Water Conservation Guide Book

Green Economy London

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

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Green Economy London

Water Target Framework Overview

Overview of the Waste Guide Book:

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.

General Notes on the 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 typically use between 3-4 L of water per flush compared to the standard 6L toilet. Therefore, there is potential to reduce water usage from toilets by 50%, or more if you have older toilet models that can be up to 12L per flush.

For example, in an office with 30 people working 9-5, on average everyone uses the washrooms twice a day. That is 60 flushes/day, assuming 250 working days in a year, which equates to 15,000 toilet flushes.

Now if you had standard 6L toilets, this would mean 90,000L of water is used, however, if you switched 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 are available at all major stores and suppliers that sell toilets. Cost wise they are comparable to standard models, and payback periods can be as short as a few years depending on how often the toilet is used. Look for the WaterSense label to find EPA-approved low-flow toilets (this is a US certification however, many products in Canada use this as well). Duel flush options are also great as they can potentially save even more water depending on the model.

Important Note: In regards to sustainable water systems, it is important that nothing is flushed down the toilets that shouldn't be. If your washrooms are available to the public, then having signage reminding people not to flush improper items in the toilet can help educate people and keep your pipes and the sewer systems from backing up. For more information click **HERE**

Resources:

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

Waterless Urinals

What are Waterless Urinals?

The basic function of Waterless Urinals is urinals that use gravity to flush instead of water. They look like regular urinals except they do not have a pipe for water intake. The outflow pipes then connect to the building's conventional plumbing system.

Benefits:

- Save water, thus reducing energy and emissions and lowering spending on 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 and proper cleaning is needed to reduce limescale build-up that causes odour
- Low-flow urinals may be the better option in extremely high-use cases, such as an airport or motorway service area. However, most small/medium businesses would have this type of usage, so waterless urinals would be the better option in those cases

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 looking to see if you would benefit from either replacing your bathroom faucets, first look at what flow rate your current fixture has. This can be done by looking at the tip of the faucet head. If your faucet is really old, it most likely has a high flow rate and you should either replace it or add an aerator to it.

What is an aerator? They are attachments on your faucet that restrict the flow of water and reduce the amount of water used. Most faucets will have these but not all are equal in flow rate. **Look for 9.5pm (which equals 1.9L per minute)**. The great part about aerators is more models you can just attach to your current sink and they cost less than $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 attached to the toilet. With a little tweak to the connection in the tank, water now takes a different route into the tank. Instead of the refill tube connected to the overflow tube or pipe in the tank, it is now connected to the sink faucet. The drain outlet of the sink is then connected 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. This will help reduce water usage significantly from toilet flushing.

Resources:

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

DIY Project Example!

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
If you have a really old model, chances are you are using up to 57 litres in one load. Standard non-EnergyStar-rated dishwashers use about 22 litres per load. Whereas EnergyStar-rated dishwashers use 12 to 15 litres, therefore 30-45% less water than standard models In addition to saving water, you will also save energy when running your dishwasher compared to an older standard model.

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 in and have either someone in charge of running it before the end of the day or when they notice it's full.

Encourage employees to use the dishwasher over washing by hand, as this can save a lot of unnecessary water usage. Running a sink for 2 minutes to wash a plate and mug from lunch can use 12-16 L of water depending on the flow rate of the sink, whereas one load of everyone's dishes in the dishwasher will use the same amount of water. It can be helpful to add some signage in the kitchen, reminding people to put their dirty dishes in the dishwasher.

Also, pre-rinsing dishes isn't necessary before adding dishes to the dishwasher. Instead, scrape off adhering particulates and use a good detergent when running the dishwasher.

Resources:

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

Fixing Leaks

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

It's important to schedule routine leak checks as part of your maintenance duties. Leaks can occur in various places, including toilets, faucets, shower heads, valves, hoses, etc. Training staff to identify leaks can also help to identify new leaks and allow them to be fixed before too much water is wasted. Obvious signs of leaks include water leaking out of the bottom of a toilet, or a sink dripping when turned off. Most often, leaks can be harder to identify and you may not think anything is wrong.

Check out these tips below on how to identify leaks:

1. **Check your water meter** before and after a two-hour period when there is no water being used. If the meter changes at all, this indicated that you probably have a leak.
2. One trick to identifying if a toilet leaks, is by placing a **drop of food colouring into the toilet tank**. After 10 minutes if there is any colour that shows up in the bowl, you may have a leak. (Make sure you flush immediately after this experiment in order to avoid staining the tank).
3. **Inspect faucet gaskets and pipe fittings** for any water outside of the pipe to check for surface leaks.

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.

Why we love rain barrels:

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

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.

Click **HERE** for more info on Rain barrels.

- Another resource: TREA

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 will need less water to thrive as they retain water in their root systems for longer periods, while also benefiting the native species and pollinators in the area.
2. **Water your plants less often.** Instead of scheduling the sprinklers to turn on every other day, only use them 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 as it will 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. Therefore, reducing the amount of water needed to keep your plants healthy.

Resources:

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

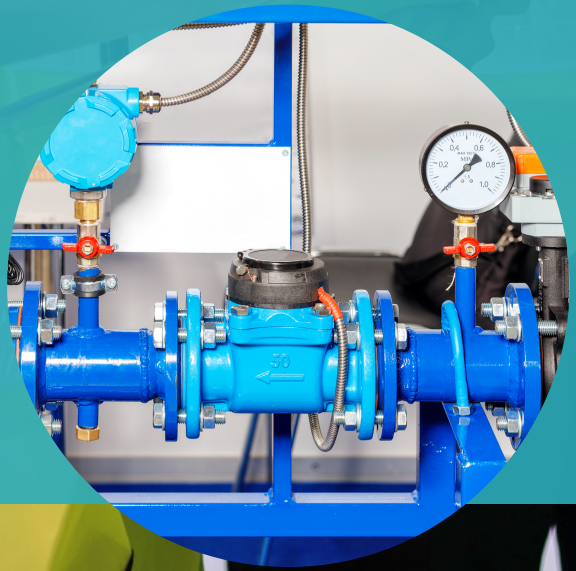
Water Audits

Who should get a Water Audit?
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:
Having 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 also help identify areas where water could be reused if you have a lot of water being used on a single-use basis. Projects can then 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

What is a Blue Roof?

A Blue Roof is basically a water catchment system that utilizes a flat roof to hold and store rainwater. The water captured can be released in a controlled way back into a water system, thus reducing stormwater runoff and flood risk potential and/or 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:

Reduces stormwater: 1 cm of rainfall over 1000 sqft of roof space is approximately 1000 litres altogether. If you think about how large your roof is, and if heavy rainfall occurs, that is a lot of water that would normally be entering storm drains. With a blue roof, you reduce the risk of flooding and overwhelming the storm drains. With a blue roof, you help reduce the risk of flooding

Reduces potable water consumption: If you install a blue roof with the intention to reuse water for things like toilets, you reduce the amount of potable water your facility uses. This saves a lot of money and reduces water usage!

If you are interested to learn more about Blue Roofs and their benefits, reach out to us and we will be able to connect you with helpful resources and experienced engineers.

Resources:

- **Rainwater Catchment Case Studies**
- **Blue Roof: Sustainable Technologies**

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