Residential
Leak Detection and Water Efficiency Guide

Protect Your Home From Damaging Leaks and Be Water Wise

london.ca/leaks
Understanding Your Water Bill

The amount of water you use is listed on your bill from London Hydro.

The average London household uses about 14 cubic metres ($m^3$) of water a month. Do you know how much water your household is using to flush a toilet, take a shower, do the laundry, run the dishwasher or water the lawn?

A typical residential customer has monthly connection charges that include:

- Water Connection Charge $14.89
- Wastewater Connection Charge $12.62
- Stormwater Charge $15.37
- Fire Protection $1.52
- Customer Assistance $0.25
- **Total** $44.65

To see the most up-to-date water rates visit [london.ca/waterbill](http://london.ca/waterbill)
Understanding Your Water Meter

Every home in London has a water meter to measure the total amount of water used. Your water meter is a great tool to monitor your water consumption and detect leaks throughout your home.

1. Locate your water meter. London’s water meters are installed inside the home and are usually located in the basement (near the front of the house).

2. To measure water use in your home, take a meter reading just before and just after you flush the toilet, take a shower, or run the dishwasher. Make sure that no one else in the house is using water when you are reading the meter or the reading will not be correct. The meters read in cubic metres (1,000 litres = one cubic metre).

*Note: If your meter does not show to the 0.1 m³ contact the City of London’s Meter Shop to have it replaced, 519-661-4739.

The water meter looks like this:

Just like a car, the water meter has an odometer. Instead of showing how many kilometres you’ve driven, the meter shows your water usage in cubic metres (m³).

**Low Flow Indicator**

When all water is turned off and the dial continues to spin, it indicates a low flow leak.

**Odometer**

Tracks each cubic metre (m³) of water used.

**Sweep Hand**

0.1 m³ (100 litres) per revolution.

**0.1 m³ Dial**

The last dial on the right represents 0.1 m³ (100 litres).

**Low flow indicator can be used to check for leaks.**

Turn every water-using appliance and tap off. Once everything is turned off, see if the low flow indicator is still moving. If it is, you have a leak and need to repair it.
Efficiency
How Much Do You Use?

What does your water meter tell you?
Easy steps to determine your water usage

Read your meter at the same time on two consecutive days

| Date & Time of Initial Read: | Mar 21 6:20 p.m. | Example Meter: 05247.8 |
| 24 hours later | Mar 22 6:20 p.m. | (2) 24 hours later meter read: 05249.2 |

Calculation:

<table>
<thead>
<tr>
<th>Example Meter</th>
<th>(2) Meter Reading</th>
<th>(1) Meter Reading</th>
<th>= Total Cubic Metres Used (m³)</th>
<th>x 1000</th>
<th>= Total Litres per Household</th>
<th>+ Number of People Living in the Home</th>
<th>= Total Litres of Water Used per Person / per Day</th>
<th>Efficiency Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>05249.2</td>
<td>- 05247.8</td>
<td>= 1.4</td>
<td>x 1000</td>
<td>= 1400</td>
<td>+ 4</td>
<td>= 350</td>
<td>Super Efficient less than 150 Litres</td>
<td></td>
</tr>
</tbody>
</table>

How do you measure up?
The example above shows an inefficient, high water-use household. If you ranked as average or inefficient, you could have a leak and should look at your water habits.
How Efficient is Your Toilet?

Follow these steps to calculate how much water your toilet uses:

1. Carefully shut off the valve to the toilet tank supply line.
2. Mark the water level with a pencil or marker in the tank reservoir.
3. Flush the toilet.
4. Now refill the tank reservoir to the marked level using a measured container such as a measuring cup, or a two-litre bottle to determine how much water is needed to flush the toilet.
5. How many litres did it take to fill the water back up to the line? If it was more than 4.8 litres, there is a more efficient way!

Once you’ve completed this task, don’t forget to open the valve under the toilet.

SAVE 50-90% BY INSTALLING A NEW TOILET

If your toilet uses more than 4.8 litres per flush (Lpf), it’s time for a change. The savings could pay for the new toilet within one year.

When purchasing a new toilet, look for the WaterSense® label and a MaP rating of at least 700 or greater.

Look for this number or less when choosing a new toilet:

4.8 Lpf
How Efficient is Your Showerhead?

This simple test will identify inefficient showerheads:

You’ll need:
- a bucket
- a large measuring cup that can measure in millilitres (mL)
- a timer
- a calculator

Place the bucket in the shower, so it catches the entire water stream. Turn the water on full for exactly ten seconds and ensure all the water is collected in the bucket. Measure the amount of water collected and use the formula below to determine its efficiency.

How much water do you have? (i.e. mL, 100 mL, 250 mL)
Enter that value here and do the calculation:

\[
\text{of water collected in 10 seconds} \times 6 = \frac{\text{per minute water used}}{1,000} = \text{per minute water used}
\]

If your showerhead uses more than 7.6 Lpm (litres per minute), replacing it with an efficient WaterSense low-flow showerhead will save you money. These newer, efficient showerheads use less water by mixing it with air. While still feeling like a high-flow showerhead, the amount of water used is much less.

Did you know?
A showerhead leaking at ten drips per minute can waste more than 1,990 litres of water per year.
Finding & Fixing Leaks Inside

Check for leaks every six months to save money and potential damage to your home.

Dripping faucets are obvious signs of leaks, but signs of mold or water marks on floors, walls, or ceilings can also indicate indoor pipe leaks. If you find these signs then you could have a leak that needs to be fixed. Consult with a professional to determine the best plan of action.

Did you know?

Toilet leaks are the most common water waster in a home. Most customers are surprised as to how much water can flow through a toilet without being noticed. The hard part is that leaks in your toilet are also difficult to detect. Find the steps below for a Toilet Leak Test.

Toilet Leak Test

1. Listen to your toilet to hear if it is running when it is not in use. If the toilet sounds like it is running, then there is likely a leak.

2. If you do not hear the toilet running, try using a dye test. Put a few drops of food colouring in the tank (or use a City of London toilet leak test) and wait about 20-30 minutes, do not flush! If the water in the toilet bowl changes colour, then you have a leak.

3. If the low flow indicator on your water meter is turning when you aren’t using water, you may have a toilet leak. Turn off the valve to the toilet tank supply line (page 5). Check the water meter low flow indicator if it has stopped turning, then there is a leak in your toilet.
Toilet Leak?
Follow these steps to find common leaks

Step 1: Check for flapper valve problems
Add a few drops of food colouring, toilet dye strips or tablets into the toilet tank and check back in 20 minutes. If a leak exists, the bowl will have dye-coloured water. To fix this silent leak, the flapper valve should be replaced, cleaned or realigned.

Step 2: Check for float arm problems
To check if the overflow tube and float ball are working properly, first remove the toilet lid from the tank. Flush the toilet, listen and watch the tank mechanism. You should hear the water stop running. If it doesn’t, check the water level to see if it is above the overflow tube. If it is, gently adjust the float arm down and flush again.

Step 3: Check the chain
If you have to jiggle the handle to stop the toilet from running, it may be a misaligned flapper, a loose handle or an incorrect length of chain. Clean and adjust the chain to ensure it's not too long or short. Tighten the nut that holds the toilet handle to the tank. If that doesn’t work, the handle may have to be replaced.

Step 4: Check for holes
A pinhole opening in the overflow tube could produce an invisible leak. Check for this by shining a flashlight down the overflow pipe. If you see running water, the leak can be repaired by replacing the overflow tube.
Faucet Dripping?

A 1/16-inch steady stream leak, which is an average size leak, wastes 387 litres of water each day. With that much water and money going down the drain, it's important to repair leaky faucets as soon as possible.

If you notice that a faucet is dripping, first try closing it tightly. If it continues to drip, the most likely cause is a worn or wrong-sized seat washer. With just a little effort, you should be able to fix the faucet yourself. If the faucet is washerless, it may be more economical to replace the faucet instead.

Other appliances to check for leaks

- Hot water tank
- Furnace humidifier
- Washing machine
- Sump pump
- Water softener
- Water Filtration System
- Refrigerator if it has an ice maker and/or cold water dispenser
- Dishwasher
- Boilers
- Pool/Hot Tub
- Irrigation System
- Outdoor hose (check annually)
- Fire suppression system

Visit your local hardware store or contact a licenced plumber to learn more.
Washing Machines

What to do if you find water near the washer

If you notice a leak around your washing machine, check the connection to the water supply and drainage hoses. In front loading washers, leaks can be caused by soap scum build-up on the door seal. Most washing machines come with rubber water hoses, which can burst as they age. Regularly check for cracks and replace the hose as needed. If you are unsure of where the leak is coming from, call your washing machine repair service.

An older, inefficient washer uses an average of 155 litres of water per load. New, efficient washers use on average 91 litres per load – a savings of 64 litres per wash!

Some laundry tubs have self-priming faucets to prevent sewer gas from coming up the floor drain. If the priming function isn’t working, it can continue to leak water into the drain unnecessarily. Typically, the priming hose is transparent so if the laundry tub faucet is off, no water should be running through the hose.

Looking to buy a new washer?

Ensure the model is WaterSense and Energy Star certified and look for these symbols.

Did you know?

New water efficient washers…

- Use up to 40% less water and use 20% less energy
- Are gentler on clothes, clean clothes better and use less detergent
- Help the environment through reduced water pollution and greenhouse gas emissions

Troubleshooting for Washing Machines:

Some troubleshooting suggestions if you discover that your washing machine is leaking.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaks while filling</td>
<td>Loose or cracked hose or inlet valve</td>
<td>Tighten or replace inlet hose or valve</td>
</tr>
<tr>
<td>Leaks while filling</td>
<td>Water temperature may be greater than 76 °C or the house may be too cold in the winter</td>
<td>Adjust water temperature if necessary</td>
</tr>
<tr>
<td>Water drips down the outside of the machine</td>
<td>Cracked inlet nozzle or loose hose</td>
<td>Ensure hose is tightly clamped, replace if necessary</td>
</tr>
<tr>
<td>Water leaks from pump</td>
<td>Pump malfunctioning</td>
<td>May need to tighten, clean or replace pump</td>
</tr>
</tbody>
</table>
Dishwashers

Is your dishwasher costing you money?

Not overloading the dishwasher and using the correct dish soap can easily fix some water leaks. Be sure that the door latch is tightly secured, the dishwasher door fits tightly and that the door seal is not worn or damaged.

If you are unsure where the leak is coming from or how to fix it, be sure to call a qualified professional.

Did you know?

A family that runs a 45 litre per load dishwasher four times a week and replaces it with a 22 litre per load machine will save over 4,700 litres of water a year.

Troubleshooting for Dishwashers:

Some troubleshooting suggestions if you discover that your dishwasher machine is leaking.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water leaks from door</td>
<td>Rubber gasket cracked or hard</td>
<td>Replace with new gasket</td>
</tr>
<tr>
<td>Overfilled with water</td>
<td>Float switch not working</td>
<td>Ensure float is working properly, it may need to be changed or replaced</td>
</tr>
<tr>
<td>Water doesn’t enter appliance</td>
<td>Water filter clogged or pressure switch not working</td>
<td>Clean filter screen, replace switch</td>
</tr>
<tr>
<td>Water leaks from the bottom</td>
<td>Gasket may be broken</td>
<td>Replace gasket</td>
</tr>
<tr>
<td>Water doesn’t drain properly</td>
<td>Pump may be clogged</td>
<td>Remove food particles from pump and impeller</td>
</tr>
</tbody>
</table>
Finding & Fixing
Leaks Outside

Automatic Irrigation and Sprinkler Systems

Follow the tips below to stop watering the street or sidewalk, and to avoid over-watering your lawn. Two common indications of a leak in these systems are an unexpected increase in your water bill or a wet area in your lawn that was usually dry. Additionally, water in the early morning to avoid the heat of the day when evaporation is highest.

Steps to Improve Efficiency:

1. Check your system annually for broken spray heads, or over spraying onto areas that do not need water or that are blocked by plants.

2. Adjust, clean or replace malfunctioning spray heads. If plants are blocking the spray head, replace with a taller spray head.

3. Set your irrigation system to apply water in the early morning before 6 a.m., make sure you are following the outdoor watering by-law. The City by-law states that during the months of June, July and August, the external use of water is permitted on even calendar dates at only those municipal addresses ending with even numbers 0, 2, 4, 6, 8 and on odd calendar dates at only those municipal addresses ending with odd numbers 1, 3, 5, 7. There are no restrictions on weekends or holidays.

4. Ensure your irrigation pressure is set for 30 psi.

5. Consider replacing pop-up spray heads with efficient multi-stream rotary nozzles.

6. Install a “smart” irrigation controller which will automatically adjust watering for weather changes.

7. Convert overhead spray systems to drip irrigation for watering trees, garden beds and shrubs.

Did you know?
You need a permit to connect an irrigation system to the City's water system. Look for a Smart Irrigation Professional to install your system.

Did you know?
As much as 50% of water used for irrigation is wasted due to evaporation, wind or runoff. Check the sprinkler system’s automatic timer and rain sensor to ensure the lawn is being watered only when necessary.
Outdoor Faucets

Outdoor faucets and hoses are common culprits for leaks outside your house. Keep a close eye on all taps, hoses and joints to make sure there is no water loss.

Found a leak? Here’s what to do:

1. Replace valves and washers if they are leaking.
2. If a hose is leaking, cut out the damaged section and reconnect the ends with a proper fitting which can be purchased at your local hardware or garden centre.
3. If your spray nozzle is leaking, replace the rubber washer in the hose fitting or sprayer.

Did you know?
During the warmer months, outdoor water use is the most common reason for a high water bill.

Swimming Pools

Warning signs that you have a leak in your pool or hot tub.

If you detect any of these signs it is recommended that you consult with a professional to assist you with the required repairs.

1. Loss of 0.5 cm of water or more in a two-day period
2. Algae growth soon after chemical treatment
3. Pool deck cracks, gaps and cracks in the pool shell
4. Constantly damp soil near the pool when not in use

If you are unsure if the water loss is caused by a leak or evaporation, try this simple test. Place a bucket on the top step of the pool and fill it with water to the pool’s water level. If after a day the water level in the pool is lower than in the bucket, there most likely is a leak in the pool structure or plumbing system.
Leaving Your House Unoccupied

Shut the water off when going away on vacation.

This is the best way to protect your home from leaks and large bills.

The main shut-off valve is located near the water meter usually located in the basement.

If you are unable to close the main shut-off valve in your home, turn off as many valves as possible to individual fixtures (sinks, toilets, hoses, etc.).

Did you know?

Most insurance companies won’t cover water damage if your water is not shut off while you are away.

WINTER TIP:
If there is a chance your pipes could freeze, open faucets and drain all waterlines before going away.
On average, 10% of homes have leaks*

Without an obvious puddle, most leaks will go unnoticed until you receive a shockingly large water bill. You don’t need to be a plumber to check out many common problem areas in your home.

How Much Water is Lost?
Small household leaks left unrepaired can lead to big trouble over time

<table>
<thead>
<tr>
<th>Leak Source</th>
<th>Typical Leakage</th>
<th>Litres/Day Used</th>
<th>Litres/Month Used (30 days)</th>
<th>Litres/Year Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running Toilet</td>
<td>3.78 litres/minute</td>
<td>5,443</td>
<td>163,290</td>
<td>1,986,768</td>
</tr>
<tr>
<td>1/16” steady leak stream</td>
<td>16.1 litres/hour</td>
<td>387</td>
<td>11,610</td>
<td>141,255</td>
</tr>
<tr>
<td>In-ground irrigation (Warm weather months May - Sept.)</td>
<td>1/32” in diameter</td>
<td>794</td>
<td>23,820</td>
<td>120,688 (Based on 5 months May - Sept.)</td>
</tr>
</tbody>
</table>

A leaky faucet that drips at a rate of one drip per second can use more than 11,600 litres of water per year.

Each March in North America, FIX A LEAK WEEK takes place. This week is a reminder for everyone to review their water usage and to look for costly leaks.
London is a WaterSense Partner

The City of London and the EPA WaterSense program have partnered to promote water efficient products in our community. We encourage you to look for the WaterSense label when replacing or upgrading your water fixtures and appliances. WaterSense products are now available in Canada.

So what does the WaterSense® label mean for you?

The toilets, showerheads, faucets and accessories that earn the WaterSense label meet the following guidelines:

• The product performs as well or better than their less efficient counterparts.
• The WaterSense® labeled product is at least 20% more water efficient than average products in that category.
• The product provides measurable water savings results.
• The product achieves water efficiency through several technology options.
• The product and manufacturer obtain independent, third-party certification and verification of the above criteria.

london.ca/leaks