Water Conservation Guidebook

A guide to help you select and complete projects to reduce water consumption.

Green Economy London

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Water Conservation Guide Overview

This guide is meant to help members select projects that will conserve water. There are tips and resources linked for each project, and our team is available for extra support and guidance throughout implementing these types of projects.

Why is it Important to Conserve Water?

Water is a finite resource, and its scarcity is becoming a global concern due to factors such as population growth and climate change. By conserving water, businesses can contribute to the preservation of this resource, helping to protect ecosystems and maintain water quality. Water conservation also reduces the impacts of droughts and water stress. For businesses, conserving water is beneficial for reducing costs, and improving efficiency. By implementing water-saving measures, companies can lower their operational expenses and encourage environmentally friendly practices.

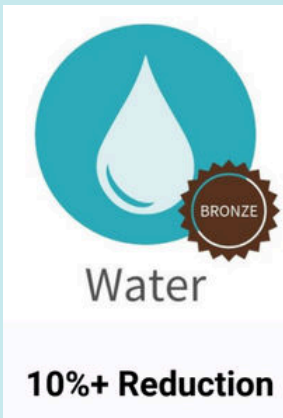




Water Conservation Target Framework

To set a water target, members must report on water consumption and wastewater. This involved sending Green Economy London your monthly water bills to set a baseline and track progress. Targets can be absolute or intensity-based (ie. m3 of water per employee or sq ft). If you want to make reductions to your stormwater, that reduction can be set as a target in the Environmental Stewardship Framework.

Levels of recognition include:



10%+ Reduction

20%+ Reduction

30%+ Reduction

Low Flow Toilets / Dual Flush

Low-flow toilets use 3-4 L of water per flush compared to the standard 6L toilet, potentially reducing water usage from toilets by 50%, or more if you have older toilet models that can be up to 12L per flush.

In an office of 30 people working 9-5, each person typically uses the washroom twice daily, totaling **60 flushes/day**. Over 250 working days, this equals **15,000 flushes per year**.

If you had standard 6L toilets, this would use 90,000L of water, however, switching to a 4L toilet this would **save 30,000L and 45,000L** would be saved if 3L toilets were installed. This project results in yearly water consumption reductions along with cost savings.

Low-flow toilets, available at major retailers, offer comparable costs to standard models, and payback periods as short as a few years. Look for the WaterSense label for EPA-approved options. Dual flush toilets, another option, can provide additional water savings depending on the model.

For sustainable water systems, prevent flushing inappropriate items. Public washrooms should display signage to educate users, preventing pipe and sewer system backups. For more information click **HERE**

Resources:

- **List of Top Low Flow Flush Toilet Models**
- **WaterSense Commercial Toilets**

Waterless Urinals

Waterless Urinals function without water, utilizing gravity instead of flushing. They resemble regular urinals but lack water intake pipes, connecting directly to the building's plumbing system via outflow pipes.

Benefits:

- Save water, reducing energy and emissions and lowering water and sewerage costs
- Improve hygiene, as these urinals are easier to clean
- No need to maintain a flush control system, cistern or water supply pipes
- No floods from blocked-up urinals
- Reduce the incidence of waste pipe blockage

Things to Consider:

- Regular cleaning reduces limescale buildup and odors.
- Low-flow urinals suit high-use areas like airports, while waterless urinals are better for small/medium businesses.

Resources:

- The Pro and Con of Waterless Urinals
- Top Rated Waterless Urinal Models
- How Waterless Urinals Work

Low Flow Faucets, Aerators, and Shower Heads

What is considered low flow?
For sinks: 5.7Lpm (litres per minute)
For shower heads: 6.8Lpm or less

When considering replacing bathroom faucets, check the flow rate of your current fixture by examining the tip of the faucet head. Older faucets typically have higher flow rates, so consider replacement or adding an aerator.

What is an aerator?

An aerator is a faucet attachment that restricts water flow, reducing water usage. Most faucets have them but not all aerators are equal; look for ones with a flow rate of 9.5pm (1.9L per minute). Many models can be attached to existing sinks and cost under $50.

Resources:

- Low Flow Aerator
- WaterSense Products
- Tips for Implementing Low-Flow Fixtures into Your Workplace

Grey Water Toilet/Sink Combo Project

Grey water hand-washing toilets are a great way to reduce water usage, by recycling hand-washing water that can be used to flush a toilet. There are currently no readily available commercial toilets in Ontario, but it is easy to add an attachment or DIY it yourself!

The most cost-efficient option is converting a standard low-flow toilet and adding a sink attachment. Adjusting the connection in the tank, water will take a different route into the tank. Instead of the refill tube connecting to the tank's overflow pipe, it links to the sink faucet. The sink's drain connects to the overflow tube. Now when you flush, the clean water will flow through the faucet for washing your hands. The used, or grey water then flows out through the sink drain and into the tank, significantly cutting flushing water usage.

DIY Example!

Resources:

- **Sink Positive Attachment**
- **Toilet Sink Grey Water Combo Units**

Dishwasher Tips

If your office has a dishwasher in the kitchen, there are some tips to help reduce water usage by implementing efficient practices.

Tip 1: Invest in a highly efficient dishwasher model

Older dishwashers use up to 57 liters per load, while non-EnergyStar-rated models use about 22 liters. EnergyStar-rated dishwashers use 12 to 15 liters, saving 30-45% water compared to standard models. In addition to water savings, they also save energy compared to older standard models.

Tip 2: Make sure the dishwasher is full before running

If you do have a working dishwasher in your office, encourage employees to load their dirty dishes and designate someone to run it either before the end of the day or when it's full.

Encourage dishwasher use to save water; it's more efficient than handwashing. Washing a plate and mug by hand can use 12-16 liters, while a dishwasher uses the same for a full load. Add signage in the kitchen to remind people to use the dishwasher

Pre-rinsing dishes isn't needed; scrape off particles and use detergent when running the dishwasher

Resources:

- Guide to Efficient Dishwashers on the Market
- Energy Star Facts

Fixing Leaks

It's important to schedule routine leak checks as part of maintenance duties. Leaks can occur in various places, including toilets, faucets, valves, hoses, etc. Training staff to identify leaks helps to identify new leaks and allows them to be caught catch and fixed early. Obvious signs of leaks include water leaking from toilets or dripping sinks when turned off. Most often, leaks can be harder to identify and you may not think anything is wrong.

Tips on How to Identify Leaks

1. **Check your water meter** before and after a two-hour period without water usage. Any change indicates a possible leak
2. To check for toilet leaks, add a **drop of food coloring to the tank** and wait 10 minutes. If color appears in the bowl, there may be a leak. Flush immediately to prevent staining the tank.
3. **Inspect faucet gaskets and pipe fittings** for any water outside of the pipe to check for surface leaks.

Did you know leaks can account for over 10% of your yearly water usage?

Resources:

- Water Sense - Guide to Fixing Leaks
- Water Leak Detection and Audit Methods

Rain Barrels

This project involves installing rain barrels on your building's downspout. If you have any type of landscaping, gardens, or potted plants on your property then rain barrels are a great opportunity to lower your water usage from tap water.

Did you know?
A moderate storm of 25 mm (1 inch) of rain produces over 2000 litres of runoff from a roof surface of 93 square meters of water

Benefits of Rain Barrels

- Easy and relatively inexpensive to install
- Harvested rainwater is better for your lawn and garden than tap water
- Using a rain barrel reduces water pollution by minimizing stormwater runoff, which can collect pollutants from your landscape such as nutrients, sediments, chemicals, and bacteria.

Resources:

- City of London- Water Conservation
- TREA- Water

Where to find rain barrels in London:

- **Home Depot**
- **Canadian Tire**
- **Costco**
- **Home Hardware**

Water Irrigation and Landscaping

An easy way to reduce water usage in the warmer months is to make adjustments to landscaping practices and irrigation schedules

1. **Choose plants that are native and drought-tolerant.** These plants need less water as they retain water in their root systems, and benefit the native species and pollinators in the area.
2. **Water your plants less often.** Only use sprinklers when rain has been absent for a significant amount of days. When you do water them, try to do it early in the morning when it is still cool to allow time for the water to reach the roots and minimize water loss from evaporation.
3. **Use mulch in your gardens.** Mulch is a great addition to your garden as it shades the soil, preventing evaporation before the water reaches the plant's root system, reducing the amount of water needed to keep your plants healthy.

Resources:

- List of Native and Drought Tolerant Plants
- Benefits of Mulch

Water Audits

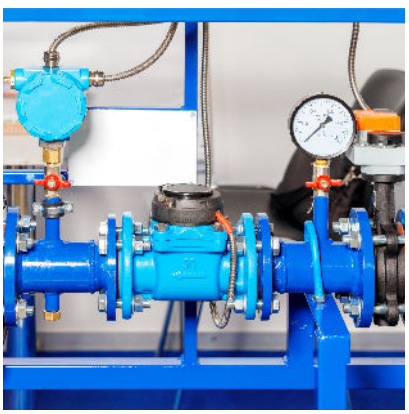
If your business has a high water consumption, especially in manufacturing and processing uses, then a water audit would be able to identify where in your processing line changes could be made to reduce water usage.

Benefits of Water Audits

- A water audit will identify your current water usage if you do not currently have your water metered
- Submeters can be set up to identify usage from different processes and identify leaks or water running when it shouldn't be.
- An audit can help identify areas where water could be reused if you have a significant amount of water being used on a single-use basis.
- Projects can be identified to reuse water where possible, fix any leaks, and create a plan to reduce the overall amount of potable water being used at your business.

Resources:

- **Enviro-Stewards Water Conservation Audits**
- **Water Audit Case Study in Manufacturing**



Blue Roof/Water Catchment System

A Blue Roof is a water catchment system that utilizes a flat roof to store rainwater. The water captured is released in a controlled way back into a water system, thus reducing stormwater runoff and flood risk potential. The water can be stored in cisterns or holding tanks to be used in grey-water projects such as landscaping irrigation, toilet flushing, laundry and other water-related projects (remember to check your city's bylaws on grey-water use beforehand).

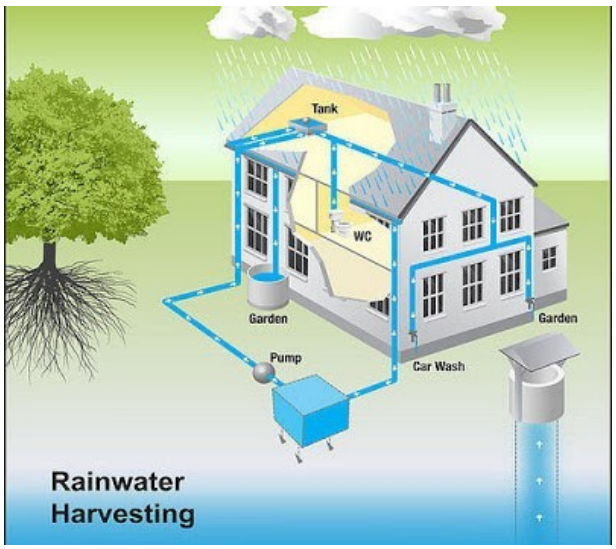
Benefits of Blue Roof/Water Catchment Systems

- **Reduces stormwater:** 1 cm of rainfall over 1000 sqft of roof space is approximately 1000 litres altogether, if heavy rainfall occurs, a significant amount of water would enter storm drains. With a blue roof, you reduce the risk of flooding and overwhelming the storm drains.
- **Reduces potable water consumption**: Installing a blue roof with the intention to reuse water for things like toilets, you reduce the amount of potable water your facility uses, saving money and reducing water usage!

If you are interested in integrating Blue Roofs into your business, reach out to us and we will connect you with resources and experienced engineers.

Resources:

- Rainwater Catchment Case Studies
- Blue Roof: Sustainable Technologies



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