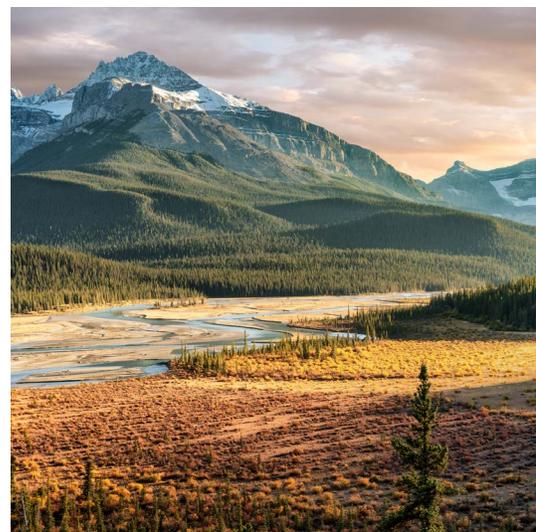# Municipal Water Conservation Guide

A Roadmap for Getting Started and Advancing Practices

2026

Alberta Municipalities
Strength In Members

Welcome to the Guide!

Imagine this: it's a hot, dry summer. Your municipality is fielding questions from residents about water restrictions, Council is asking for updates on water conservation efforts, and you're not sure where to begin. Maybe you have some data, maybe you don't. Maybe you're just starting to implement new water conservation efforts, or maybe you want to take your water conservation work to the next level.

You're not alone

Population and industrial growth, urbanization, climate change, and aging infrastructure are all putting pressure on water systems. Across Alberta, municipalities of all sizes are facing new pressures to manage water wisely – whether it's responding to drought, meeting regulatory requirements, or wanting to align water management practices with their community's objectives and growth plans. Ensuring a reliable supply of water is critical for the long-term health and viability of communities across the province and the actions municipalities take to increase water conservation, efficiency of water distribution systems, and productivity of water and wastewater treatment systems are essential to achieving that objective.

This Guide is here to help.

The Municipal Water Conservation Guide will walk you through essential steps to:

- Understand your municipality's water context (sources, infrastructure, delivery partners, challenges, and opportunities).

- Identify and collect the information you need to take meaningful action.

- Connect water conservation to other municipal priorities.

- Identify and prioritize actions you can take.

Who Should use this Guide?

This Guide is primarily designed for municipal administrators and technical staff responsible for water management and planning. In some sections of the Guide, you'll find information highlighting where Council Involvement is recommended.

The Guide aims to meet you where you are – whether you are just beginning or more advanced in your practices – while also showing what progression looks like and how you might continue to advance. It's important to note that these stages, getting started and advancing practices, are not fixed.

Many municipalities will find they are just getting started in some areas, while already more advanced in others. This variation is normal and reflects differences in resources, priorities, and local context. Whether you are getting started, advancing practices, or somewhere in between, the Guide provides practical, actionable steps.

If you are working on advancing practices

The Guide provides practical steps for municipalities at any stage of their water conservation journey. While many activities focus on building a strong foundation, we also include content to support municipalities that are ready to advance their practices.

This advanced content is distinguished by:

- Callouts and tips labeled as "Advancing Practices" for users who want to go beyond the basics.

- Examples of next steps for each major activity, showing what progression looks like.

- Links to technical resources and ABmunis tools for deeper guidance.

	IF YOU ARE GETTING STARTED, IT MIGHT LOOK LIKE:	IF YOU ARE ADVANCING PRACTICES, IT MIGHT LOOK LIKE:
Data Collection and Monitoring	We are just beginning to implement metering or have limited/no metering of water consumption. Our estimates of water loss are based on basic calculations (e.g., annual volumes only).	We have comprehensive metering and regular data collection (e.g., monthly or real-time). We use water audits and technological tools to pinpoint losses and track efficiency. We benchmark performance against industry standards and use metrics to measure progress.
Infrastructure and Operations	We respond to leaks as they are reported but don't have a proactive leak detection program.	We implement pressure management or similar operating strategies to minimize leaks and failures. We prioritize infrastructure renewal based on water loss data and system performance.
Planning and Integration	We don't have a formal water conservation plan in place. Water conservation is not yet linked to other municipal priorities.	We are working on integrated water conservation strategies linked to asset management and climate adaptation plans. We use performance metrics and benchmarking to track progress made on water conservation initiatives.
Communication and Engagement	Our communication with Council and the public about water consumption or conservation is informal or ad hoc.	We report to Council about our water conservation efforts We engage the community through education campaigns.

How to Use the Guide

The Guide is organized into four sections:

- **Introduction:** Provides context and background on why water conservation matters, how this Guide came about, and how it supports Alberta Municipalities' Water Conservation, Efficiency, and Productivity Plan (Water CEP Plan).

- **Step 1. Take Stock:** Helps you assess your current water system and organizational context.

- **Step 2. Make a Plan:** Guides you to identify strengths, challenges, and actions based on what you learned in Step 1.

- **Step 3. Implement:** Supports you in prioritizing, acting on, and monitoring your water conservation efforts as identified in Step 2.

You can work through each section step-by-step or jump to the parts most relevant to your needs. Use the Workbook Activities throughout the Guide and the Water Conservation Roadmap to organize your work and share your progress with your team and Council.

Workbook Activities

Throughout the Guide, you'll find workbook activities designed to help you apply what you learn. These activities include icons to indicate the type of activity. Look for:

In the workbook activities, you'll find pre-populated sample responses for both "getting started" and "advancing practices" levels to help you see what completion looks like and for inspiration for your own entries.

Check list
Task to complete or confirm

Reflect
Moments to pause and consider your context or priorities

Document
Opportunities to record relevant information or notes

Discuss
Prompts for conversation

Activity
Opportunities to participate and record learnings

Tool Tip
Informative message for all users.

Using the Water Conservation Roadmap

The Water Conservation Roadmap is a comprehensive editable table designed to consolidate your work into a single, actionable plan. The Roadmap serves as a landing point for what emerges as you progress through Steps 2 and 3. By the end of the Guide, the Roadmap will provide a clear, comprehensive plan that supports you in getting started and outlines a path for advancing your water conservation efforts.

A*	B*	C	D*
Information Gap/Challenge to Be Addressed or Strength to Leverage* *The specific gap, challenge, or opportunity this action responds to or the strength this action leverages*	**Action** *What do you plan to do?**	**What the Action Aims to Accomplish** *The intended outcome or benefit*	**Roles and Responsibilities*** *Who is leading, accountable, consulted, and/or informed for this action?*
Missing information about water consumption	Consult with operators to determine the best way to collect more data on our system.	Improves accuracy and completeness of water consumption data.	Operations Manager (Lead), Council (Accountable), Finance (Consulted)
Missing information	Identify opportunities to	Improves accuracy of water loss estimates	Operators (Consulted),

Table of Contents

Introduction

Recognizing challenges for municipalities in taking action on water conservation, Alberta Municipalities ("ABmunis") renewed its Water Conservation, Efficiency, and Productivity Plan (Water CEP Plan) in 2024. The updated Water CEP Plan is grounded in current research, engagement with municipal leaders, and a commitment to environmental stewardship and sustainable service delivery. It sets out clear targets and practical steps for municipalities to manage water demand, improve efficiency, and protect aquatic health.

This Municipal Water Conservation Guide ("Guide") emerged from this work as a practical resource to support municipalities in better understanding their current water conservation efforts and identifying areas for improvement, directly supporting actions identified in the Water CEP. It is intended to work alongside the online tools available on the ABmunis website.

It provides a clear, stepwise process for municipal staff and elected officials to assess their water conservation and efficiency practices, identify opportunities, and take action.

By following the steps in this Guide, municipalities can make informed decisions and implement effective strategies for sustainable water management in their communities.

ABmunis Water Management Information

ABmunis has a variety of information on water management available here, including:

- Water Conservation
- Watershed Management
- Water and Wastewater
- Planning and Funding
- Policies and Resolutions

Step 1. Take Stock

Understanding your current context is an essential first step that helps you leverage available information and avoid guesswork. Taking stock involves gathering and documenting information about your municipality's water system, organizational context, and current practices as it relates to water conversation. This sets the foundation for informed decision-making and effective planning in the unique context of your municipality and helps you identify where you might need to dig deeper.

How to Take Stock

Taking stock involves identifying and documenting information across 4 key areas:

- Your municipal context
- Your community's water balance
- Your physical water infrastructure
- Your communication processes

> **You don't need to take stock of information in the four key areas in the order they are presented here. These areas form the foundation for effective water conservation planning. What matters most is that you get started! Consider starting with the information that is easiest or most readily available to you, building momentum with these quick wins.**

Take Stock of Municipal Context

**Your municipal context is the foundation for all water conservation efforts.
It includes your municipality's:**

- **People:** the staff, departments or committees involved in water management.

- **Partners:** people or organizations you work with, such as regional water commissions, non-municipal service providers like EPCOR, Aquatera , or industrial water users.

- **Motivations:** the municipal priorities driving your water conservation efforts and any policies, plans, or Council directives that guide your work.

- **Water source:** where your municipality's water comes from.

- **Existing water conservation initiatives:** the measures your municipality is taking/has taken to conserve water.

All the previously mentioned components of your municipal context shape how your municipality manages water. Use the prompts below to take stock of your municipal context.

List the staff, departments, or committees involved in water management:

DEPARTMENT	STAFF	ROLE IN WATER CONSERVATION
Finance	Billing Clerk	Monthly utility billings.
		Has access to information about the number of ratepayers and how much water they use.
Engineering	Municipal Engineer	Maintains understanding of how the municipal water system functions.
		Owner of water system model and long range plan, working with developers and operators on pressure management and required flows
		Responsible for general servicing standards, to which water system is built
Project Management	Project Manager	Coordinates projects, such as infrastructure upgrades
		Implements community water conservation initiatives
Public Works	Manager, Supervisor, Operator	Oversees operation and maintenance of the municipal water system and facilities
		Responds to system breaks or leaks on as needed basis

Identify your partners and their roles:

PARTNER	PARTNER'S ROLE	RELATIONSHIP TO MUNICIPAL SERVICE DELIVERY	HOW WE PARTNER
Regional Water Commission	*Governance and management of Commission-owned infrastructure*	*Water source - we buy water from the Commission. The Commission sets the purchase rate that we pay.*	*One of our Councillors sits on the Board of the Regional Water Commission. They advocate for our needs and participate in Commission decision-making.*

Select the priorities driving your water conservation efforts:

The purpose of our water conservation efforts is to..

..comply with regulations

..prepare for water shortages

..save money

..respond to community interests

Other: _____

_____

Note any policies, plans, or Council directives that guide your work:

PLAN/POLICY/ DIRECTIVE	CONNECTION TO WATER CONSERVATION
Strategic Plan	*Sets overall municipal priorities, which may include water conservation goals.*
Water license	*Regulates how much water can be withdrawn from a source. Compliance is essential for sustainable water use as governed by the Water Act.*
Emergency Response Plan	*Includes protocols for water use restrictions and conservation during emergencies (e.g., drought, contamination).*
Climate Resilience/ Adaptation Plan	*Integrates water conservation as part of climate adaptation strategies, such as drought preparedness and risk reduction.*
Council resolution on water conservation	*Formalizes Council's commitment to water conservation, enabling staff to prioritize and resource water conservation initiatives.*
Community Engagement Strategy	*Outlines approach to information-sharing, awareness-building, and input-seeking activities with community members. Applicable to water conservation context.*
Asset Management Policy	*Guides proactive planning for infrastructure renewals to enable sustainable service delivery.*

Identify your water source(s). Select all that apply.

- Regional water commission
- Groundwater
- Surface Water
- Not Sure
- Other:

Identify allowable limits of your water source, depending on type:

- We have a Water License (we withdraw/divert from a source) which allows up to _____ m^3/year.
- We purchase water from a commission, and are allowed up to _____ m^3/year. (if maximum exists).

Advancing Practices

Identify and evaluate ongoing water conservation measures in your municipality.

What water conservation initiatives exist in your community? Select all that apply:

- Conservation Pricing
- Rebate programs for low-consumption appliances
- Rain barrel purchase programs
- Graduated water rate structures
- Community outreach initiatives
- None
- Not Sure
- Other:

How effective are these programs? How are they being evaluated and revisited? What is their metric of success? Record any reflections.

Tip! For more information and examples of municipal tools and practices for water conservation, visit the ABmunis Water Conservation webpage here.
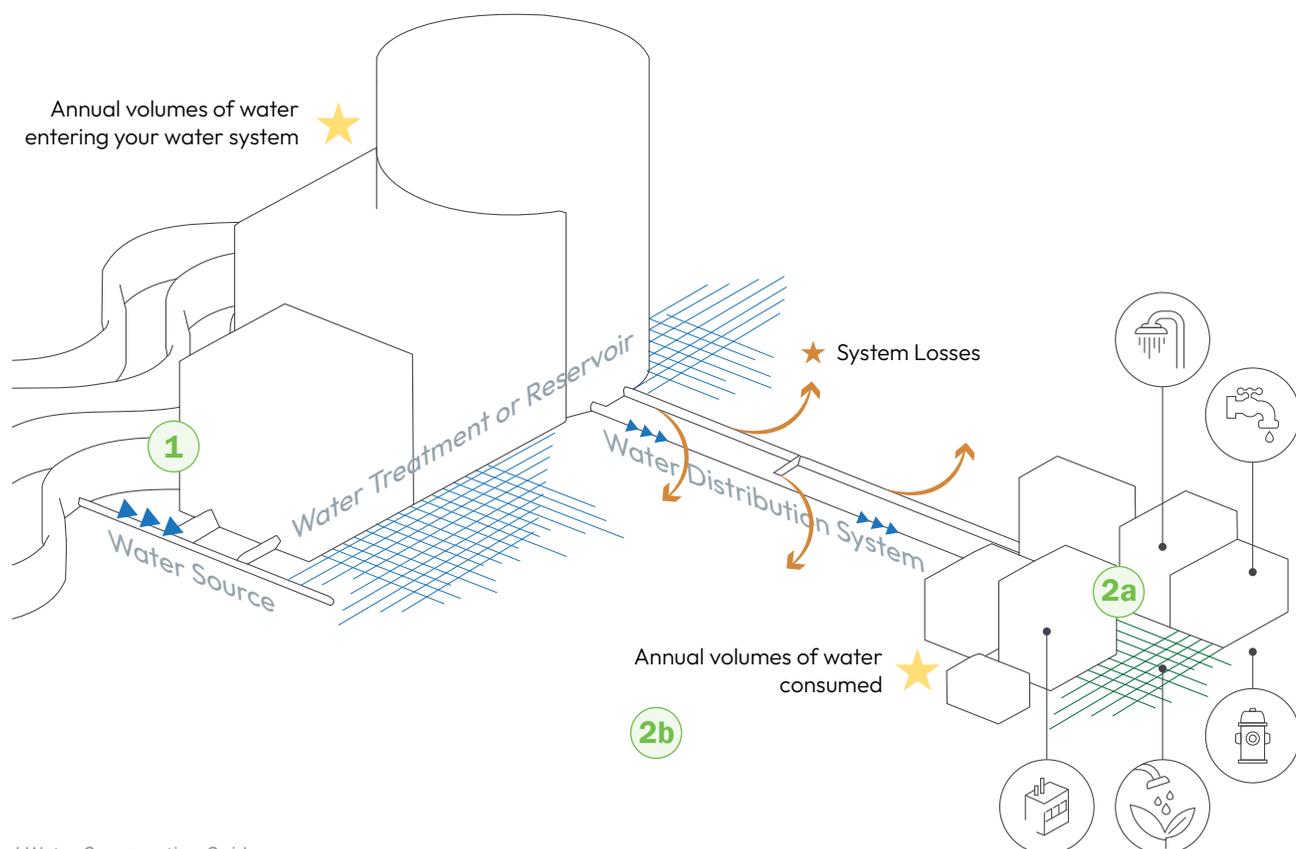
Take Stock of Annual Water Balance

Understanding your municipality's annual water balance – the total volumes of water entering your system and leaving it (through consumption or losses) – is foundational to effective water management. Understanding these annual figures provides a baseline for:

- Tracking trends over time
- Spotting inefficiencies
- Targeting conservation efforts
- Measuring progress

The graphic below illustrates key components of municipal water systems, from the water source, through treatment and distribution, to end users. It highlights where municipalities have direct control (e.g., leak detection, infrastructure maintenance) and where they have influence (e.g., demand management with end users). It also shows where annual volumes can be measured:

1 Water entering your system (from the source or purchased water).

2 Water leaving the system (consumed by end users and lost along the way).

Each of these components is described in further detail below with workbook activities to help you record relevant information. This graphic can serve as a helpful reference as you complete the activities below.

Annual volumes of water entering your water system

1

Water Source

Water Treatment or Reservoir

Water Distribution System

System Losses

2a

Annual volumes of water consumed

2b

Tip! Your actual withdrawal from your water source is not the same as your allowable limit identified in your water license. In this step, make sure you are recording what you actually withdrew.

Water entering your system:

Record annual volumes of water entering your water system. Select the information you have and enter the annual volume.

> If you have a Water License:

(Less Accurate) How much raw water do you withdraw from your source? (What did you report to EPEA?).

Record amount: _____ (m³/year)

(More Accurate) How much water leaves your treatment plant?

Record amount: _____ (m³/year)

> If you purchase water from a Commission:

How much water do you purchase from the commission in a year?

Record amount: _____ (m³/year)

A Closer Look: Water Licenses under the Water Act

The way your municipality accesses water – whether through a Water licence for raw water withdrawal or by receiving treated water from a partner – directly affects how you measure, report, and manage water consumption.

Some Alberta municipalities will hold Water Licenses under the Water Act, which is regulated by Environment and Protected Areas (EPA). Water Licenses identify how much water the license holder can withdraw from the raw water source.

How do I know if we hold a Water License?

Typically, if you hold a Water License, you also have water treatment plant infrastructure to treat the raw water to potable water standards. If the water you receive from a partner like a regional water commission is already treated and potable, your municipality probably does not hold the Water License. If you aren't sure, you can look up all active water licenses in the public Environmental Records Viewer here: Water Act licences | Alberta.ca.

If your water source is groundwater or surface water and your municipality holds the water license through the Water Act, you are required to annually report on how much water you withdraw from your source.

More information about reporting water use is here.

Water leaving your system:

Water consumption is measured differently by different municipalities. In this Guide, water consumption describes how much water your community uses and how much is lost along the way. This includes the volumes of water (raw or potable) withdrawn from the source and treated at your water plant, the actual amount delivered to users, and any losses due to leaks, equipment issues, or inaccurate metering.

Water consumption patterns are the trends and habits in how, when, and where water is used and lost across your community. Consumption patterns might be:

- Seasonal fluctuations
- Differences between residential and industrial use
- Times of day when demand or losses are highest
- Areas of the system that experience more frequent leaks or inefficiencies

There are many ways to measure water consumption, which vary depending on the kind of infrastructure and monitoring equipment your water system has. Some approaches produce more accurate insights. However, what matters most is that you get started.

KEY TERMS

Water consumption: In this Guide, refers to how much water your community uses and how much is lost along the way

Potable water: Water that has been treated and is safe to drink or use for cooking and other domestic purposes.

Raw water: Water that is drawn directly from the source and has not yet been treated for safe human consumption.

Water consumption patterns: trends and habits in how, when, and where water is used and lost.

Annual water balance: The total volumes of water entering your system, being consumed, and lost over the course of a year.

Select your current method for measuring consumption and record annual volumes of water consumed.

Return flows/flows exiting wastewater system post-treatment:

Record amount: _____ (m3/year)

Flows entering wastewater treatment infrastructure:

Record amount: _____ (m3/year)

Metered use:

Record amount: _____ (m3/year)

Advancing Practices

If your municipality has metered water, you can further evaluate your water consumption by analyzing water flow data by time and location.

By analyzing metered water flow data by time, you can better understand:

- Daily Use Trends
- Seasonal Use Trends

By analyzing metered water flow data by location, you can better understand:

- Residential water consumption
- Industrial/commercial water consumption

Return flows: Water that exits the municipal wastewater system after treatment and is discharged back into the environment or reused. Monitoring return flows helps assess system efficiency and environmental impact.

Metered use: Water consumption measured by meters installed at service connections, providing accurate data for billing and tracking usage. This will also capture consumption not returned to the system (such as water used for residential irrigation) in addition to uses that end in the wastewater system).This helps municipalities identify trends and promote conservation.

Water reuse: Treating wastewater or stormwater to a suitable quality for use in things such as irrigation systems, industrial processes (i.e. cooling) or grey water usage in toilets.

Advancing Practices

You can dive deeper into current water conservation context by evaluating the amount of water reuse happening in your community.

What water reuse practices are being used in your community?

Rain barrels

Irrigation with non-potable water

Industrial processes (e.g., cooling)

Other: _____

_____

Can you estimate the number of properties that reuse water? Can you estimate the annual volume of water reused?

Number of Properties:

Volume Re-used: _____ (m³/year)

Tip! There is no standardized method of delineating residential versus industrial/ commercial water consumption as it is dependent on each community's context. Here's a discussion paper that may help you decide how your community wants to differentiate water users.

Water Loss

Water loss refers to quantities of water that do not make it all the way to the intended users or are not metered. It's important to know that every municipal water system experience losses, regardless of how new your infrastructure is. For many municipalities, understanding the largest loss(es) in your system will give you the highest impact actions for water conservation.

There are many reasons why water might be lost before reaching end users or not captured in metered consumption. Some are obvious, while others are hidden or unexpected. Some factors to consider are:

- **Soil type:** in clay soils, leaks often surface and are easier to spot. In granular soils, leaks may remain hidden, with impacts appearing far from the source of the leak.
- **Seasonal weather patterns:** weather can dramatically affect leakage, especially in clay soils that are affected by temperature and moisture.
- **Hydrant operation:** improper hydrant use (e.g., by fire rescue services) can cause water hammer and leakage.
- **Age and material of water mains:** older pipes or certain materials are more prone to leaks.
- **Operational usage:** several maintenance and operational activities require the use of potable water but may not be metered; this could include regular flushing of mains through hydrants, bleeders in colder climates, or unmetered municipal irrigation.
- **Land use and development:** changes in land use can stress pipe joints, causing deflection and leakage.
- **Unauthorized use/theft:** examples include unapproved hydrant use or unmetered connections.

KEY TERMS

Water loss: Quantities of water that do not reach intended users, due to leaks, theft, unmetered connections, or other causes.

Given the complexity of measuring water loss, you may consider engaging experts such as professional engineers or water system specialists to help you assess, locate, and address water losses.

Here are some steps you can take to begin understanding water loss at a high level:

1. Estimate your water loss

    You can estimate your water losses by subtracting your annual volume of water consumed from the annual volume of water entering your system.

    Estimated Water Loss = **Annual Volume of Water Entering**
    – Annual Volume of Water Consumed by end users

2. Document known and suspected sources

    The more detailed information you have about how water moves through your system, the more accurate your water loss calculation can be. Collaborate with your engineers or operators to get the most representative estimation of water losses, and to record the known or suspected sources of water loss.

Check off your known and suspected sources of water loss:

Known leaks in water distribution infrastructure, location is also known

Water theft

Unmetered water connections or uses

Other: _____

_____

Of the known and suspected sources of water loss you identified above, which is responsible for the largest losses? Record, if known.

_____

_____

_____

Advancing Practices

Monitor pressure data

If you have access to measured pressures at different points in your system (either at facilities or through recent pressure testing activities), it may be a good way to identify the location(s) of leaks in your system. Pressure inconsistencies can sometimes indicate high-volume leaks.

This may be an area where you lean on professional expertise in water systems to evaluate leakage throughout your system and identify areas of concern based on the pressure data available.

Complete a Water Audit

Completing a Water Audit will provide you with the information needed to calculate your Infrastructure Leakage Index (ILI). The American Water Works Association has published a standard method for completing a Water Audit.

To take this step, you will also need to take stock of your physical water infrastructure (see next section), to understand the length of pipe and specific components in your system. This information is required for calculating your ILI.

Calculating your system's ILI can be helpful as both a method of determining how important it is to start addressing leakage within your system, as well as to use as a monitoring mechanism as leakage is addressed throughout your water network. The Water CEP Plan contains more information about current water loss measurement and targets across the province.

KEY TERMS

Infrastructure Leakage Index (ILI): A metric used to assess the level of water loss in a distribution system, with targets set for efficient management.

Water Audit: a standard method for calculating, documenting and reporting a water system's uses and losses.

Take Stock of Physical Water Infrastructure

Physical water infrastructure refers to the systems and assets that deliver water to your community. This includes, for example, the pipes, valves, pumps, reservoirs, and treatment facilities that make up your distribution network.

Taking stock of your water infrastructure helps you assess its condition, identify areas for improvement, and plan for maintenance or upgrades. It's also important to know who owns and operates each part of the system, and where information about these assets is stored.

INFRASTRUCTURE	OWNED BY	OPERATED BY	CURRENT CONDITION/ PERFORMANCE
Water Treatment Plant	Municipality	Municipality (Public Works)	Good condition. Last major update in 2018. Regular maintenance schedule for pumps, motors, mechanical equipment and electrical equipment. No instances of adverse drinking water quality or substance release reports to Environment and Protected Areas. No violations of Permit to Operate.
Hydrants	Municipality	Municipality (Public Works)	Annual flushes and inspections are completed. Flow tests conducted for deficient flow hydrants.
Service Connections	Municipality	Municipality (Public Works)	Mixed conditions. Some older connections. Lead services are replaced. Minimal call outs for frozen services
Distribution Water Mains	Municipality	Municipality (Public Works)	Aging infrastructure. Leaks or more frequent breaks in older sections. Pipe performance varies by material. Some water quality complaints for turbidity (cloudiness) and colour (rusty colour from iron mains).
Feeder/Transmission Water Mains	Regional Water Commission	Regional Water Commission	Good condition. Inline inspections have been performed on most critical mains. Critical spare pipes are kept protected.
Booster Stations	Municipality	Municipality (Public Works)	Good condition. Regular maintenance performed on pumps, motors and electrical equipment. Redundant pump available during peak demand.
Reservoirs	Municipality	Municipality (Public Works)	Good condition. Cleaned/inspected every 3-5 years. Capacity meets current demand and water turnover rate.
Truck Fill Stations	Municipality	Municipality (Public Works)	Fair condition. Basic maintenance. Point of Sale and metering system captures revenue.
Maintenance and Valve Vaults	Municipality	Municipality (Public Works)	Mixed condition. Some vaults difficult to access, fill with water or having deteriorating concrete. Valves are mapped. Some valves are inoperable or difficult to actuate.

Advancing Practices

Take your understanding of your water system to the next level by completing a risk assessment on your physical water infrastructure. When conducting a risk assessment, the aim is to identify the frequency and consequences of failure for your system.

To identify the frequency of failure of different assets within your system, collect and assess:

- Infrastructure age and/or material
- Infrastructure condition
- Leak trends
- Water main break records

To identify the consequence of failure of different assets within your system, evaluate the:

- Proximity or affect on critical infrastructure (For example: Hospitals, schools, etc.)
- Impact to the overall system operation in the instance of failure
- Repair or replacement costs

Conducting a risk assessment of water systems can be a complex task, and you may not have the expertise needed in house. You may want to consider engaging professionals or experts to support you in completing a more robust assessment. There are standard processes to apply a framework that evaluates the frequency and consequences of failure of a water system and prioritize addressing deficiencies based on the evaluation.

You can learn more about risk assessments from the Alberta Asset Management Handbook & Toolkit.

Benefits of Consolidating Infrastructure Information

This information supports informed decision-making for maintenance, renewal, and replacement, helping you prioritize investments and allocate resources efficiently. An accurate inventory also enables you to track asset performance over time, forecast future needs, and assess risks, ensuring the long-term sustainability of your water system.

Beyond internal planning, consolidated infrastructure data strengthens your ability to report to Council and the public, demonstrating transparency and accountability in how municipal assets are managed. It also provides a solid foundation for technical analysis, such as modelling system capacity and evaluating the impacts of growth or climate change, all of which are essential elements of a robust asset management strategy.

More information about asset management is available here.

Take Stock of Communication Processes

Communication is about how information on water conservation is shared within your municipality, especially with Council and other decision-makers. Effective communication helps everyone understand the challenges, opportunities, and progress being made. It can help build support for new initiatives and keep water conservation connected to broader municipal goals.

Taking stock of communication in the water conservation context means considering how you currently report on water issues, and how you might summarize your findings from this step to share with Council or the public.

Describe current communication practices about water infrastructure, consumption and conservation with Council.

- We provide annual updates to Council through our infrastructure report, which includes water system performance and capital planning.
- Water consumption data is included in our utility budget presentations, but conservation efforts aren't reported in a structured way.
- Sometimes informal updates are shared during Council meetings when specific issues come up.

List opportunities to connect water conservation to broader municipal goals.

- Align water conservation messaging with our drought preparedness plan.
- Integrate water efficiency targets into our asset management planning and infrastructure renewal priorities
- Highlight connections between water conservation and financial sustainability in budget discussions.

Draft a short summary of your findings. This could form the first part of a briefing note to Council.

1. What is your total water consumption?
2. What are your estimated losses?
3. What are the known and suspected sources of loss?

Total water consumption is approximately 1,000,000 m^3 per year. Estimated losses are probably about 18%. Some known sources losses are unmetered connections in industrial zones. Aging infrastructure is also likely a source of loss.

Tip! Advance your communication practices by sharing consumption trends and sources of loss with administrators from other communities, or sharing updates on impacts of water loss initiatives with members of the public.

Step 2. Make a Plan

Once you've taken stock of your current water system and context in Step 1, the next step is to turn what you've learned into a practical, actionable plan. This means using your insights about municipal context, water balance, physical infrastructure, and communication processes to:

- Identify information gaps that need to be addressed.
- Pinpoint your municipality's strengths and challenges related to water conservation.
- Develop specific actions that respond to the gaps and challenges.

A well-crafted plan helps make your water conservation efforts focused, achievable, and supported by the right people. Rather than creating a broad or abstract plan, this step aims to help you focus on defining clear actions. These actions might include improving data collection, repairing known leaks, strengthening communication with Council, or integrating water conservation into asset management. By linking each action to what you discovered in Step 1, you ensure your plan is grounded in your municipality's reality.

How to Make a Plan

Identify Information Gaps

Now that you have taken stock of your current water reality, you have likely identified some information gaps. Many municipalities do! This is okay – you can start with less accurate and less complete information and work toward making it more accurate and complete.

Identifying information gaps might look like, for example,

When taking stock of your municipal context, you noted that
- You don't have a strong relationship with the commission you purchase water from.
- Your Council does not have regular discussions about water consumption.

When taking stock of your water balance, you noted that
- Only a portion of our residential users have metered connections. None of our commercial/industrial users have metered connections.
- You know you have leaks in our distribution system, but don't know where they are.

When taking stock of your infrastructure, you noted that
- You don't know where all your water valves are or how many there are.
- You don't know the material of all your water pipes.

When taking stock of your communication, you noted that
- You have some conversation with Council about the importance of water conservation, but it's ad hoc.

In Column A of the Roadmap, note the information gaps you identified in Step 1.

A*	B*	C	D*	E*	
Information Gap/Challenge to Be Addressed or Strength to Leverage* *The specific gap, challenge, or opportunity this action responds to or the strength this action leverages*	**Action** *What do you plan to do?**	**What the Action Aims to Accomplish** *The intended outcome or benefit*	**Roles and Responsibilities*** *Who is leading, accountable, consulted, and/or informed for this action?*	**Priority*** *How urgent or foundational the action is (High/Medium/Low)*	

Identify Your Water Conservation Strengths and Challenges

Every municipality has unique challenges and strengths when it comes to water conservation.

Reflect on what you learned in Step 1.

1. What aspects of your water system are working well?
2. What parts of your municipal context helps those aspects work well?
3. Where do you see barriers or risks?

Use the space below to record any helpful information.

Using your reflections, identify specific strengths and challenges your municipality has related to water conservation.

STRENGTHS

Dedicated staff

Existing water policy

Strong community awareness

Strong community support

Good working relationships with partners

Other:

CHALLENGES

Limited budget

Limited staff capacity

Aging infrastructure

Data gaps

Other:

Continue in Column A of the Roadmap and record the challenges you have identified.

A*	B*	C	D*	E*	
Information Gap/Challenge to Be Addressed or Strength to Leverage* *The specific gap, challenge, or opportunity this action responds to or the strength this action leverages*	**Action** *What do you plan to do?**	**What the Action Aims to Accomplish** *The intended outcome or benefit*	**Roles and Responsibilities*** *Who is leading, accountable, consulted, and/or informed for this action?*	**Priority*** *How urgent or foundational the action is (High/Medium/Low)*	

Identify Actions

Now, considering your identified information gaps, list of strengths and challenges, and other information gathered in Step 1, brainstorm actions your municipality can take.

SITUATION	ACTION YOU MIGHT CONSIDER
In Step 1, you identify that you are missing information about water consumption.	*Consult with operators to determine the best way to collect more data on your system.* *Conduct a water audit to better understand where and how water is being used and lost in your system.* *Develop a plan for targeted water meter installation in high-use areas.* *Implement a community-wide water meter installation program.* *Identify opportunities to make the determination of water consumption and estimation of water losses more accurate. Prioritize these opportunities from most impact to least impact.*
In Step 1, you identify that water consumption data is only available annually.	*Explore options for more frequent data collection (e.g., monthly or real-time meter readings) to better track trends and respond to issues.*
In Step 1, you identify that communication with Council is informal and ad hoc.	*Establish a regular reporting process to Council on water conservation progress and needs.* *Draft a briefing note to Council to communicate the current state of water consumption and share this information.*
In Step 1, you identify unmetered connections as a source of water loss.	*Develop and implement a program to identify and meter all connections or develop policies to address unmetered use.*
In Step 2, you identify aging infrastructure as a challenge.	*Identify which aging infrastructure is of highest priority to address.* *Connect water conservation with asset management and develop a prioritized infrastructure renewal plan, considering areas with known leaks or frequent failures.*
In Step 2, you identify limited staff capacity as a challenge.	*Establish a team dedicated to understanding your water context.* *Seek external funding or partnerships to support conservation initiatives.*
In Step 2, you identify strong community support as a strength.	*Launch a public education campaign to encourage water-saving behaviors and build on existing community engagement.*

In the Roadmap, for each information gap and challenge listed in Column A,

- In Column B, note the Action you plan to take to address the Information Gap/Challenge/to leverage the strength.
- Use Column C to jot down some initial thoughts on What the Action Aims to Accomplish about the intended outcome or benefit of the Action.

A*	B*	C	D*	E*
Information Gap/Challenge to Be Addressed or Strength to Leverage* *The specific gap, challenge, or opportunity this action responds to or the strength this action leverages*	**Action** *What do you plan to do?**	**What the Action Aims to Accomplish** *The intended outcome or benefit*	**Roles and Responsibilities*** *Who is leading, accountable, consulted, and/or informed for this action?*	**Priority*** *How urgent or foundational the action is (High/Medium/Low)*

Tips for Water Conservation Action Planning:

- **Start with small, achievable steps that build momentum.**
- **Consider both immediate actions and long-term goals.**
- **Make sure each action is linked to what you identified in Step 1. Take Stock or your identified challenges and strengths.**

Clarify Roles and Responsibilities

Successful planning depends on knowing who will do what. Several frameworks can help clarify who is responsible, accountable, consulted, and informed for each action in your plan. There's no single "best" framework for assigning roles and responsibilities. The right approach is the one that fits your team, your organizational structure and processes, your objectives, and the actions you are undertaking.

Whatever approach you choose, it is helpful to identify:

- Who is leading or responsible for leading and implementing each action
- Who is accountable for the outcome
- Who needs to be consulted or provide input (e.g., Council, staff, partners, public)
- Who should be kept informed of progress or decisions

Tip! Your municipality may already use a framework for roles and responsibilities. If this is the case, you could consider adapting it for your water conservation actions. Reach out to other departments to find out how they clarify roles and responsibilities!

The goal is to ensure everyone knows their role, avoid confusion, and support effective collaboration.

To start assigning roles and responsibilities, refer to the information you gathered in Step 1. Take Stock in the list of staff, departments, and committees involved in water management. If this was an information gap in Step 1, use this opportunity to clarify who should be involved moving forward.

Advancing Practices

To complete some of the steps that support you in advancing practices, you may not have the skillsets or capacity in house and may benefit from engaging professional engineers or external experts to support your progress.

Scoping your project is an important part of hiring the right people to do the right work!

Tip! Your plan doesn't need to be perfect or exhaustive. Starting with two actions is a perfectly acceptable plan if that is what is implementable in your context. The goal is to create a clear, actionable roadmap that fits your municipality's context and builds on what you already have.

In the Roadmap, for each action you listed in Column B, record roles and responsibilities in Column D.

A*	B*	C	D*	E*	
Information Gap/Challenge to Be Addressed or Strength to Leverage* *The specific gap, challenge, or opportunity this action responds to or the strength this action leverages*	**Action** *What do you plan to do?**	**What the Action Aims to Accomplish** *The intended outcome or benefit*	**Roles and Responsibilities*** *Who is leading, accountable, consulted, and/or informed for this action?*	**Priority*** *How urgent or foundational the action is (High/Medium/Low)*	

Step 3. Implement Your Plan

Now that you've built your plan, it's time to turn strategy into action. Implementation is where planning meets real-world impact. This step is about more than simply executing tasks—it's about prioritizing actions, assigning responsibilities, and creating the conditions for success. It also means monitoring progress, communicating results, and adapting as you learn what works best for your municipality.

Implementation is where you starts to see tangible results, such as reduced water use, improved efficiency, and stronger community engagement. By approaching implementation as an ongoing process, you can find opportunities to learn, celebrate successes, and refine your approach over time, keeping your water conservation efforts relevant and resilient.

How to implement

Prioritize Actions

Not every action can be undertaken at once, and not all actions have equal impact. As a result, prioritizing actions is crucial for moving from planning to implementation.

While many considerations come into play when prioritizing actions (e.g., cost, staff capacity, Council and/or staff acceptance, co-benefits), in the context of water conservation, actions that help fill information gaps should be considered high priority. This is because these actions help you better understand your water system, consumption, and losses, and often unlock or enable other actions that depend on having accurate and complete information.

For example,
- You may want to develop a Water Conservation and Efficiency Plan. First, you need to collect better water consumption data to establish a baseline.
- You may want to communicate with Council about water losses. First, you need to estimate those losses more accurately.

Implementation is an ongoing and iterative process. Be ready to adapt your approach as you learn what works best for your municipality.

Other types of actions that might be high priority include:
- Actions required by regulation or tied to your reporting obligations
- Actions that are low effort, high impact ("quick wins")
- Actions that are urgent (e.g., preparing for water shortages in the summer)
- Actions that are already underway or planned

In the Roadmap:

- Reflect on the actions you list in Column B.
  - Which actions help fill information gaps?
  - Are there actions that stand out as "quick wins"?
  - Which actions are urgent?
  - Which actions are already underway or are planned?
  - What actions stand out as being difficult and why?
  - Which require additional resources, approvals, or partnerships?
- Based on your reflections, in Column E, assign a priority level (high, medium, or low) to each action.
- In the Roadmap, for each action listed in Column B, note the timeline of implementation in Column G.

A*	B*	C	D*	E*	F	G*
Information Gap/Challenge to Be Addressed or Strength to Leverage* *The specific gap, challenge, or opportunity this action responds to or the strength this action leverages*	Action *What do you plan to do?**	What the Action Aims to Accomplish *The intended outcome or benefit*	Roles and Responsibilities* *Who is leading, accountable, consulted, and/or informed for this action?*	Priority* *How urgent or foundational the action is (High/Medium/Low)*	Resources and Dependencies *What is needed to implement?*	Timeline* *Target start/end dates or milestones*

A Closer Look: Water Conservation, Efficiency, and Productivity Plans (CEP) in Alberta

Conservation, Efficiency, and Productivity (CEP) plans are a cornerstone of Alberta's approach to sustainable water management, guided by the province's Water for Life strategy. Since 2004, the Alberta Water Council has supported major water-using sectors – including municipalities, industry, and agriculture – in voluntarily developing and implementing CEP plans to improve water use efficiency and productivity by at least 30% from 2005 levels. These plans focus on reducing water use and waste, optimizing system efficiency, and increasing the value produced per unit of water, all while protecting aquatic ecosystems and supporting long-term community resilience. Sector-specific CEP plans are tailored to unique needs and are regularly monitored and reported, ensuring ongoing progress toward Alberta's water conservation goals.

More information on the history of CEPs in Alberta is available here.

Expand on your water conservation planning by creating your own CEP

Want to go beyond getting started? Dive deeper into water conservation planning using the Water Conservation Guide for British Columbia available here.

Act

Once priorities are set, assign responsibilities and begin implementation. Implementation is a team effort. Success depends on clear communication, collaboration, and a willingness to adapt as you learn what works best for your municipality. Don't be afraid to start small! Early successes can build confidence and support for larger initiatives.

To get started,
- Make sure each action has a clear owner, timeline, and support from necessary stakeholders.
- Integrate actions into budgets and work plans and seek approvals where needed.

Monitor Progress

Monitoring progress is how you understand whether your actions are having the intended impact and, if not, where adjustments are needed. In this Guide, monitoring is focused on tracking progress against actions you are implementing. In this way, monitoring helps you:
- Stay accountable to your plan
- Identify and address potential issues early on
- Celebrate completed actions and milestones
- Communicate progress to Council, staff, and partners
- Adjust your approach based on what's working and what isn't

Here are some examples of how you might monitor progress you are making on your plan:
- If you are implementing collect better water consumption data as an action, you might monitor the number of water meters installed.
- If you are implementing communicate water consumption and losses to Council as an action, you might monitor the number of reports provided to Council.
- If you are implementing develop a water conservation plan as an action, you might measure progress as having formed a team of people who will be dedicated to the project.
- If you are implementing document known and suspected sources of losses as an action, you might track water main breaks and or/water quality complaints from users over time.

If you are diligent in implementing your plan, you can look forward to the following outcomes for your community:
- Increased Council and public awareness of the importance of water conservation and respective roles
- Increased understanding of your water system's condition and performance, leading to more proactive infrastructure renewals or upgrades, and reliable performance
- Decreased costs of water treatment or purchase
- Reduction of water losses and increased water source protection

In the Roadmap:

- Record how you'll monitor progress made on your water conservation actions in Column H.
- You can use Column I to track progress over time.

E*	F	G*	H*	I
Priority* *How urgent or foundational the action is (High/Medium/Low)*	**Resources and Dependencies** *What is needed to implement?*	**Timeline*** *Target start/end dates or milestones*	**Progress metrics*** *How will you measure progress?*	**Status/Notes** *Current status, barriers, adjustments, completion date*

MEASURING PROGRESS MADE ON ABMUNIS' 2024 WATER CEP PLAN TARGETS

In addition to measuring progress against your planned actions, you can also look at the extent to which you are achieving the targets of the renewed ABmunis plan:

1. Alberta's urban municipal sector will achieve an average per capita residential water use of 170 litres/person/day (l/c/d) or a 10% reduction from current residential water usage - whichever is lower – by 2027.

2. Alberta's urban municipal sector will achieve a total per capita water use of 307 litres/person/day (l/c/d) by 2027.

3. Alberta's urban municipal sector will maintain the volume of "unaccounted for" water at 10% of total water use and set a target Infrastructure Leakage Index (ILI) at 3.0 – 5.0.

Communicate Results

Regular communication keeps Council, staff, and the public informed and engaged. Prepare brief updates or reports to share progress, challenges, and next steps. Celebrate successes and be transparent about areas needing improvement.

Reflect on your municipality's communications needs:

- Who needs to be informed about progress? Why? And When?
- What format do your audiences need (e.g., briefing note, presentation, newsletter)?
- Will you/how will you share lessons learned with other municipalities?

Use the space below to record any helpful information.

It's important to note that different audiences need different types of information presented in different ways. For example,

- Council might need concise summaries of key outcomes, financial impacts, and alignment with strategic priorities presented in a briefing note or regular Council report to support decision-making and budget approvals.
- Municipal staff may benefit from more detailed operational data, progress updates, and lessons learned shared through internal memos, team meetings, or dashboards to inform day-to-day work and foster collaboration.
- Members of the public may be most interested in practical impacts, success stories, and opportunities to participate communicated through newsletters, social media, or public presentations.
- Partners (such as regional water commissions, industrial users, or neighbouring municipalities) may need detailed operational data, updates on shared infrastructure, or information about joint conservation initiatives provided through joint meetings, shared dashboards, or collaborative reports to coordinate effort, support decision-making, and guide planning and investment in shared infrastructure.

Tailoring your communications ensures that each audience receives the information they need in a format that is accessible and actionable.

Use the table below to identify audiences, formats, and frequency for sharing progress :

AUDIENCE	FORMAT	FREQUENCY	KAY MESSAGES
Municipal staff	Team meeting, dashboard	Monthly	Operational updates, data trends, lessons learned, upcoming initiatives
Partners	Joint meeting, shared dashboard	Annually	Updates on shared infrastructure, joint conservation initiatives, data sharing, future planning
Public	Newsletter, social media	Semi-annual	Success stories, practical impacts, opportunities to participate in conservation programs
Public	Community forum, public dashboard	Ongoing	Real-time water use data, conservation outcomes, engagement opportunities
Council	Briefing note/report	Quarterly	Summary of water conservation progress, financial impacts, alignment with strategic priorities

You've made it!

Water conservation is an ongoing process. You can revisit this Guide as often as you like to help you monitor progress against your plan and create new actions. The best plans aren't the longest, most detailed, or the most technical – the best plans are the ones that are rooted in your municipality's context and are implementable. What matters most is that you get started!