

Why Water Conservation?

In this 'water-wise' series, we have learned that water conservation can save you money and improve on the ability of the Town of Markham's Waterworks Department to provide a safe, secure and reliable supply of water.

Learning how to read and interpret the water meter was identified as an important first step to becoming 'water-wise'.

We learned that in the summer, water use increases substantially, and that it should be possible to reduce lawn watering by up to 50%.

With careful plant selection, water efficiency won't ruin your landscaping but it **will** help the Town manage its high summer peak demands.

Inside the home, we discovered there are plenty of opportunities to cut back on water waste without cutting into our lifestyle.

Water efficient toilets and showerheads can deliver the same level of service while reducing overall water use by up to one quarter — with very attractive paybacks.

Assessing the water using habits of household members can also reap savings. The best advice is think before you turn on the tap.

We also learned in this series that water conservation is good for the environment.

The less water we use, the less water we need to treat, and the better the chances are that the treatment process will be able to do its job properly.

The bottom line? Becoming 'water-wise' can reduce water waste, reduce water costs for the household, help Markham Waterworks Department and help improve the environment.



Water - No Time to Waste!

Summertime, the living is easy... and your water consumption goes through the roof! Each summer, the average household's water consumption increases significantly, a large portion of which goes to water the lawn and garden.

So what, you say? We've got lots of water, don't we? Yes, but the cost of treating, pumping, storing and delivering this water isn't cheap. Anything we can do to keep costs down by conserving water just makes good sense.

The articles in this series contain helpful tips and information about water conservation from the Town of Markham's Waterworks Department.

Information on the following subjects is included:

- outdoor water use, providing you with tips on how to use water wisely when watering the lawn and garden;
- landscaping alternatives that need less water;
- how watering less can actually be better for your lawn;
- how watering wisely helps the environment;
- how to prepare your water system for the winter;
- a tour of Markham's water and sewer system to show you how the system works, what service it provides and how you can help it to work better;
- indoor water use - how much water the average household uses and where the biggest opportunities are to cut back on use without cutting into lifestyles.



Waterworks Department

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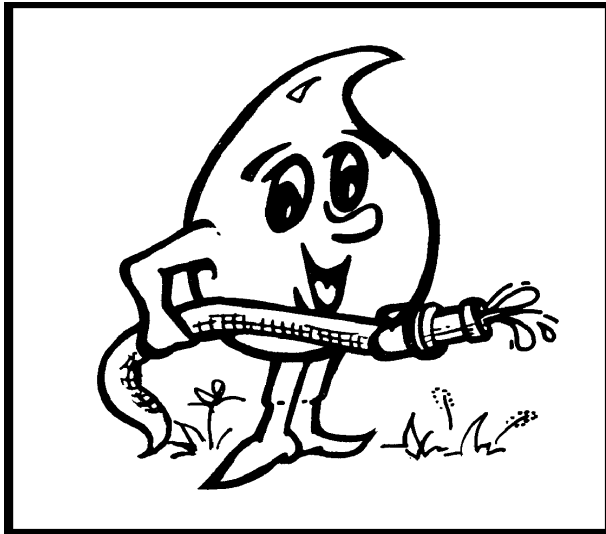
Website: www.city.markham.on.ca

Save on Outdoor Watering Costs

During the summer months there is a substantial increase in outdoor water usage. This can strain the system, leading to shortages and rationing. Savings in water consumption and dollars can be achieved without harming your lawn or landscape.

Here's a few tips to show you how:

- Avoid watering too much. Lawns need only 2 to 3 cm of water a week. Use a plastic dish as a 'water gauge';
- Water in the early morning;
- Avoid watering at midday or at night: midday watering will be wasted through evaporation; at night cool, moist conditions can lead to lawn disease;
- Cut your grass high by setting mower blades between 5 and 8 cm - providing shade for the roots;
- Leave grass clippings on the lawn as a water-conserving, and soil improving, mulch;
- Put an 8 to 15 cm layer of mulch on the garden to help retain moisture;
- Try rain barrels under your downspouts and use this water for your garden;
- Don't leave the hose running when you wash your car - use a bucket of soapy water and a trigger nozzle which shuts the hose off automatically between rinses;
- Use a cover for the swimming pool to reduce evaporation losses and check your system for leaks.



Environmental Benefits of Water Conservation

Water is one of our most precious resources.

It passes through our households and businesses, cooking our food, bathing us, washing our clothes, watering our lawns and carrying away the various by-products of our lives.

When we're finished with it, we return it to the same body of water it came from — usually in a much poorer state.

In effect, we don't just use water, we *re-use* it — a sobering thought next time you flush the toilet and then reach for a glass of water!

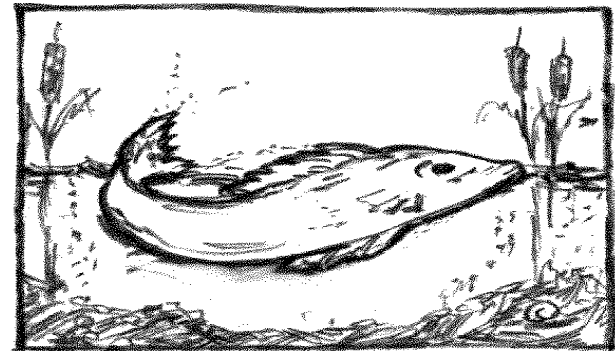
So be careful what you pore down the drain! Remember, the sewers are for human waste only. So, **that litre of turpentine or paint thinner** should be **disposed of in a proper manner**, by taking it to the nearest Household Hazardous Waste Depot.

Pouring it down the drain introduces toxic chemicals into the sewage treatment system — chemicals that can impair the biological treatment process.

Caustic drain opening chemicals may be convenient, but they contain toxic substances that cannot be removed in the treatment process and may end up in our lakes and rivers.

Investing in a plumber's snake (available at all hardware stores) will do the job in an environmentally friendly way.

Many household cleaners contain substances that impair treatment. Why use harsh household cleaners when baking soda and a little elbow grease will do the job just as well — and save you money?



Watch Water Use in the Kitchen and Laundry Room

Which uses more water in a typical week, the dishwasher or the clothes washer? If you guessed the clothes washer, you're right.

After the toilet and showerhead, the washing machine is the next biggest water user in the home.

The typical washing machine uses about 210 litres per cycle. According to Consumer Reports magazine, the average family of four washes 8.5 loads per week. That's nearly 1,800 litres per week, or 90,000 litres (about 20,000 gallons) per year.

Based on the Town of Markham's current water rates, this works out to about \$100 per year (plus about \$10 per year in electricity costs).

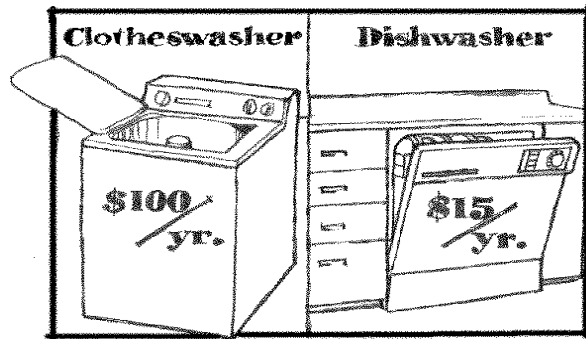
Canadian Consumer magazine reports the average water consumption for a dishwasher is about 40 litres per cycle.

Assuming one load of dishes per day, that works out to 280 litres per week, or about 3,000 gallons per year. That's \$15 per year in water costs and \$20 per year in electricity.

The best way to save water using these appliances is to be sure they are full before operating them.

If you reduce by just one cycle a week on both the clothes washer and the dishwasher, that is nearly 2,800 gallons saved each year — about \$14 plus additional savings on electricity costs.

Don't forget that most dishwashers and washing machines have a water conserving cycle. Use this whenever you can and save water — and the cost of energy to heat the water.

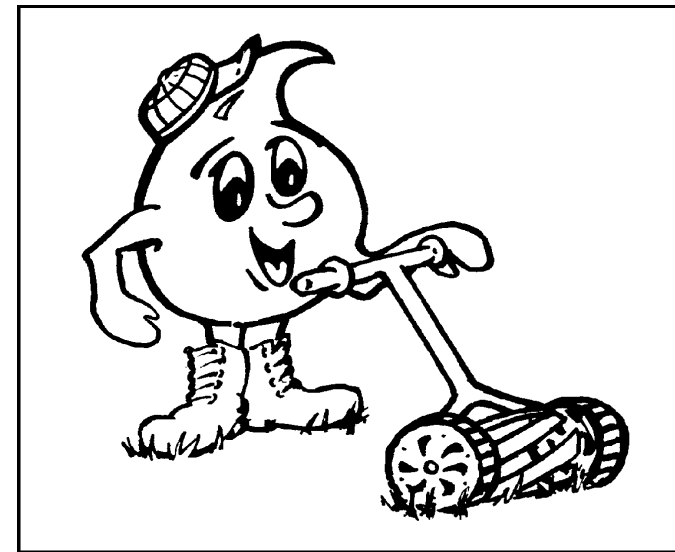


How to Be a Lazy Sod

To bag or not to bag? Should you leave your lawn clippings on the grass or rake them up?

Definitely, leave your grass clippings on the lawn. It can save you water, time and money. Here's why:

- Lawn clippings are over 50% water - leaving them on your lawn can reduce watering requirements and create an inviting environment for earthworms who provide natural soil aeration;
- Lawn clippings are nature's fertilizer. When left un-raked, they return nitrogen and other essential nutrients to your grass, saving you time and fertilizer;
- Clippings **don't** spread disease. The spores which cause disease are present whether you rake or not. Proper watering and sharp mower blades will help your lawn resist disease;
- Clippings don't cause thatch. Thatch is caused by rapid tissue growth in roots and crowns due to improper watering and fertilizing;
- Cut a little and often to ensure that clippings are short - remove no more than 1/3 of the total grass length at one time;
- Leaving clippings enables you to use less fertilizer and less water, saves money and produces less runoff, which is good news for the streams and rivers in the area;
- And, finally, don't forget that grass clippings add to the cost of waste collection. Try composting if you have a lot of clippings.

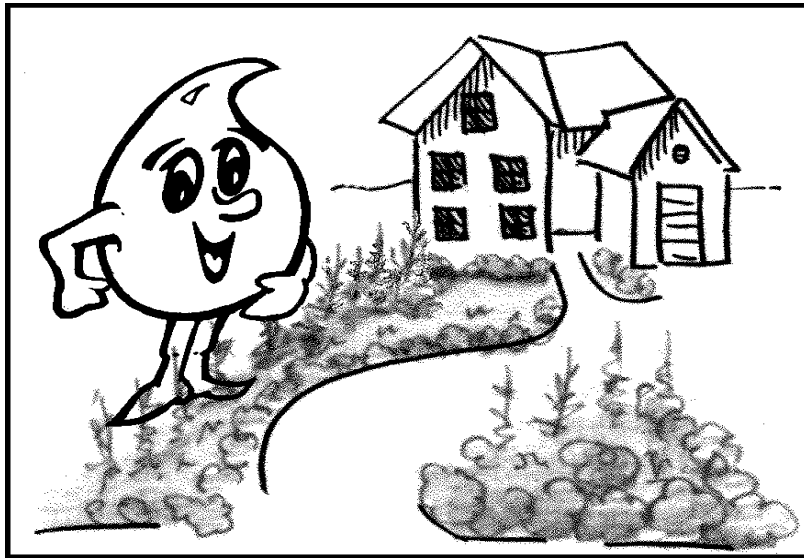


Planting the 'Right Stuff' Can Reduce Summer Water Use

In an earlier article in this series, we learned that lawn watering is the biggest factor contributing to Markham's summer peak water demands.

We provided helpful tips on saving water in terms of when to water, how much and how often. Here are more suggestions:

- Most turf grass needs constant watering. Try sowing a drought-resistant variety which will eventually replace your current lawn and reduce watering requirements.
- When you are planning to re-landscape, consider reducing your lawn area by adding more garden beds.
- Select plants and shrubs native to this area. Most native plant material can usually get by on the water that mother nature provides as well as resistant to insects and disease.
- Natural landscapes look great and require virtually no maintenance — which means no worries when you go on vacation.
- If you don't know where to start, there's no better source than a local garden club, organic gardening association or local nursery.



Bathrooms Account for 70% of Household Water Use

Did you know that the bathroom accounts for about 70% of the water used indoors? And, the biggest contributor to this total is the toilet.

The average toilet uses about 20 litres (4.5 gallons) per flush. If the typical family of four persons each flushes the toilet four times a day, that's nearly 2,250 litres (500 gallons) per week down the drain!

Over the course of a year, that's over 110,000 litres (25,000 gallons) — enough to fill the typical backyard swimming pool! A cost of about \$120 based on Markham's current water rates.

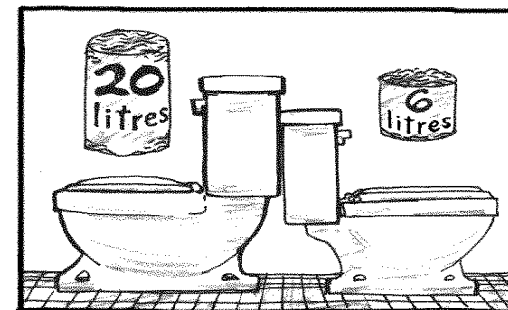
The shower is the next biggest water user in the typical bathroom. Some showerheads have flow rates of up to 20 litres per minute. A seven minute shower often consumes about 140 litres (30 gallons).

Two showers a day for two adults adds up to about 100,000 litres per year (over 22,000 gallons).

Here's how to help reduce the flow:

- Installing a set of toilet dams (for only \$10 to \$15) will save about 5 litres per flush;
- For about \$150 (including installation), you can invest in a new, CSA-approved 6 litre toilet and save 14 litres per flush over the 20 litre model (payback is about 2 years, based on a \$75 per year savings);
- Install a water efficient showerhead (for about \$25) and cut water use in half. This will save you about \$50 per year on your water bill (a 6 month payback) and will also reduce your energy costs to heat the water.

Studies show that we spend a lot of time in the bathroom. With water conservation, it's still possible to spend the time, without spending as much money.



Water Conservation has Its 3 R's Too

Water wisdom begins at home (it's easy to cut back without cutting into our lifestyles), most of us use more water than is necessary.

Water conservation doesn't mean cramping our lifestyle by going without. It simply means reducing the amount of water which goes to waste.

Following the 3 R's of water conservation — *reduce, repair and retrofit* — can help to conserve water. Here's how to apply them around your home.

Reduce

Look for ways to reduce the amount of water you use in your home. It's surprising just how much water we waste;

- In the bathroom, don't leave the tap water running while shaving or brushing your teeth;
- In the kitchen, avoid excessive running of the tap water while preparing food;
- In the laundry room, only use the washing machine when there's enough for a full load.

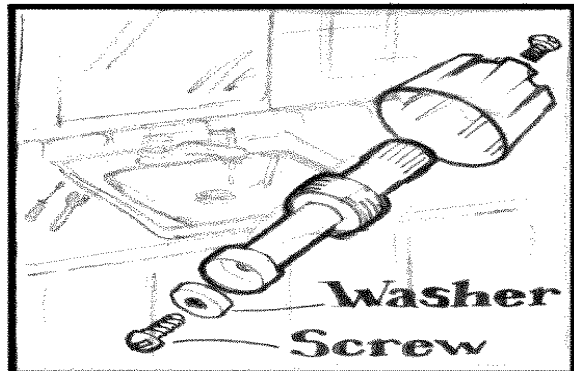
Repair

Don't put off fixing that leaking faucet. A leak of one drop per second wastes 10,000 litres of water in a year. That's about \$10 a year based on Markham's water rates.

Most leaking faucets are easy to fix with a new washer that only costs about 25¢.

Retrofit

Many household fixtures, such as toilets and showerheads, can be adapted or replaced with more water efficient alternatives that use much less water.



What Water Costs in Markham

Did you know that the average family of four in Markham uses between 8,900 to 11,350 litres (1,950 to 2,500 gallons) of water each week?

At the current combined water and sewer rate of \$5.01 per 1,000 gallons, that works out to a weekly water cost of \$9.75 to \$12.50.

While this doesn't sound like much, it works out to between \$500 and \$625 per year — not a bad incentive to keep track of how much water your family uses in a week.

Markham Hydro's Billing Department keeps track of water use in each home through water meter readings, taken bi-monthly by meter readers. Businesses are billed monthly.

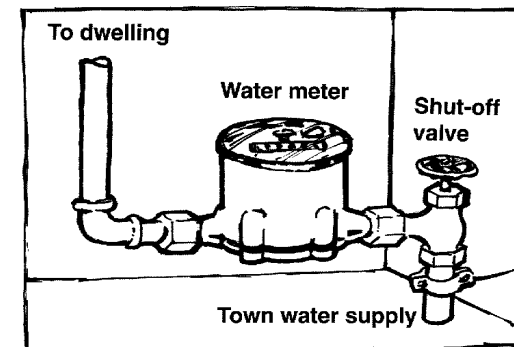
Your meter records usage, either in cubic meters or in imperial gallons, on a register much like the odometer on a car.

A small circular dial with a needle is also present on most meters. Each time the needle makes one revolution, it records a tenth of a cubic metre (100 litres) if it's a metric, or 10 gallons, if it's imperial.

To observe how the meter works, watch the needle dial the next time someone flushes the toilet in your home or business. If the needle travels half way around the dial on a meter reading in gallons, that's the equivalent of five gallons of water.

To find out how much water your household uses in a week, take a reading on Sunday night just before you go to bed and take a reading at exactly the same time the next Sunday and record the difference.

Using your meter to track water use is a logical first step to being 'water-wise'.



Lake Ontario Seasonal Odour and Taste Challenge

Markham buys its water from York Region which, in turn, purchases water from the City of Toronto. The Region has several storage tanks and reservoirs within and adjacent to the Town which feed the water network.

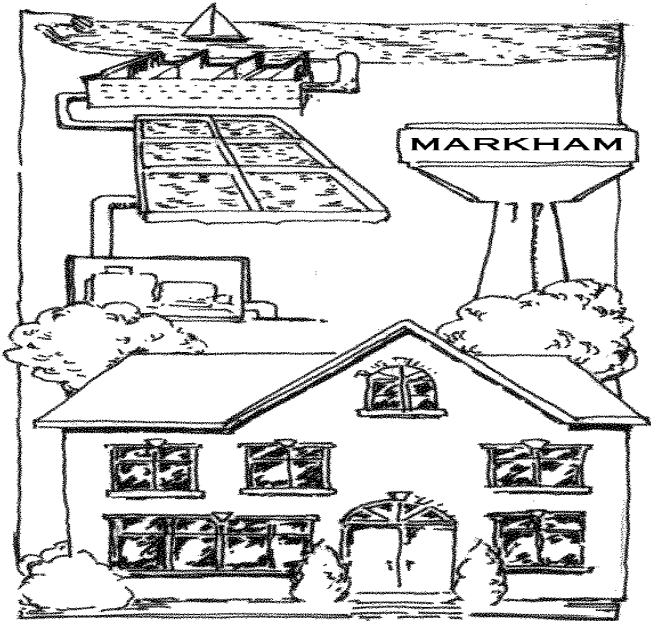
The seasonal changes in taste and odour you may experience are due to the changing seasonal conditions in Lake Ontario. Higher water temperatures at the end of the summer encourage the rapid growth of odour-causing algae.

However, the City of Toronto Works Department reports that "the bacteriological quality of tap water is not affected and water continues to be safe for drinking".

Toronto Works undertakes process changes at all of its water treatment plants to reduce the odour and taste effects of the algae, so the problem should only last a few days.

Every gallon of water you save through conservation represents a gallon that doesn't need to be processed through Toronto's water treatment plants or Duffin's Creek sewage treatment plant.

This saves on electricity associated with pumping, and it saves on chemicals needed for treatment.



Getting Your Water System Ready for Winter

When winter is approaching, it's time to think about turning off the water outside and getting your system ready for the cold weather.

All outside taps need special attention. Turn off the interior valves (usually located in the basement) which supply water to your outside taps. Then, open the outside tap and drain the water out of the section of pipe between the valve and the tap.

There's usually a little plug you twist open on the interior valve fitting to allow the water to drain.

Drain your hoses too and store them in the basement or the garage, to keep them from freezing — and to avoid being 'treated to a trick' on Halloween.

Don't forget the tap in the garage, especially if the garage is unheated. If it freezes with water in it, you could damage the valve or crack the pipe.

In many older houses with little insulation, water pipes under kitchen cabinets and sinks may be prone to freezing.

If your pipes freeze, thaw them out carefully. Don't use a propane torch or open flame; you may start a fire inside the wall.

Use a hair dryer or electric paint stripper on copper pipes but don't try thawing plastic pipes with anything other than a hair dryer. In really cold weather, you may need to leave your cabinets open.

You can often reduce the chances of pipes freezing by gluing sheets of foam insulation on the inside of the exterior wall under the cabinet or sink. Cover this insulation with drywall to protect it from fire.

