and wastewater services to approximately 114,000 people throughout Saskatchewan. SaskWater provides customers with an Annual Report detailing their performance and delivery of services. See saskwater.com for more information.

Domestic water use in Saskatchewan is decreasing but highly variable depending on the community according to the State of the Environment Report, 2021:

Investment

Ensuring the financial sustainability of waterworks is critical to the long-term provision of safe drinking water and environmental protection. Investment in infrastructure comes from provincial and federal governments, municipalities, private waterworks owners and customers. Water and sewage work operations are maintained, upgraded or expanded to sustain growth and prosperity for Saskatchewan residents through:

- government and municipal infrastructure investments;
- sustainable municipal waterworks operations; and,
- consumers' willingness to invest.

Government and Municipal Infrastructure Investments

The condition, capability and capacity of water treatment and distribution infrastructure is critical in providing drinking water that meets provincial standards and national guidelines. Infrastructure funding and grants are important to help upgrade and expand infrastructure to meet guidelines, standards and the pressure created by growth.

The Canada Community-Building Fund (CCBF), formerly Gas Tax Fund, provides flexible funding to community projects including drinking water and wastewater infrastructure. Saskatchewan municipalities received over $127 million, including top-up, in 2021-22 under the program to be used towards infrastructure projects in 18 eligible categories. In 2021-22, the CCBF allocated a total of $8.1 million to 53 drinking water ($5.6 million) and 28 wastewater ($2.5 million) projects.

In 2021-22, $35 million in federal-provincial funding was provided under the Investing in Canada Infrastructure Program (ICIP) to 37 water and wastewater projects. The federal-provincial Small Communities Fund (SCF) program provided $8 million to 18 water and wastewater projects. Under the National Regional Projects (NRPs) program, the province provided over $23 million to 22 water and wastewater projects and the federal government provided a similar amount in 2021-22 (Table 2).

Municipalities can find current and future funding opportunities such as the CCBF and ICIP by searching Canada Community-Building Fund | Canada Community-Building Fund Program | Government of Saskatchewan and Investing in Canada Infrastructure Program (ICIP) | Funding for Municipalities | Government of Saskatchewan.

QUICK FACTS

The Ministry of Environment performs water-related work but does not have a dedicated budget for this activity and does not track drinking water-specific expenditures separately as this work is typically undertaken in conjunction with other industrial compliance assurance activities.

SHA does not specifically identify water and wastewater budget allocations as the operating budget is devoted to the delivery of several health-related programs through regional services, the Roy Romanow Provincial Laboratory and public health inspectors.

The New Building Canada Fund had a Provincial Territorial Infrastructure Component that provided 50% funding for provincial or regional projects that support growth in communities through the NRP and SCF. Participating communities have raised matched funding and all projects funded under NRP and SCF are currently underway or complete.

Any revenue related to drinking water and wastewater programming, and source water protection collected by the Water Security Agency contributes to administration, ongoing communications and regulatory activities.

Table 2. Total municipal drinking water and wastewater programming and infrastructure investment in 2021-22.

Ministry or Agency	Estimated Budget ($000s)	Actual Expenditure ($000s)	Variance Over (Under) ($000s)
Water Security Agency (drinking and wastewater programs and activities)	**5,285**	**4,156**	**(1,129)**
Ministry of Government Relations* (drinking and wastewater funding programs)			
- Investing in Canada Infrastructure Program (ICIP)[1]	27,618	35,419	7,801
- Small Communities Fund (SCF)[1,3]	5,203	8,259	3,056
- National Regional Projects (NRP)[2,3]	40,500	23,646	(16,854)
Ministry of Government Relations - Total	**73,321**	**67,324**	**(5,997)**
Total	**78,606**	**71,480**	**(7,126)**

*The Ministry of Government Relations budget is determined by program, not by infrastructure category (e.g., water and wastewater). The budget estimate is based on a ratio of the water and wastewater expenses compared to total program expenses multiplied by the total program budget for 2021-22.
1 Under ICIP and SCF more construction work was undertaken in 2021-22 than originally forecasted.
2 Under NRP project delays resulted in lesser than anticipated expenditures.
3 Under SCF and NRP, costs are reimbursed for eligible project costs incurred and paid by the recipient.

Sustainable Municipal Operations

Municipal infrastructure, such as treatment and distribution or collection facilities, deteriorate over time and may need to be expanded or replaced. Therefore, municipalities need to know the condition of their waterworks and create pricing and capital investment policies to maintain these systems. Waterworks rates that cover current and future waterworks expenditures and debt payments are a direct indicator of waterworks financial sustainability.

Based on an analysis of waterworks financial overviews (unaudited) submitted by 451 municipalities, 46 per cent of the municipalities were operating their water utility at a sustainable level in 2020. From 2019 to 2020, 51 per cent of municipalities showed a decrease in their sustainability ratio.

Consumer Investment

The 2022 WSA annual drinking water survey found the proportion of people willing to pay more to improve drinking water remains stable at 62 per cent in Saskatchewan. Consumer willingness to pay for drinking water is an important measure of the value placed on safe drinking water. Communicating accurate information on investment requirements needed to maintain services can build trust and support changes to drinking water fees or services in the future.

QUICK FACTS

SaskWater is a Crown Investments Corporation subsidiary, so its financial budgeting approval process is separate from that of the ministries and/or agencies. Its activities are not related to water management but rather the provision of water services to its customers. For full financial information, see SaskWater's annual report at saskwater.com.

Saskatchewan residents unwilling to pay more to improve drinking water quality or safety, identified financial stress (46 per cent), low concern for drinking water safety (45 per cent) and confidence in alternative drinking water sources or systems (42 per cent) as the top three reasons. Eighteen per cent identified that improvements had been made, or were underway, to improve drinking water quality, while 14 per cent had their own purification system installed. Waterworks owners should consider these factors to ensure effective drinking water management.

Investment – What is happening?

Government interest in maintaining growth in Saskatchewan through infrastructure construction and upgrades for water and wastewater works is high. Federal funding, administered by the province, provides significant support to municipalities. While challenges exist, there is ongoing progress for municipalities able to invest and reasonable regulatory accommodations for those that cannot. Most Saskatchewan residents are willing to invest but may require more information specific to their municipal works to make a more informed decision.

Indicator	State	Trend	Explanation
Government and Municipal Infrastructure Investment	Good	No Change	The Ministry of Government Relations continues to work closely with municipalities to allocate federal and provincial funding towards water and wastewater infrastructure.
Sustainable Operation	Mixed/Fair	Decreasing	Municipalities should evaluate the current and future investment requirements of their waterworks operations and provide their customers with clear investment plans required to maintain service.
Customer Investment	Mixed/Fair	No Change	Consumers need to understand the specific investment plans and requirements to maintain safe drinking water services in their communities.

Contact and Information:

For an electronic copy of this report or more information on the status of drinking water in Saskatchewan visit: wsask.ca or saskatchewan.ca.

To provide feedback or comment, please contact the Water Security Agency.

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