Auditor General
MANITOBA

Report to the Legislative Assembly

Provincial Oversight of Drinking Water Safety

Independent Audit Report

Website Version

September 2020

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MANITOBA

September 2020

The Honourable Myrna Driedger
Speaker of the House
Room 244, Legislative Building
450 Broadway
Winnipeg, Manitoba R3C 0V8

Honourable Ms. Driedger:

It is an honour to submit my report titled, *Provincial Oversight of Drinking Water Safety*, to be laid before Members of the Legislative Assembly in accordance with the provisions of Section 28 of *The Auditor General Act*.

Respectfully submitted,

Original Signed by:
Tyson Shtykalo

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Auditor General's comments

Safe drinking water is a key responsibility of the Government of Manitoba—more specifically, the Department of Conservation and Climate. While our province has not had any major outbreaks of waterborne diseases in the recent past, it is critical to remain vigilant by managing potential risks through the enforcement of established laws and regulations.

The people and organizations that supply drinking water to the public must ensure that water is safe to drink. Under *The Drinking Water Safety Act*, water suppliers must be licensed by the Office of Drinking Water. These licences outline the expectations of system owners and operators related to water quality standards and as well as the frequency of testing required. In our audit, we found that one out of five identified drinking water systems in the province was not licensed. Although most were smaller water systems, several provided water to schools.

While licensing is important, it is equally important to monitor these systems to ensure compliance with health and safety requirements. The number of licensed drinking water systems have nearly doubled over the last five years. However, the number of staff assigned to licensing and monitoring these systems has decreased. With limited resources available, it is important that the Department carefully plan how to address the risks we identified in this report.

Water system operators have an important role in protecting public health and ensuring water is safe to drink. We estimated that approximately half of identified water systems did not have a certified operator. Although many of these systems were very small, it is important that all water systems, no matter the size, have an operator who has received appropriate training, and understands the system and safety requirements that must be met under the licence.

The Department had not classified a large number of water systems. Many of those not classified were small semi-public water systems licensed within the last few years. This is problematic as the system classification drives the operator certification requirements for a water system.

This report includes 18 recommendations. I am pleased that the Department agrees with the recommendations and is committed to resolving the risks identified by this audit. Our first follow-up of these recommendations will be as at September 30, 2021.

I would like to thank all the Department officials we met with during our audit for their cooperation and assistance. I would also like to thank my audit team for their dedication and hard work.

Original Signed by:
Tyson Shtykalo

Tyson Shtykalo, CPA, CA
Auditor General

Provincial Oversight of Drinking Water Safety

We looked at:

- Licensing and monitoring of public and semi-public drinking water systems.
- Strategic planning and performance measurement.

18 recommendations made

What we found

THE DEPARTMENT NEEDS TO DO MORE TO ENSURE DRINKING WATER SAFETY

Licensing and monitoring of drinking water systems

- 1 out of 5 known water systems were operating without a licence
- Poor monitoring and limited steps taken to improve water system non-compliance
- Resources have not kept pace with the increasing number of licensed water systems

Planning and measuring performance

- No clear, robust plan to address the many risks to drinking water safety
- An estimated half of known water systems do not have a certified operator
- Better public information on individual water systems needed

Main points

What we examined

We examined the adequacy of the Department of Conservation and Climate's oversight of drinking water safety. This included examining processes related to its:

- Licensing of drinking water systems.
- Monitoring of drinking water systems' compliance with licensing and other requirements.
- Strategic planning and performance measurement.

What we concluded

We concluded that the Department's systems and processes for licensing and monitoring drinking water systems inadequately minimized safety risks related to drinking water. As well, the Department has weak strategic planning and performance measurement processes for overseeing drinking water safety.

What we found

Our report includes 18 recommendations. An overview of our major findings follows:

LICENSING WATER SYSTEMS

Insufficient licensing of water systems to minimize safety risks (SECTION 1)

The Drinking Water Safety Act (the Act) and the related regulations set out the standards the Office of Drinking Water must follow in licensing water systems. The Act requires any person operating a public or semi-public water system to hold a current operating licence for the water system. It also requires operating licences to have an expiry date. The Department issues licences for five-year terms.

A water system licence communicates to the system operator what they must do to meet regulatory requirements, including the water quality standards they must meet (often achieved through water treatment) and the frequency of testing required.

We identified the following weaknesses with the licensing of public and semi-public water systems:

- Water systems were operating without a licence, or with an expired licence.
  - Licensing was not done in a reasonable timeframe.
  - Most unlicensed systems in our sample were testing their drinking water, but not at the expected frequency.
  - Significant progress in licensing water systems, but more work needed to identify new and existing unlicensed semi-public systems.
- The rationale for not adopting some drinking water quality standards was unclear.
  - Manitoba's Drinking Water Quality Standards Regulation includes only 18 of the 72 health-based parameters (i.e. potential contaminants) included in Health Canada's 2017 Guidelines for Canadian Drinking Water Quality.
  - The Department did not have documented analyses supporting why the other 54 parameters were excluded from the Regulation.
  - While there are parameters that do not exist in Manitoba, we noted that some have been found in Manitoba at levels that exceeded the guidelines, and are therefore relevant.
  - The revised Health Canada Guideline has lowered the acceptable level of lead and recommended testing at the tap. The new guideline says, "Schools and daycare facilities should also be prioritized for monitoring to ensure that the most sensitive population (i.e. young children) is captured."
- Water systems were licensed without meeting regulatory requirements.
  - In the majority of cases, when a person applies to operate a water system, the water system is already operating. The water system may therefore already be meeting or not meeting the relevant requirements.
  - The Department chooses to license these systems regardless of whether they are meeting requirements. Their rationale is that it is better to have a system licensed, with their requirements clearly outlined, rather than leaving it unlicensed. It is therefore important to identify and develop plans to address non-compliance.

MONITORING WATER SYSTEMS

Poor monitoring of licensed water systems increases safety risk (SECTION 2)

The Drinking Water Quality Standards Regulation, the Drinking Water Safety Regulation and Department policy all require ongoing monitoring of drinking water systems. The Department has established monitoring activities, including reviewing drinking water tests and measurements, conducting inspections of drinking water systems, and following up with drinking water system operators when there are concerns.

It is important that missed or late tests are followed up. When required tests are not completed, the safety of the drinking water is unknown.

In examining monitoring practices, including the related follow-up and communication of non-compliance, we found:

- Monitoring and follow-up of water testing and reporting was inadequate. We did not find significant concerns for public water systems serving large populations that we tested, but we found:
  - Poor follow-up of missing samples and reports.
  - Weak follow-up of adverse test results.
  - Safety risks are not always communicated.
- Inspection processes need to be improved.
  - The required inspection frequency was not adequately risk-based.
  - Inspections were mostly done at the required frequency.
  - The inspection process, documentation and follow-up was inadequate.
- Insufficient steps taken to bring water systems into compliance.
  - Non-compliance was ongoing, but plans for achieving compliance are no longer required.
  - There are high levels of non-compliance by water systems owned by the Department of Indigenous and Northern Relations but limited enforcement actions have been taken.
  - Enforcement actions were rare and used inconsistently.
- A lack of certified water system operators.
  - Water systems operating without a certified operator.
  - Better coordination is required to ensure operators are certified.
- Better public information on individual water systems needed.
- Complaints are not tracked and documented.
- Resource challenges are affecting the ability to effectively monitor drinking water safety.
  - Funding and staffing.
    - Between 2013/14 and 2018/19, expenses for the Office of Drinking Water only increased 4%, while over the same 5-year period the number of licensed water systems increased 53% and the number of drinking water officers decreased 8% (from 13 to 12).
  - Information technology and management reporting.

- The Department uses a number of stand-alone Microsoft Access databases for the majority of its information technology needs; these databases are not linked nor do they have adequate reporting capabilities. As a result, it is not currently possible for management to run meaningful reports that allow effective and efficient monitoring.

- Policies and guidance.

  - In examining the Department's policies and guidance, we noted there was a lack of clearly defined administrative policies.

STRATEGIC PLANNING AND PERFORMANCE MEASUREMENT

Weak strategic planning and performance measurement (SECTION 3)

Strategic planning is important because it provides direction, sets priorities, and identifies obstacles to achieving goals. Measuring performance is also important as it gives information about progress towards achieving goals and objectives, and assists with decision-making.

Some other jurisdictions published strategic plans for their oversight of drinking water safety, and reported periodically on progress against these plans. Given the many challenges that face the Department in overseeing drinking water safety in the province, it is important that they have both long-term and short-term action plans to guide their actions.

In examining the Department's planning and performance measurement for overseeing drinking water safety we found:

- Many risks were identified, but there was no clear and robust plan to address them.
  - Strategic planning is also needed to address long-term drinking water advisories.
- Few performance measures.
  - Performance measures are limited to public water systems and based on data we found to be unreliable.
  - Other jurisdictions have better publicly available performance measures.

Response from the Department of Conservation and Climate

We requested a response from officials of the Department of Conservation and Climate. They provided a summary, which is included below, and specific responses to each recommendation which are included in the SUMMARY OF RECOMMENDATIONS section of the report.

Manitoba Conservation and Climate (the Department) would like to thank the Office of the Auditor General for its review of provincial oversight of drinking water safety. The safety of Manitobans' drinking water supplies is paramount and Manitoba's drinking water supplies are safer today than ever before.

This audit offers an opportunity for the Department to continue to improve policies and processes to provide even more confidence and address any potential risks that have been identified. As was noted in the report, providing safe, reliable drinking water supplies for Manitobans requires more than just the licensing, monitoring and enforcement provided by the Office of Drinking Water.

Successful implementation of the recommendations in the report will require a whole-of-government approach. A coordinated effort between Conservation and Climate, Health, Seniors and Active Living, Economic Development and Training, Education, Families, Indigenous and Northern Relations, Municipal Relations and Central Services is already underway and will demonstrate commitment to continuous improvement of our management of drinking water and bolster public confidence in the continued safety of our drinking water.

The Department has taken the initiative to develop an ADM Committee on Drinking Water to continue to ensure safe drinking water and that any opportunities for improvement are addressed throughout the Manitoba government.

Why oversight of drinking water safety is important

Water is essential for human life. Manitobans depend daily on reliable, safe drinking water.

While outbreaks of waterborne diseases are not common in North America, they do happen. Within the last 20 years, an E.coli outbreak in Walkerton, Ontario killed seven people and made more than 2,000 people ill. Another outbreak in North Battleford, Saskatchewan made thousands of people ill. In addition, starting in 2014, a water crisis in Flint, Michigan began that resulted in 12 deaths and thousands of children being exposed to lead. These events remind us that we are not immune from the dangers of unsafe drinking water, and that ongoing vigilance is essential.

Legislative responsibility for drinking water safety

Manitoba proclaimed *The Drinking Water Safety Act* (the Act) in 2002, after the incident in Walkerton. The Act established the Office of Drinking Water. According to the Act, the purpose of the Office of Drinking Water is to:

- "Administer and enforce the Act and its regulations, licences, permits, advisories and orders made under it.
- Provide guidance, technical expertise and up-to-date information and educational materials about drinking water safety to water suppliers and the public.
- Communicate with government departments and agencies, including federal, provincial and local governments, and with other persons, to share expertise and to facilitate co-operative efforts in drinking water programs and policies."

The Office of Drinking Water operates within the Department of Conservation and Climate (the Department).

The Drinking Water Safety Act contains most requirements related to the oversight of drinking water with the exception of requirements related to:

- Certification of drinking water operators.
- Emergency response plans.

These requirements are set out in the Water and Wastewater Facility Operators Regulation under *The Environment Act.* The Environmental Approvals Branch, within the Department, administers these requirements.

Others with responsibilities for drinking water safety

The Department of Health, Seniors and Active Living (the Department of Health), through their involvement in policy, as well as in issuing advisories, also has a significant role to play. When Department staff identify that water is, or may be, unsafe, they communicate this to Medical Officers of Health from the Department of Health. Based on this information, the Medical Officer of Health can issue a drinking water advisory to protect public health. This responsibility is outlined in *The Drinking Water Safety Act* and *The Public Health Act.*

However, ensuring safe drinking water involves more than just these two departments. The Department of Education, through colleges, has a role to play in training operators. Other departments own and operate water systems, and therefore have a responsibility to train operators, and ensure that they meet regulatory requirements. It takes the work of many departments, as well as municipal and private water system owners and operators to ensure safe drinking water.

Standards for drinking water quality and safety

Health Canada publishes Guidelines for Canadian Drinking Water Quality. The Federal-Provincial-Territorial Committee on Drinking Water, of which Manitoba is a member, develops these guidelines. According to the Canadian Council of Ministers of the Environment, "these guidelines are scientifically-based criteria that characterize what is considered safe, clean, reliable and aesthetically-pleasing drinking water, regardless of whether the water is from a public, semi-public, or private supply."[1]

In Manitoba, The Drinking Water Quality Standards Regulation sets out the standards that water in Manitoba must meet to be considered safe to drink. For example, it sets out the maximum allowable concentration of arsenic (a naturally occurring trace contaminant in some groundwater in Manitoba) in drinking water. This regulation contains a subset of the Guidelines for Canadian Drinking Water Quality.

The Drinking Water Safety Regulation under the Act sets out requirements water systems must meet. For example, how often the drinking water must be tested for the presence of bacteria.

Types of water systems

The majority of Manitobans receive their drinking water from either a **public** or a **semi-public** water system.

Public water systems have 15 or more service connections. A service connection is the length of pipe from the water main to the water meter in a house or building. Public water systems therefore generally serve larger populations, but can also include smaller, sometimes seasonal, systems such as trailer parks and campgrounds. Public water systems are required to disinfect their drinking water (typically using chlorine).

[1] *From Source to Tap: Guidance on the Multi-Barrier Approach to Safe Drinking Water (CCME)*

Private water systems are systems that serve a single household; the Province does not regulate private systems.

A semi-public water system is any system that is not a public water system or a private water system. These water systems can have either:

- More than one connection, but less than 15 connections.
- Only one connection, but provide water to the public.

The majority of semi-public water systems are systems that serve the public and use an independent water source, such as a well. These water systems are usually in rural areas. They include restaurants, schools, hospitals, personal care homes and daycares.

As of March 31, 2019, 61% of the 1,014 licensed water systems in Manitoba were semi-public water systems.

Public vs. semi-public water systems

Public water systems have 15 or more connections.

A **semi-public** water system has less than 15 connections, but does not include systems that supply a single private residence. Many systems serve the public, such as restaurants, schools, and daycares.

Water systems across Manitoba range in size and complexity, from a well with some indoor plumbing, to a multi-million dollar water treatment plant with state of the art technology and an expansive distribution system. As well, water system owners can vary from government departments and municipalities to corporations and private citizens. Regardless of the owner and the size of the water system, the Act requires all owners to ensure that the drinking water they supply is safe and meets the standards.

Water sources and treatment

Drinking water in Manitoba comes from one of two sources:

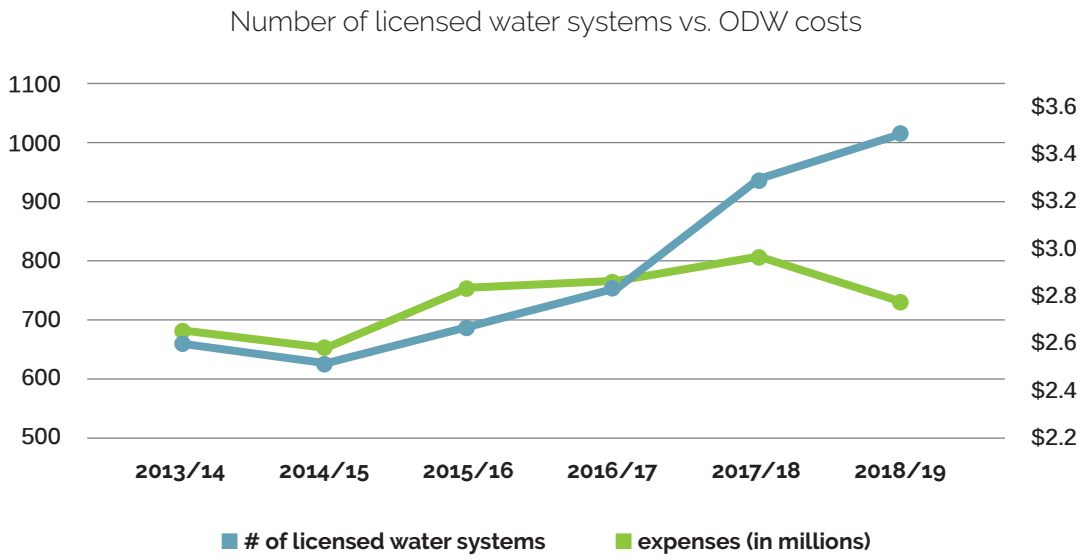
- Surface water (lakes or rivers).
- Groundwater (wells). Groundwater can be classified as:
  - Secure groundwater – less susceptible to bacterial contaminants.
  - Groundwater under the direct influence of surface water – where the well is too shallow or otherwise susceptible to surrounding surface water.

The treatment that is required to make water drinkable (also called 'potable') depends on the water source. The source affects both the risk of bacteriological contamination (such as E. coli) and the risk of other types of contamination. Secure groundwater is more susceptible to naturally occurring contaminants such as fluoride, arsenic, or uranium. Surface and groundwater under the direct influence of surface water are more likely to be contaminated from human activities and the surrounding environment. Different levels of water treatment are required to address these issues and can range from complex filtration and disinfection systems to no treatment at all.

Funding, staffing and service volumes

In 2018/19, expenses for the Office of Drinking Water (ODW) were nearly $2.8 million. As Figure 1 shows, between 2013/14 and 2018/19, ODW expenditures increased only 4%. At the same time, the number of licensed water systems in the province increased from 662 to 1,014, an increase of 53%. As well, the number of drinking water officers decreased from 13 down to 12.

Figure 1: The number of licensed water systems increased by 53% while ODW expenses only increased 4%



Source: Departmental annual reports

Staffing

Drinking water officers are the front-line staff responsible for ensuring the safety of Manitoba's drinking water by overseeing water system compliance with *The Act* and its regulations. Key activities of officers include:

- Monitoring activities, such as inspections of water systems.
- Monitoring of sampling results.
- Following up on sampling and inspection results.
- Outlining actions needed to remedy identified concerns.

Audit objective

Our objectives were to assess whether the Department had adequate:

- Systems and processes for licensing drinking water systems to ensure safe drinking water for the public.
- Systems and process for monitoring drinking water systems' compliance with licensing and other requirements.
- Strategic planning and performance measurement processes for overseeing drinking water safety.

Scope and approach

The audit included review and analysis of legislation, policies, databases, files, records, reports, correspondence and other documentation. We interviewed staff from the Department, including staff from the:

- Office of Drinking Water.
- Environmental Approvals Branch.
- Groundwater Management and Surface Water Management Sections of the Water Science and Watershed Management Branch.

We also met with Public Health Inspectors and the Medical Officer of Health for Environmental Health from the Department of Health, Seniors and Active Living. As well, we met with staff from the Department of Indigenous and Northern Relations related to water systems owned by that department. In addition, we visited all regional drinking water offices, and observed eight water system inspections.

We examined a judgmental sample of 30 water system files - 19 public water systems, and 11 semi-public water systems. We also tested a judgmental sample of ten newly issued licences, and 15 interim licences as well as 17 water systems that had been identified, but were not yet licensed. We obtained and analysed data from the Department, including for 32 water systems owned by the Department of Indigenous and Northern Relations, and for 79 water systems serving vulnerable populations.

We did not examine the permitting of the construction or altering of water systems. Nor did we examine the Medical Officer of Health's decisions regarding drinking water advisories.

Criteria

To assess the adequacy of the Department's systems and processes for licensing drinking water systems to ensure safe drinking water for the public, we used the following criteria:

Criteria
The Department should ensure that all public and semi-public drinking water systems have up-to-date operating licences.
The Department should have adequate standards for drinking water systems.
The Department's licensing decisions (initial, renewal, or amendment) should be supported by sufficient and appropriate evidence.

To assess the adequacy of the Department's systems and process for monitoring drinking water systems' compliance with licensing and other requirements, we used the following criteria:

Criteria
All required reports should be received and appropriately reviewed.
Periodic site inspections of water systems should be conducted with due diligence.
Complaints to water systems and the Department about drinking water safety should be adequately monitored.
All identified non-compliance should be appropriately followed up.

To assess the adequacy of the Department's strategic planning and performance measurement processes for overseeing drinking water safety, we used the following criteria:

Criteria
The Department should have adequate strategic planning processes for overseeing drinking water safety.
The Department should have adequate performance measurement processes.

1 Insufficient licensing of water systems to minimize safety risks

The Drinking Water Safety Act (the Act) and the related regulations set out the standards the Office of Drinking Water must follow in licensing water systems. The Act requires any person operating a public or semi-public water system to hold a current operating licence for the water system. It also requires operating licences to have an expiry date. The Department of Conservation and Climate (the Department) typically issues licences for five-year terms.

A water system licence communicates to the system operator what they must do to meet regulatory requirements, including the water quality standards they must meet (often achieved through water treatment) and the frequency of testing required.

Public vs. semi-public water systems

Public water systems have 15 or more connections.

A **semi-public** water system has less than 15 connections, but does not include systems that supply a single private residence. Many systems serve the public, such as restaurants, schools, and daycares.

We identified the following weaknesses with the licensing of public and semi-public water systems:

- Water systems were operating without a licence, or with an expired licence (SECTION 1.1).
- The rationale for not adopting some drinking water quality standards was unclear (SECTION 1.2).
- Water systems licensed without meeting regulatory requirements (SECTION 1.3).

1.1 Water systems operating without a licence, or with an expired licence

The Act states no person shall operate a public or semi-public water system without a licence. As of January 2019 the Department's data showed that about 40% of the 1,185 identified public and semi-public water systems in Manitoba did not have a current operating licence. For about half of these water systems the Office of Drinking Water had not issued a licence, and half had operating licences that had expired. Those not yet licensed are of most concern as licences communicate the regulatory requirements the system operators must meet to ensure the water is safe to drink.

Specifically we found:

- Licensing was not done in a reasonable timeframe.
- Most unlicensed systems in our sample were testing their drinking water, but not at the expected frequency.
- Significant progress in licensing water systems, but more work needed to identify new and existing unlicensed semi-public systems.

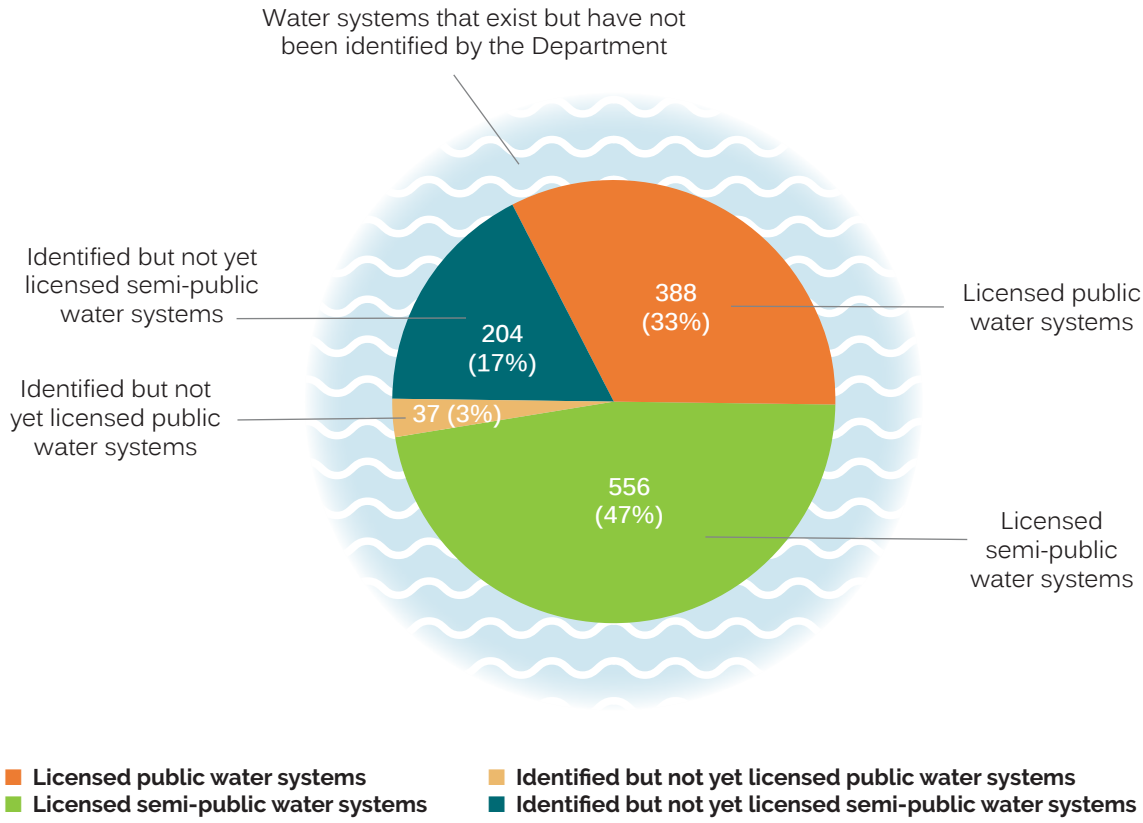
LICENSING NOT DONE IN A REASONABLE TIMEFRAME

We found that many water systems were not licensed, while other water system licences were expired. In a sample of ten newly issued licences, the average time from receiving the application to issuing the licence was 251 days; in one case, it took 590 days.

Water systems waiting to be licensed

As of January 2019, there were 1,185 identified water systems in the department's database. As **FIGURE 2** shows, 20% of these water systems had not been issued an operating licence. Further, there are an unknown number of water systems that have not yet been identified.

Figure 2: The universe of water systems in Manitoba as of January 2019



Source: Departmental data

The majority of the water systems identified but not licensed were semi-public water systems and small, often seasonal, public water systems. We tested a sample of 17 of these systems, and found that the Department had identified more than half of these over two years earlier.

The Department told us a common reason for the delay in issuing a water system operator an operating licence was that the system was unique and not best handled as a public or semi-public water system. This could include systems like cottage water co-ops and remote lodges where the water is not intended for drinking purposes. The Department has been working for several years to develop non-potable and non-consumptive policies to address these unique systems. To date, some of these water systems have been licensed while others remain unlicensed. The regional Medical Officer of Health has also issued drinking water advisories to some of these licensed systems—even though there may be no intention to use the water for drinking.

Department staff told us that non-potable and non-consumptive policies are developed together with the Department of Health. This complicates the process.

Water systems awaiting renewal

As of January 2019, there were also 239 expired licences awaiting renewal. Of concern, this was up 78% from 134 in September 2017. Expired licences continue to be in effect as long as a water system owner applies for renewal before the existing licence expires. However, the Department failing to renew expired licences sets a poor precedent for the timely reporting they expect from water systems.

Since 2013, the Department has set all licences to expire at the end of November. This creates a surge of renewals at the same time each year.

Recommendation 1

We recommend that the Department work with the Department of Health, Seniors and Active Living to implement policies for unique water systems (for example non-consumptive and non-potable systems). Once finalized, all water systems meeting the criteria for these unique water systems should be appropriately dealt with, and applicable requirements enforced.

MOST UNLICENSED WATER SYSTEMS IN OUR SAMPLE WERE TESTING DRINKING WATER, BUT NOT MEETING EXPECTED FREQUENCY OF TESTING

Despite not being licensed, the Department has had contact with the known unlicensed water systems. Most of the unlicensed systems we tested had submitted at least some tests of their drinking water in the last three years. However, there was evidence of the Department providing the operator instructions for testing requirements for less than half of these systems. The Department reviewed the results of these testing samples, and did follow up on adverse test results, but it did not ensure this sampling was done regularly. Only one of the 17 unlicensed systems we assessed had tested their drinking water at the frequency expected.

Recommendation 2

We recommend that the Department take steps to license unlicensed water systems and those operating with an expired licence as quickly as possible, and in the interim, all unlicensed systems should be given documented instructions for any treatment and testing required.

SIGNIFICANT PROGRESS IN LICENSING WATER SYSTEMS, BUT MORE WORK NEEDED TO IDENTIFY NEW AND EXISTING UNLICENSED SYSTEMS

As of March 2008, *The Drinking Water Safety Act* required semi-public water systems to be licensed, and the Department started licensing semi-public water systems in 2010. Between 2010 and 2019, the Department licensed over 600 semi-public water systems.

The Department started by licensing higher-risk systems that serve vulnerable populations, including schools, daycares and hospitals. In late 2017, the Office of Drinking Water worked with public health inspectors from Manitoba Health to identify small, unlicensed food handling establishments with their own water supply (that is, not connected to an already licensed system). In early 2018, the Department identified approximately 260 of these establishments.

To expedite the licensing of these food-handling establishments, the Department developed an interim licensing process. Interim licences were issued for up to five years, and had less requirements than regular licences. This was an effective process for licensing a large number of unlicensed water systems within a short amount of time. We note that the Department issued these interim licences only for what they deemed low-risk systems.

While the Department has made good progress licensing semi-public water systems, it does not have a systematic process to identify unlicensed water systems that exist or may come into operation. The

Department is reliant on drinking water officers to know their territory. This is particularly concerning for systems serving vulnerable populations.

The Department may become aware of new systems through involvement in committees, or discussion with staff from other departments. However, they have not developed formal ongoing information-sharing mechanisms with other parts of government to help identify new or existing unlicensed systems in a timely manner. It could use information obtained from other departments to do periodic reconciliations of data, to help identify gaps. In many cases, other government bodies (for example, other departments such as Manitoba Health, or Families, or municipal governments issuing business licences) may already be aware of water systems.

Recommendation 3

We recommend that the Department develop information-sharing mechanisms with other parts of government to help identify unlicensed water systems.

1.2 Rationale for not adopting some drinking water quality standards unclear

Health Canada publishes Guidelines for Canadian Drinking Water Quality. Manitoba's Drinking Water Quality Standards Regulation includes only 18 of the 72 health-based parameters (potential contaminants) included in Health Canada's 2017 Guidelines. The Department did not have documented analyses supporting why the other 54 parameters were excluded from the Regulation. While there are parameters that may not exist in Manitoba, we noted that some have been found in Manitoba at levels that exceeded the guidelines and are therefore relevant.

In 2017, nine parameters were added to the Regulation, but these parameters were added to the guidelines between 1998 and 2014. We did note that testing for some of these parameters (for example, haloacetic acids (HAA), a group of disinfection by-products) began before the Regulation was amended.

In 2019, Health Canada updated the guidelines for several parameters (including lead, manganese, and copper). See the FOLLOWING SECTION for a discussion of lead in drinking water. The Regulation has not been updated for these changes to date, despite that some of these parameters have been found in drinking water at levels that exceeded the guidelines.

Department staff told us that a complicating factor related to revising the Regulation is *The Regulatory Accountability Act* (commonly referred to as "red tape reduction" legislation). Due to this legislation, any changes to the Regulation have to be costed, and two regulatory requirements must be removed for each new one added.

Recommendation 4

We recommend that the Department periodically review and revise the Drinking Water Quality Standards Regulation to ensure standards are updated to reflect the Guidelines for Canadian Drinking Water relevant to Manitoba. Where these guidelines are not adopted as standards, the rationale, including support, should be documented.

Lead in drinking water

At the time of our audit, public water systems' licences required testing for lead in both raw and treated drinking water. In our sample of files, we found there were no water systems that exceeded the acceptable level of lead. However, it is noted that lead can enter into drinking water in the distribution system—even after being tested at the treatment plant. In Manitoba, tests of drinking water taken from the tap have shown levels of lead above the acceptable level.

Lead in drinking water is of most concern for children and unborn children, as even low levels of lead exposure have been associated with adverse effects on the intellectual development and behavior of children.

It is important that the Department consider how to address the risks of lead in drinking water, particularly to vulnerable populations.

Changes in Guidelines

In March 2019, Health Canada revised its Guidelines for Canadian Drinking Water Quality. The revised guideline lowered the acceptable level of lead and recommended testing at the tap. The new guideline also says, "Schools and daycare facilities should also be prioritized for monitoring to ensure that the most sensitive population (i.e. young children) is captured."

Testing at the tap is recommended. Even though a water system may meet Manitoba's current standards for testing at the source and after treatment, it is possible that the water at the tap has lead levels above the standard after having travelled through the pipes in the building.

An added complication is that lots of schools and daycares are not their own water system as they are part of a larger water system. For example, some schools and daycares within Winnipeg that are part of the City of Winnipeg water system. As such, it may not be enough to require water systems to conduct testing at the tap. Rather, those facilities that serve vulnerable populations, and are at an increased risk, should test their own drinking water.

Department communication

A fact sheet on lead on the Department's website recommends schools, childcare centres, and large buildings (such as apartments, condominiums, or hospitals) test their water for lead and develop a plan for any needed corrective action and a related communication plan. It lists potential corrective actions, but we note some may be costly while others involve posting "do not drink" signs (for example, for water fountains) or finding alternative drinking water sources.

In 2019, the Department explained the issue and lead testing procedures to the Manitoba Association of School Business Officials. This presentation stated a goal to have all fountains and taps tested (in schools) for lead within two years.

Ontario has legislation in place that requires all schools to test for lead. Other jurisdictions have also required schools to test for lead, and have committed to posting results to a public database. In March 2019, the Province asked school divisions and funded independent schools to complete testing, but compliance is voluntary, and results have not been made available to the public. The Department is aware of actions taken in some school divisions, but it is not actively monitoring compliance.

Recommendation 5

We recommend that the Province require all schools and childcare centres to promptly, and periodically thereafter, test for lead, and that the Department publicly report the results of these tests and corrective actions taken.

1.3 Water systems licensed without meeting regulatory requirements

The Department requires a person applying for an operating licence for a water system to submit:

- A completed operating licence application form.
- A map indicating the location of major water system components.
- A process drawing of the water treatment process, if applicable.
- A copy of the most recent chemical analysis of the raw untreated water.

It is important to note that in the majority of cases, when a person applies to operate a water system, the water system is already operating. The water system may therefore already be meeting or not meeting the relevant requirements, such as meeting all relevant water quality standards, or having an appropriately certified operator in place. Issuing an operating licence does not imply that the water system is meeting all requirements, but rather outlines the water quality standards and testing that the water system must meet.

Before issuing a new licence, the Department reviews the water system information on the application (for example, water source, population served, number of connections, etc.) for accuracy and reasonableness, and usually conducts a site visit.

In reviewing a sample of ten newly licensed water systems, we found that relevant documentation was not always on file. For example, four of ten did not have evidence of a chemistry analysis on file. Although not required, a few files had memos documenting information about the water system, including water quality information. These memos were a good summary of key baseline system information not documented elsewhere.

The Department advised they would generally issue new licences to all applicants, as well as renew all licences, regardless of whether the water system was meeting all water system requirements. Their rationale is that it is better to have a system licensed (even though it does not meet the requirements), and the specific requirements for that system clearly outlined, rather than leaving it unlicensed. It is therefore important to identify and develop plans to address non-compliance. See **SECTIONS 2.1** and **2.3** for a discussion of monitoring and follow-up of non-compliance.

Full and proper implementation of **RECOMMENDATION 9** in **SECTION 2.3** would help resolve the above noted issues.

2 Poor monitoring of licensed water systems increases safety risk

The Drinking Water Quality Standards Regulation, the Drinking Water Safety Regulation and Department policy all require ongoing monitoring of drinking water systems. The Department has established monitoring activities, including reviewing drinking water tests and measurements, conducting inspections of drinking water systems, and following up with drinking water system operators when there are concerns.

It is important that missed or late tests are followed up. When required tests are not completed, the safety of the drinking water is unknown.

In examining monitoring practices, including the related follow-up and communication of non-compliance, we found the following:

- Inadequate monitoring and follow-up of water testing and reporting (**SECTION 2.1**).
- Inspection processes need to be improved (**SECTION 2.2**).
- Insufficient steps taken to bring water systems into compliance (**SECTION 2.3**).
- A lack of certified water system operators (**SECTION 2.4**).
- Better public information on individual water systems needed (**SECTION 2.5**)
- Complaints are not tracked and documented (**SECTION 2.6**).
- Resource challenges are affecting the ability to effectively monitor drinking water safety (**SECTION 2.7**).

2.1 Inadequate monitoring of water testing and reporting

Legislation and Department policy require water systems to submit various reports (including sample results) to the Department. The required reports and testing frequencies differ, depending on each individual system's characteristics (such as water source, population served, public versus semi-public etc.). Each water system's requirements are indicated on its licence.

Required reports include:

- Bacteriological test results (which come to the Department direct from the lab).
- Monthly monitoring of disinfection and **turbidity**.
- General chemistry analyses.
- Disinfection by-product testing (when applicable).
- Periodic water system assessments.
- Annual reports for the public (for public water systems serving populations of over 1,000 people).

What is turbidity?

Turbidity is the measurement of how cloudy or hazy a liquid is; it is impacted by the amount of particles in the liquid.

In examining the Department's monitoring processes, we found there was no effective, consistent process to promptly identify and follow up on missing reports. Specifically we found:

- Poor follow-up of missing samples and reports.
- Weak follow-up of adverse test results.
- Safety risks not always communicated.

POOR FOLLOW-UP OF MISSING SAMPLES AND REPORTS

We examined the reports the Department received for 30 water systems, and the follow-up done for missing reports, for the 12-month period ending March 31, 2018. We also assessed additional samples for certain types of systems such as those with interim licences or serving vulnerable populations. We did not find significant concerns for public water systems serving large populations that we tested, but we found the following gaps:

Bacteriological testing

Every public and semi-public water system is required to submit water samples to an accredited lab to test for the presence of bacteria. The frequency and number of the tests depends on a number of factors, most significantly the water source and the population served by the water system. Testing requirements range from quarterly for a semi-public water system using a secure well, to weekly for a large public water system.

In examining the Department's monitoring of bacteriological testing we found:

- Six of the 30 water systems we tested missed submitting 40% or more of their required bacteriological samples.

  - One of these submitted none of the 12 required samples.
  - Another, a school, missed submitting 66% of its required samples.
- In an extended sample of 79 schools, daycares, and hospitals, 58% did not meet the required frequency for bacteriological testing in 2018.
- More than half of the 15 water systems with interim licences we examined failed to meet the required frequency for bacteriological testing.

There was no documented follow-up or enforcement for nearly all of the missing bacteriological samples. A contributing factor to the lack of enforcement was that the Department's policy was not clear on when staff should take action.

Monthly monitoring of disinfection and turbidity

Water systems that are required to disinfect their water, or that use filtration, must submit a monthly report to the Department within seven days of each month end. These reports include often-daily measurements of disinfection residuals as well as turbidity (when the water treatment includes filtration).

Of the water systems in our sample, 24 were required to submit these monthly reports. We found:

- Six missed sending in at least one required report.
  - Five of these were missing half or more of their required reports.

There was very little evidence of follow-up or enforcement action taken for missing reports.

General chemistry analyses

Chemistry analysis of drinking water is also required periodically. The frequency of testing ranges from every five years for a semi-public water system on a secure well, to quarterly for a large public water system.

We found chemistry analyses were generally done as required; only one of the 30 water systems we examined had not completed their required testing on time.

Disinfection by-product testing

When water systems using source water with high organic content (surface water and groundwater under the direct influence of surface water) use chlorine to disinfect the water, certain disinfection by-products can be formed which may be harmful to human health. Public water systems that use surface water or groundwater under the direct influence of surface water as a water source, as well as some semi-public water systems, are required by provincial regulations to test for these potentially harmful disinfection by-products.

We found disinfection by-products testing was not consistently done. In the 11 water systems in our sample that required testing for these by-products, four were missing required samples. In two of these cases, there was no follow-up, and no enforcement action was taken.

Water system assessments

Prior to 2017, *The Drinking Water Safety Act* and the Drinking Water Safety Regulation required an independent assessment be done of the infrastructure and water source of all public and semi-public water systems. These assessments were required to be done at least every five years. In 2017, the Department changed the legislation. It now allows self-assessments for some systems depending on the type and water source, and allows the Department to reduce the frequency of required assessments to once every ten years if satisfied it will not significantly impact water safety.

As of January 2019, six of 30 water systems in our sample had not submitted the assessments required by their operating licence. At that time, the outstanding assessments were on average 635 days late.

The Department's review and comments back to the water systems on these assessments were also not timely—on average, more than two years after receipt of the report.

Annual Reports

The Drinking Water Safety Regulation requires all public water systems that serve a population of 1,000 or more people to publish an annual report and submit it to the Department. Of the 30 water systems examined, 12 met these criteria and were therefore required to submit annual reports.

The Department received all but one required report, but did not adequately document its review of the 11 reports received, assessing whether the reports included all required information.

Full and proper implementation of RECOMMENDATION 15 would allow for enhanced monitoring of routine reporting.

WEAK FOLLOW-UP OF ADVERSE TEST RESULTS

The Department has a process for following up adverse bacteriological test results. When adverse test results are found, the lab immediately notifies both the drinking water officer and the water operator.

As well, the Drinking Water Quality Standards Regulation requires public water systems to re-sample on two consecutive days (or as close as possible). We found the required second sample was not always taken. In testing 30 water systems, 13 of 21 adverse samples were followed up with only one clean resample, rather than two.

Recommendation 6

We recommend that the Department develop a process, preferably using an improved IT system (see recommendation 15), to track and follow up on missed tests, and adverse test results.

SAFETY RISKS NOT ALWAYS COMMUNICATED

When a drinking water officer determines there is, or may be, a threat to drinking water safety, they are to communicate this to the regional Medical Officer of Health (MOH). The MOH then decides, based on the evidence, whether to issue a drinking water advisory.

The Department told us that a drinking water officer is expected to consider a drinking water advisory when a water system has failed to submit two consecutive required drinking water tests.

We note that there may also be a threat to drinking water safety (therefore justifying consideration of a drinking water advisory) when there is found to be:

- An exceedance of a chemical standard (including for disinfection by-products).
- A failure to meet microbial standards (for the reduction/inactivation of protozoa and viruses).

However, in the sample of 30 files we reviewed, we found:

- Five cases where two or more consecutive tests were missed and a drinking advisory was not issued.
- Advisories were not issued for exceedances of disinfection by-products, or for systems that were unable to meet the microbial standards.

We also noted several cases where data showed a chemical standard was exceeded, but an advisory was not issued.

While we recognize that an advisory may not be necessary whenever there is an exceedance or two tests have been missed, we found there was consistently no documentation on file indicating whether these instances were referred to the regional Medical Officer of Health, nor the rationale for the decision not to issue an advisory.

The Department communicates drinking water advisories on its website. However, when an advisory is not issued, the potential risk may not be communicated. Public water systems serving populations greater than 1,000 people are required to prepare annual reports that are required to disclose all non-compliance with standards. However, for smaller public water systems and semi-public water systems, if no advisory is issued then these risks are not communicated to users.

Full and proper implementation of **RECOMMENDATION 14** would ensure adequate communication of drinking water safety risks.

2.2 Inspection process insufficient

Department policy requires periodic on-site inspections of drinking water systems. The frequency of required inspections ranges from once a year for public water systems using surface water to once every five years for semi-public water systems on a secure well.

We reviewed the Department's inspection policy, examined a sample of 30 water system inspection files and accompanied drinking water officers on eight inspections. We found:

- The required inspection frequency was not adequately risk-based.
- Inspections were mostly done at the required frequency.
- Inspection process, documentation and follow-up was inadequate.

REQUIRED INSPECTION FREQUENCY NOT ADEQUATELY RISK-BASED

At the time of our audit, the Department's policy for inspection frequency considered two factors:

- Whether the water system is public or semi-public.
- The water source (for example, surface water is deemed riskier than groundwater, so there are more frequent inspections).

Applying the above in practice, a public system is to be inspected once every three years, but annually if its water source is surface water or groundwater under the direct influence of surface water. A semi-public system is to be inspected just prior to its licence expiry date (every five years), but every three years if the water source is surface water or groundwater under the direct influence of surface water.

The Department's inspection policy does not adequately consider risk. A risk-based inspection frequency policy needs to consider the likelihood of an adverse event occurring in the first place (potentially higher in a semi-public water system) and the potential impact of the adverse event (public water systems are viewed as having a larger impact as they often serve larger populations).

Some jurisdictions have more frequent inspection frequencies than Manitoba. For example, Alberta requires inspections every two years for systems with secure groundwater. In Manitoba this would be every three years for a similar public system; every five years for a similar semi-public.

In determining the frequency of required inspections, the Department does not consider:

- The water system's compliance history.
- The riskier nature of systems lacking certified operators (see **SECTION 2.4** for a discussion of certified water system operators).
- The size or vulnerability (for example serving children, or the elderly) of the population the water system is serving.

The Department has been aware for some time that its inspection frequency is insufficiently risk-based. It developed a new inspection policy in the spring of 2018 that requires an annual inspection if the water system has a record of non-compliance or has been issued a drinking water advisory, but this policy was not implemented as of the end of 2019. We note that the draft policy does not reduce the inspection frequency for water systems with good compliance records. This might help free up resources to visit systems that are more non-compliant.

Several other jurisdictions, as well as the public health inspectors in Manitoba Health, use a risk assessment tool to drive regulatory activities, including inspections. Using such a tool would enable inspection frequency to be based on an individual water system's assessed risk, and could take into account all relevant factors including compliance history, and whether the water system had a certified operator.

Recommendation 7

We recommend that the Department implement a risk-based approach, considering an individual water system's risks, for setting the priority and frequency of inspections of water systems.

INSPECTIONS MOSTLY DONE AT REQUIRED FREQUENCY

Most of the 30 water systems we examined were inspected according to the Department's required inspection frequency.

As of May 2019, the Department's data showed that 87 (7%) of the water systems had not been inspected as frequently as required. While this may have been the case, it is also possible that the inspections were done, but not recorded.

INSPECTION PROCESS, DOCUMENTATION AND FOLLOW-UP INADEQUATE

In examining 30 water system files and accompanying drinking water officers on eight inspections we noted concerns related to the:

- Inspection process and documentation.
- Communication of inspections results.
- Follow-up of non-compliance.
- Supervisory review of inspection results.

Inspection process and documentation

In doing inspections, despite the guidance saying that samples would be taken during inspections, drinking water officers rarely took water samples for bacteriological testing. Officers took samples during one of 14 inspections we examined in our sample of 30 files, and did not take any samples during the eight inspections we observed.

While drinking water officers used checklists to guide their inspections, they were often incomplete. Without the checklists being fully completed, it is difficult to determine whether all requirements were assessed during the inspection. We also noted that in several cases once the inspection was completed the checklist was not kept on file.

Communication of inspection results

During the water system inspections we observed, drinking water officers discussed the results of their inspections with water system operators at the conclusion of their site visits. Officers also documented summarized results of their inspections in inspection letters sent to the water system's owners. In reviewing inspection follow-up letters, we found:

- 12 of 15 inspection follow-up letters did not accurately reflect recent compliance issues otherwise noted in the Department's records.
- Letters sent were not always timely. For the eight inspections we observed, letters were sent an average of 60 days after the inspection, with one letter sent 136 days later.

Follow-up on non-compliance

In examining the 30 water system files, we often found no evidence of follow-up for items of non-compliance noted on the inspection checklists.

There was no current guidance or consistent practice for following up on non-compliance items noted in the formal inspection letters sent to the water systems. Officers told us they follow up verbally, or during the next inspection, but for many semi-public systems that could be five years later.

No supervisory review of inspection results

We expected a supervisor to review each water system inspection file. We also expected supervisors to regularly complete quality assurance reviews on a sample of water system files. We found that the Department does not have an expectation that a supervisor review inspection files nor is there an expectation that quality assurance reviews are done.

Recommendation 8

We recommend that the Department develop a more thorough inspection process that includes:

- Updated guidance for following up items of non-compliance.
- Supervisory review of inspection results and follow-up actions taken.

2.3 Insufficient steps taken to bring water systems into compliance

When water systems are found to be non-compliant, the Department needs to take steps to bring those systems into compliance to ensure the related safety risks are addressed. In looking at the steps the Department has taken, we found:

- Non-compliance was ongoing, but plans for achieving compliance are no longer required.
- High levels of non-compliance by water systems owned by the Department of Indigenous and Northern Relations but limited enforcement action taken.
- Enforcement actions were rare and used inconsistently.

NON-COMPLIANCE ONGOING, BUT COMPLIANCE PLANS NO LONGER REQUIRED

Water system non-compliance has been ongoing for years. At the time of our audit, information from 2015 on the Department's website showed that about 40% of Manitoba's public water systems (many smaller systems using surface water or groundwater under the direct influence of surface water) did not meet one or more of Manitoba's drinking water quality standards.

Prior to 2017, the Drinking Water Quality Standards Regulation required water systems to develop plans for how they planned to come into compliance. These were required only for public systems and only for non-compliance with drinking water quality standards—so not for semi-public water systems and not for non-compliance with any other regulatory requirements (for example, lacking certified operators). Even though it was a requirement, compliance plans were not always in place when required.

In 2017, the Regulation was amended to remove the requirement for compliance plans.

Recommendation 9

We recommend that the Department require all non-compliant water systems to develop plans, with timelines, for how they will come into compliance with all requirements. Where non-compliance persists, enforcement actions should be taken.

HIGH LEVELS OF NON-COMPLIANCE BY WATER SYSTEMS OWNED BY THE DEPARTMENT OF INDIGENOUS AND NORTHERN AFFAIRS

There were 32 water systems that were owned by the Department of Indigenous and Northern Relations (INR). These water systems had a high rate of ongoing, and significant, non-compliance. For example, we found only five of these 32 water systems had a properly certified operator and most had missed multiple required samples.

Drinking water officers told us they were concerned that these systems were not held to the same standard, and that the unwritten policy was that enforcement was not to be used. While there was ongoing communication with INR regarding non-compliance, enforcement action was not escalated despite continued non-compliance.

The water systems owned by INR face challenges that are typical in the North, particularly when they lack road access. These include difficulty:

- Accessing spare parts and contractors.
- Getting samples to an accredited lab within the required time (Winnipeg has the only accredited labs in the province).
- Hiring and retaining certified operators.

Despite these challenges, it is important that the people relying on these drinking water systems can access safe drinking water, and if there is a risk, it should be communicated appropriately.

The Department has been aware of the non-compliance of these systems for some time. Since at least 2008, there have been interdepartmental working groups tasked with addressing these non-compliance issues, but the non-compliance continues.

There are some additional challenges with one government department trying to regulate another. In early 2019, the Department gave INR a document listing the many tickets it could have issued (but did not) over the last year, indicating fines of $373,000 could have been levied.

The federal government has contracted with a third party provider to train and support on-reserve operators (known as the "circuit rider program") to improve compliance and improve drinking water safety. The program has been effective for First-Nation-owned systems in Manitoba, and should be considered as part of the solution for the INR water systems.

Full and proper implementation of **RECOMMENDATION 11** would help resolve the above noted issues.

Recommendation 10

We recommend that the Department collaborate with the Department of Economic Development and Training to adequately train and support water system operators in smaller communities, in particular those owned by the Department of Indigenous and Northern Relations.

ENFORCEMENT ACTIONS RARE, APPLIED INCONSISTENTLY AND NOT ACCORDING TO DEPARTMENTAL GUIDANCE

When monitoring shows that a water system is not complying with its licence requirements, it is important that the Department follow up on the non-compliance promptly. Where non-compliance is ongoing, or serious, enforcement actions should be taken.

The Department's guideline on enforcement states that drinking water officers need to prioritize infractions of licence requirements based on the risk to public health, plus consideration of:

- Background and intent.
- Historical enforcement.
- Public consultation limitations.
- Resource limitations.
- Political implications.

Possible enforcement actions the officers can take to improve compliance include (in order of severity):

- Letter of direction.
- Written warning.
- Ticket.
- Charges.

Enforcement guidance indicates how drinking water officers are to determine which of the above possible actions should apply, with the direction that officers should use a risk-based approach that moves from education and outreach to enforcement. We found the officers were often not using the enforcement tools.

For example, as noted in **SECTION 2.1**, we found numerous water systems failed to collect and submit samples to a lab for analysis in accordance with their licence requirements, but we found the officers took little enforcement action. The guideline considers this infraction to be "Priority 1" (a top priority) that should result in laying charges.

We also noted water systems failing to disinfect the water supply in accordance with their licence requirements (another Priority 1 item), with the same lack of expected enforcement.

Enforcement was also applied inconsistently. In 2018, the Department issued 20 letters of direction, 14 warnings, one ticket, and laid three charges. But there were other instances of similar non-compliance that did not result in similar enforcement.

In none of these cases was there documented rationale to explain the lack of enforcement action taken.

Recommendation 11

We recommend that the Department use its enforcement activities when there is continued non-compliance or serious violations by any water system (including those owned by other government departments). In doing this the Department should monitor use of its enforcement activities to ensure:

- Actions taken comply with the Department's guideline on enforcement.
- Drinking water officers take enforcement actions consistently.

2.4 Lack of certified water system operators

The Water and Wastewater Facility Operators Regulation, under *The Environment Act*, requires certification of water system operators. This regulation also requires all water systems to be classified based on the size and complexity of the water system. All classified water systems must have an operator certified to at least the level of classification of the system. The Environmental Approvals Branch of the Department is responsible for water system classification and operator certification.

Without proper training, a water system operator may not have an adequate understanding of their water system and the importance of complying with their operating licence. Training is also important to make sure water system operators know how to identify and address potential risks.

We found:

- Water systems operating without a certified operator.
- Better coordination is required to ensure operators are certified.

WATER SYSTEMS OPERATING WITHOUT A CERTIFIED OPERATOR

At the time of our audit, there were a large number of water systems that had not been classified. Many of those not classified were small semi-public water systems licensed within the last few years.

Water system classification drives the operator certification requirements for a water system. If the system is not classified, then it is likely the system will not have a certified operator. Based on the number of systems that were not classified, we estimated that approximately half of the identified drinking water systems in Manitoba did not have a certified operator. Many of these systems were newer semi-public water systems.

In our sample of 30 water systems, nine did not have a certified operator (two public and seven semi-public), and another three (2 public and one semi-public) did not have an operator certified to the level of the water system.

The database the Environmental Approvals Branch used to track operator certification was not linked, or reconciled, to the Office of Drinking Water data. As a result, the Department was unable to identify which water systems had certified operators.

BETTER COORDINATION REQUIRED TO ENSURE OPERATORS ARE CERTIFIED

The Environmental Approvals Branch is responsible for operator certification. Despite this, the Branch is reliant on drinking water officers to verify operator certification during inspections of water systems. We found that in five of 14 inspection checklists, the certified operator question was not answered.

We also noted that for systems that did not have a certified operator, because the regulation assigning fines did not address this requirement, the Branch only had administrative enforcement actions available, such as email reminders. Since operator certification is not a requirement of the water system operating licence, legislation addressing licence requirements does not apply.

Better coordination between the Office of Drinking Water and the Environmental Approvals Branch is needed to ensure water systems without certified operators are identified and measures taken to enforce compliance when necessary.

Recommendation 12

We recommend that the Department use one database for water system and certified operator data. In the absence of this, we recommend that the Department regularly reconcile water system data to identify water systems without certified operators, and take steps to enforce compliance when necessary.

Certification of very small water systems

Although required by The Water and Wastewater Facility Operators Regulation, the Department does not enforce the requirement for very small, semi-public water systems to have a certified operator. Department officials acknowledge that these system operators need training, but not necessarily the extensive technical training currently required by this regulation.

Department officials told us that the Environmental Approvals Branch is responsible for developing a new certification process for these very small water systems. This would replace the current requirement for a certified operator for water systems that met certain criteria.

At the time of our audit, this new certification process was not in place, nor was there a timeline for its completion.

Recommendation 13

We recommend that the Department review, and adjust as necessary, operator certification requirements to ensure they are appropriate for the size and complexity of the water system. The Department should then develop and implement a plan, including a timeline, for having all operators, including those operating 'very small systems', properly trained and certified.

2.5 Better public information on individual water systems needed

The Department provides some data on its website for public water systems that were not meeting some standards. This information is limited to public water systems and only for certain standards, and the information is dated, with the most recent data from 2015.

We reviewed publicly available information in other Canadian jurisdictions and found examples of better public reporting in other provinces. For example, other jurisdictions' websites allow users to select a water system and see drinking water test results, as well as completed inspections, including assigning risk scores. Other jurisdictions also provided current lists of certified operators, and whether a given water system had a certified operator.

Recommendation 14

We recommend that the Department enhance the publicly available information on drinking water safety to include data on individual water system compliance with key drinking water safety and quality standards.

2.6 Complaints not tracked and documented

The Department is not tracking complaints made directly to them, or those made to water system owners and/or operators. As a result, the Department is not aware of how many complaints are being received. It is also not documenting any follow-up actions taken.

Drinking water officers told us they forward complaints received to the water system owners and/or operators, and continue to follow up until they are resolved.

The inspection checklist included a question about customer complaints. However, in the files we examined we found this step was not regularly completed.

2.7 Resource challenges impacting ability to monitor drinking water safety

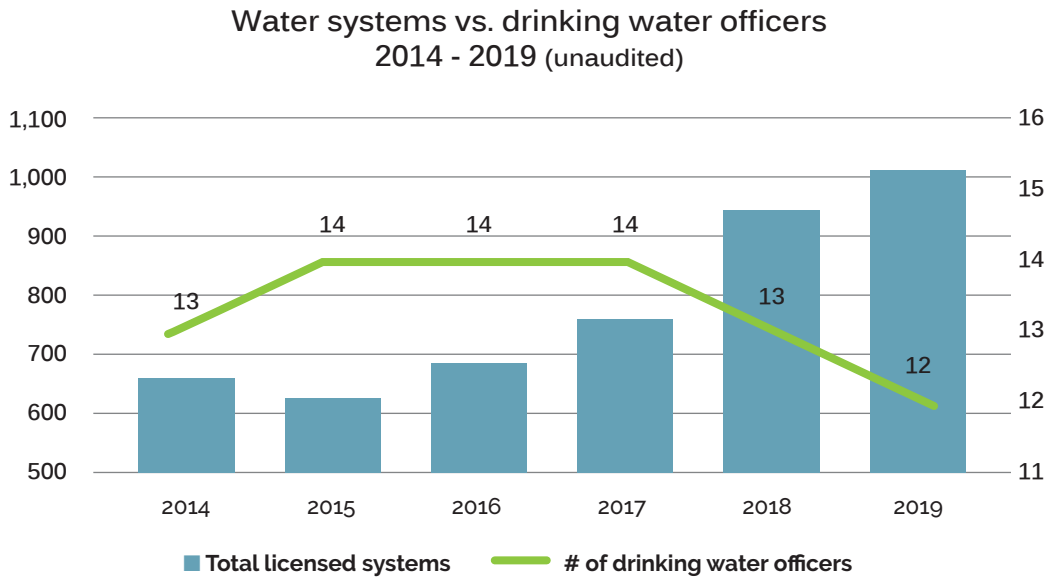
Oversight of drinking water safety is critically important as water is essential for human life and if unsafe water is consumed it can have disastrous effects. Given this, it is key that the Department and its staff have the right resources to properly oversee drinking water safety in Manitoba. Despite this, we found challenges related to:

- Funding and staffing.
- Information technology and management reporting.
- Policies and guidance.

FUNDING AND STAFFING

As noted in the **BACKGROUND** section, in 2018/19, expenses for the Office of Drinking Water (ODW) were nearly $2.8 million, only a 4% increase from five years earlier in 2013/14. As **FIGURE 3** shows, over the same period the number of licensed water systems increased from 662 to 1,104, an increase of 53%. As well, the number of drinking water officers *decreased* from 13 to 12. This means that the average caseload for each drinking water officer nearly doubled in just five years.

Figure 3: Number of licensed water systems increased 53% while the number of drinking water officers decreased by 8%



Source: Departmental Annual Reports and Departmental data

INFORMATION TECHNOLOGY AND MANAGEMENT REPORTING

The Department uses a number of stand-alone Microsoft Access databases for the majority of its information technology needs. These databases are not linked nor do they have adequate reporting capabilities. As a result, information is siloed and it is not currently possible for management to run meaningful reports that allow both effective and efficient monitoring. For example, management could not provide us with a list of certified operators, by water system, in the province.

An IT system that can provide meaningful reports, enables case management of water systems (including the recording of inspections and tracking of related follow-up), and better automation and tracking of reporting from water systems is imperative. This would allow for both more effective and efficient monitoring and would be invaluable in assisting the Department in fulfilling its oversight of drinking water safety role.

Recommendation 15

We recommend that the Department implement an IT system that would enable case management and better automation and tracking of water system reporting, allowing for efficient and effective management reporting.

POLICIES AND GUIDANCE

In examining the Department's policies and guidance, we noted there was a lack of clearly defined administrative policies. Specifically we found:

- There were a large number of policies, but they were not compiled into one policy manual.
- In some cases there were multiple versions of policies, and it was not clear which was in effect.
- Almost all policies were in draft form.
- There was some conflicting guidance.

We noted that the lack of clear guidance resulted in drinking water officers not taking consistent action. For example, conflicting guidance contributed to inconsistency on follow-up of missed bacteriological tests.

Recommendation 16

We recommend that the Department review existing policies and guidance and take steps to:

- Compile and maintain one complete policy manual.
- Clarify which policies are in effect.
- Eliminate conflicting guidance.

3 Weak strategic planning and performance measurement

Strategic planning is important because it provides direction, sets priorities, and identifies obstacles to achieving goals. Measuring performance is also important as it gives information about progress towards achieving goals and objectives, and assists with decision-making.

Some other jurisdictions published strategic plans for their oversight of drinking water safety, and reported periodically on progress against these plans. Given the many challenges that face the Department in overseeing drinking water safety in the province, it is important that they have both long-term and short-term action plans to guide their actions.

In examining the Department's planning and performance measurement for overseeing drinking water safety we found:

- Many risks were identified, but there was no clear and robust plan to address them (SECTION 3.1).
- Few performance measures (SECTION 3.2).

3.1 Many risks identified, but no clear and robust plan to address them

Effective strategic planning is particularly important to focus the limited resources available for achieving the desired outcomes. Despite this, the Department did not have a documented strategic plan for its oversight of drinking water safety.

As shown throughout this report, the Department needs to address many risks and challenges. A strategic plan would help focus the limited resources available on the activities of highest priority.

Throughout the audit, we found:

- Many issues were identified, showing the need for strategic planning.
- Strategic planning is also needed to address long-term drinking water advisories.

MANY ISSUES IDENTIFIED SHOW THE NEED FOR STRATEGIC PLANNING

Throughout the report, we identified many different areas where strategic planning would be beneficial. These included the following:

- Many water systems operating without a licence (as discussed in SECTION 1.1).
- Changing water quality guidelines, including recent changes to the guideline for lead in drinking water (as discussed in SECTION 1.2).
- Ongoing non-compliance (as discussed in SECTION 2.3).
- The high rate of non-compliance by water systems owned by the Department of Indigenous and Northern Relations (as discussed in SECTION 2.3).
- The lack of certified water system operators (as discussed in SECTION 2.4).
- Funding and staffing challenges (as discussed in SECTION 2.7).
- Information technology and management reporting challenges (as discussed in SECTION 2.7).

Recommendation 17

We recommend that the Department develop a strategic plan for its oversight of drinking water safety that includes measurable targets and timelines. The Department should report publicly on progress towards meeting its objectives.

STRATEGIC PLANNING ALSO NEEDED TO ADDRESS LONG-TERM DRINKING WATER ADVISORIES

In addition to the many challenges and risks identified throughout the report that would benefit from strategic planning, we noted that strategic planning is also needed to address long-term drinking water advisories.

Per the Department's website, "water advisories are issued for a drinking water system or a drinking water source by a Medical Officer of Health (Manitoba Health) due to a confirmed or suspected water quality issue." Drinking water advisories include:

- Boil water advisories – issued when drinking water may be compromised by bacteria or microorganisms.
- Drinking water avoidance advisories – issued when drinking water is compromised by contaminants that cannot be killed or removed by boiling the water.
- Water quality advisories – issued when drinking water may pose a low risk to health and water users can take actions to reduce their risk.

The Department's website also notes that water systems with drinking water advisories can be listed as follows:

- Short-term – taking immediate steps to address the advisory.
- Medium-term – taking steps to address the advisory within two to three years.
- Long-term – require significant financial capital funding to address major operational and treatment problems.

As of August 15, 2019, there were 68 long-term drinking water advisories, affecting a total population of just over 7,000 people. Of these advisories, 53 had been in place for more than five years. There were also 43 medium-term advisories affecting just under 3,500 people in total. More than half of these had been in place for more than three years.

Recommendation 18

We recommend that the Department, in developing its strategic plan for the oversight of drinking water safety, develop strategies and set targets for reducing long-term drinking water advisories.

3.2 Few performance measures

The Drinking Water Safety Act requires an annual public report on the activities of the Office of Drinking Water. A separate annual report is not prepared for the Office of Drinking Water; the Department believes it is meeting this requirement by including Office of Drinking Water information in the Department's annual report.

In reviewing performance information in the Department's annual report for the Office of Drinking Water and in other public information in other Canadian jurisdictions, we found:

- Performance measures are limited to public water systems and based on data we found to be unreliable.
- Other jurisdictions have better publicly available performance measures.

PERFORMANCE MEASURES LIMITED TO PUBLIC WATER SYSTEMS AND DATA USED UNRELIABLE

The performance information for the Office of Drinking Water in the Department's annual report is focused on output measures and includes a description of the Office's work with various government committees and stakeholders. The Department's annual report also included three performance measures focused on drinking water outcomes:

- % of public water systems that achieve full compliance with their bacteriological monitoring requirements.
- % of public water systems that achieve full compliance with all physical, chemical and microbiologic standards that apply to their system.
- % of public water systems that achieve full compliance with their disinfection monitoring requirements.

We note that these performance measures only consider data for public systems. There is no similar data tracked for semi-public systems, although these may have a higher likelihood of an adverse event, and the majority of licensed water systems are semi-public. In addition, the data used in the annual report comes from an Access database used by the Department. We found this data to be unreliable.

OTHER JURISDICTIONS HAVE BETTER PUBLICLY AVAILABLE PERFORMANCE MEASURES

We reviewed publicly available information in other Canadian jurisdictions and found examples of better performance measures in other provinces.

Some of the other data publicly reported by other jurisdictions included:

- Certified operator statistics over time, in total and by different system classes.
- Percentage of water systems whose operators have some level of certification.
- Water system inspection summary findings, including assigned risk scores.
- Number of adverse water quality incidents (e.g. positive tests for bacteria and/or lapses in disinfection).
- Number of long-term drinking water advisories lifted.

Full and proper implementation of **RECOMMENDATION 17** would address the above noted issues.

Additional information about the audit

This independent assurance report was prepared by the Office of the Auditor General of Manitoba on provincial oversight of drinking water safety. Our responsibility was to provide objective information, advice and assurance to assist the Legislature in its scrutiny of the government's management of resources and programs, and to conclude on whether the Department of Conservation and Climate complies in all significant respects with the applicable criteria.

All work in this audit was performed to a reasonable level of assurance in accordance with the Canadian Standard for Assurance Engagements (CSAE) 3001—Direct Engagements set out by the Chartered Professional Accountants of Canada (CPA Canada) in the CPA Canada Handbook —Assurance.

The Office applies Canadian Standard on Quality Control 1 and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

In conducting the audit work, we have complied with the independence and other ethical requirements of the Rules of Professional Conduct of Chartered Professional Accountants of Manitoba and the Code of Values, Ethics and Professional Conduct of the Office of the Auditor General of Manitoba. Both the Rules of Professional Conduct and the Code are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behavior.

In accordance with our regular audit process, we obtained the following from management:

1. Confirmation of management's responsibility for the subject under audit.
2. Acknowledgement of the suitability of the criteria used in the audit.
3. Confirmation that all known information that has been requested, or that could affect the findings or audit conclusion, has been provided.

Period covered by the audit

The audit covered the period between April 1, 2016 and March 31, 2018. This is the period to which the audit conclusion applies. However, in some cases, we also examined periods prior and/or subsequent to this timeframe to better understand audit matters.

Date of the audit report

We obtained sufficient and appropriate audit evidence on which to base our conclusion on June 23, 2020, in Winnipeg, Manitoba.

Summary of recommendations

RECOMMENDATION 1

We recommend that the Department work with the Department of Health, Seniors and Active Living to implement policies for unique water systems (for example non-consumptive and non-potable systems). Once finalized, all water systems meeting the criteria for these unique water systems should be appropriately dealt with, and applicable requirements enforced.

Response of officials:

The Department agrees with this recommendation and is already working towards full implementation in collaboration with the department of Health, Seniors and Active Living.

RECOMMENDATION 2

We recommend that the Department take steps to license unlicensed water systems and those operating with an expired licence as quickly as possible, and in the interim, all unlicensed systems should be given documented instructions for any treatment and testing required.

Response of officials:

The Department has already eliminated the backlog for public water systems.

RECOMMENDATION 3

We recommend that the Department develop information-sharing mechanisms with other parts of government to help identify unlicensed water systems.

Response of officials:

The Department agrees with this recommendation and will continue to build on existing collaborative approaches to develop robust information sharing mechanisms with other departments as required.

RECOMMENDATION 4

We recommend that the Department periodically review and revise the Drinking Water Quality Standards Regulation to ensure standards are updated to reflect the Guidelines for Canadian Drinking Water relevant to Manitoba. Where these guidelines are not adopted as standards, the rationale, including support, should be documented.

Response of officials:

The Department already reviews all changes to the Guidelines for Canadian Drinking Water for their applicability to Manitoba and also participates on a federal-provincial-territorial committee that provides oversight to the development of the national guidelines. Though the rationale used to review and adopt (or not adopt) the Guidelines for Canadian Drinking Water for Manitoba is well known to staff, the department agrees to articulate this knowledge through more formal documentation with Manitoba Health, Seniors and Active Living.

RECOMMENDATION 5

We recommend that the Province require all schools and childcare centres to promptly, and periodically thereafter, test for lead, and that the Department publicly report the results of these tests and corrective actions taken.

Response of officials:

The Department agrees with this recommendation in principle and commits to developing protocols for testing for lead using a whole-of-government and science-based approach. The department notes that lead levels in Manitoba's source water is very low and that lead contamination typically occurs as the water travels through service connections and household plumbing. Facilities without lead service lines or solder and with newer fixtures would generally not require regular testing.

RECOMMENDATION 6

We recommend that the Department develop a process, preferably using an improved IT system (see RECOMMENDATION 15), to track and follow up on missed tests, and adverse test results.

Response of officials:

The Department agrees with this recommendation and will continue exploring suitable solutions.

RECOMMENDATION 7

We recommend that the Department implement a risk-based approach, considering an individual water system's risks, for setting the priority and frequency of inspections of water systems.

Response of officials:

The Department has consulted with other jurisdictions to improve our approach to risk-based inspections by expanding the set of risk factors used to determine priority and frequency of inspections.

RECOMMENDATION 8

We recommend that the Department develop a more thorough inspection process that includes:

- Updated guidance for following up items of non-compliance.
- Supervisory review of inspection results and follow-up actions taken.

Response of officials:

The Department agrees with this recommendation and is already working to implement it through a new inspection checklist along with procedures to enhance the process as well as a supervisory review procedure.

RECOMMENDATION 9

We recommend that the Department require all non-compliant water systems to develop plans, with timelines, for how they will come into compliance with all requirements. Where non-compliance persists, enforcement actions should be taken.

Response of officials:

The Department agrees with this recommendation in principle, noting that compliance plans and enforcement may not be effective in addressing compliance issues where the system owner cannot finance the required upgrades to their infrastructure. The department will identify systems where non-compliance is due to long-standing infrastructure issues, and will work across government to identify where gaps and opportunities may exist.

RECOMMENDATION 10

We recommend that the Department collaborate with the Department of Economic Development and Training to adequately train and support water system operators in smaller communities, in particular those owned by the Department of Indigenous and Northern Relations.

Response of officials:

The Department agrees with this recommendation in principle, however in working with the department of Indigenous and Northern Relations, it has been identified that there are systemic issues to ensuring adequate operators on as sustained basis that we continue to seek suitable solutions with the department and communities.

RECOMMENDATION 11

We recommend that the Department use its enforcement activities when there is continued non-compliance or serious violations by any water system (including those owned by other government departments). In doing this the Department should monitor use of its enforcement activities to ensure:

- Actions taken comply with the Department's guideline on enforcement.
- Drinking water officers take enforcement actions consistently.

Response of officials:

The Department agrees with this recommendation and is in the process of implementing this recommendation. However, it is also noted that the goal ultimately is to achieve compliance and although enforcement may assist in achieving compliance, it is not the sole approach available to the department.

RECOMMENDATION 12

We recommend that the Department use one database for water system and certified operator data. In the absence of this, we recommend that the Department regularly reconcile water system data to identify water systems without certified operators, and take steps to enforce compliance when necessary.

Response of officials:

The Department agrees with this recommendation and has already taken steps to implement it.

RECOMMENDATION 13

We recommend that the Department review, and adjust as necessary, operator certification requirements to ensure they are appropriate for the size and complexity of the water system. The Department should then develop and implement a plan, including a timeline, for having all operators, including those operating 'very small systems', properly trained and certified.

Response of officials:

The Department agrees with this recommendation and will continue exploring suitable solutions.

RECOMMENDATION 14

We recommend that the Department enhance the publicly available information on drinking water safety to include data on individual water system compliance with key drinking water safety and quality standards.

Response of officials:

The Department agrees with the recommendation and will work with water system owners to enhance public access to this data, building on our commitment to open government.

RECOMMENDATION 15

We recommend that the Department implement an IT system that would enable case management and better automation and tracking of water system reporting, allowing for efficient and effective management reporting.

Response of officials:

The Department agrees with this recommendation.

RECOMMENDATION 16

We recommend that the Department review existing policies and guidance and take steps to:

- Compile and maintain one complete policy manual.
- Clarify which policies are in effect.
- Eliminate conflicting guidance.

Response of officials:

The Department agrees with this recommendation and is working to implement it.

RECOMMENDATION 17

We recommend that the Department develop a strategic plan for its oversight of drinking water safety that includes measurable targets and timelines. The Department should report publicly on progress towards meeting its objectives.

Response of officials:

The Department agrees with this recommendation and is working to implement it.

RECOMMENDATION 18

We recommend that the Department, in developing its strategic plan for the oversight of drinking water safety, develop strategies and set targets for reducing long-term drinking water advisories.

Response of officials:

The Department agrees with this recommendation in principle as this is our objective and long term goals. The role of Conservation and Climate is to ensure affected communities are aware of the boil water advisory in effect so that they do not drink unsafe water. Addressing systemic, long-term issues that result in these long-term drinking water advisories is a multi-stakeholder endeavor.

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Valued for positively influencing public sector performance through impactful audit work and reports.

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To focus our attention on areas of strategic importance to the Legislative Assembly, and to provide Members of the Legislative Assembly with reliable and efficient audits.

Our mission includes easy-to-understand audit reports that include discussions of good practices within audited entities, and recommendations that, when implemented, will have a significant impact on the performance of government.

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