



City Of Guelph Outside Water Use By-law

Tree Watering

This fact sheet deals with watering of trees on residential or non-residential properties as well as watering of boulevard trees by residents on municipal property adjacent to homes and businesses.

Extent of End Use in City of Guelph

Newly planted trees (less than three years old) can become distressed by hot, dry weather. Even mature trees that are 15 years old or more benefit from irrigation during extended droughts when remaining soil moisture is so tightly held to soil particles that roots cannot use it. Additional water helps protect these older trees against invading insects and disease.

City of Guelph urges residents to water any newly planted tree that is close to homes or places of business during the summer. It also advises that during drought conditions, trees should be given higher priority than lawns. Lawns can be replaced in a matter of months whereas a 20-year-old tree will take 20 years to replace.

The City plants about 1,000 new trees each spring in addition to ones planted to replace those removed from parks for safety reasons, storm damage and other issues. Trees planted on boulevards are watered by municipal staff from a water trailer over their first growing season. The ongoing maintenance is then handed over to residents.

There are no strong data on the frequency with which residents irrigate trees on their properties or boulevards (i.e., in isolation from irrigation of lawns or garden beds). However, anecdotal evidence suggests that while the practice may be reasonably widespread, it is not a major consumer of water on its own.

Best Management Practices for Efficient Use¹

City of Guelph provides advice to residents on best practices for tree watering through its Healthy Landscapes program. Optimal watering techniques include the following:

- as little as 20 litres of water on a regular basis will help ensure survival;
- saturate the soil around the tree within the *dripline* (the outer edges of the tree's branches) and about 30-60 cm beyond the dripline;
- the objective is to water slowly, dispersing the flow to get it deep down to roots; watering for short periods of time only encourages shallow rooting which can lead to more drought damage;
- do not dig holes in the ground in an effort to water deeply—this can dry out roots;

¹ Advice here is drawn from the City of Guelph's Healthy Landscape program. See <http://guelph.ca/living/house-and-home/yard-and-garden/healthy-landscapes/water-wise-lawns-and-gardens/>.

- ideally, water using a root feeding probe which is inserted into the ground; this method prevents evaporation and therefore reduces the volume required in comparison to surface feeding;
- overhead spraying of tree leaves is inefficient and should be avoided; irrigate at ground level to avoid throwing water into the air; and,
- do not fertilize a tree that is under drought stress; this may burn roots and stimulate too much top growth that cannot be maintained during periods with limited soil moisture.

Advice for newly planted trees includes the following:

- newly planted trees require a regular supply of water to survive since they have not yet established a fine network of roots and are less able to absorb water;
- the most common reason for the poor survival of new trees is inconsistent watering;
- maintain soil moisture by watering the hole before planting and through regular, slow, deep watering;
- during dry periods, use a soaker or drip hose for supplemental watering;
- the best way to ensure that the water applied to the tree actually penetrates the root ball is to maintain an earth ring or saucer around the tree; place the hose in the saucer and water at very low flows for up to two hours twice a week;
- during a week when it rains two or more days, watering is not necessary;
- watering should continue until the first frost with one final soaking in late fall.

Advice for all trees—young and old—specifically during drought periods includes the following:

- trees of all ages suffer when extended drought conditions are experienced;
- water stress happens very quickly for trees planted in difficult areas such as sidewalks, patios, or raised lawns where water naturally drains away;
- symptoms of drought injury to trees can be sudden or may take up to two years to manifest;
- symptoms on leaves include wilting, curling at the edges, and yellowing;
- deciduous leaves may develop scorch, brown outside edges or browning between veins;
- evergreen needles may turn yellow, red or purple; they may also turn brown at the tips of the needles and browning may progress through the needle towards the twig;
- in continued drought, leaves may be smaller than normal, drop prematurely or remain attached to the tree even though brown;
- drought stress may not kill a tree outright, but may set it up for more serious secondary insect and disease infestations in following years; and,
- deep watering to a depth of 30 cm (12 in.) inches below the soil surface is recommended.

Other Considerations

In 2012, Guelph City Council approved an *Urban Forest Management Plan*, designed to provide a more comprehensive and strategic approach to this matter. This plan outlines guiding principles, a vision and strategic goals for the City's tree canopy for a 20-year period, as well as 22 recommendations designed to transition from reactive to proactive management of the

urban forest. Details on how to access this plan can be found at <http://guelph.ca/plans-and-strategies/urban-forest-management-plan/>.

Contribution to Overall Outdoor Water Use

Indicator	Impact
Portion of customers that practice the end use	Low
Average volume of water used each time the end use is practiced	Medium
Average frequency with which customers practice the end use	Infrequent
Contribution of end use to overall outdoor consumption	Low