BEACONSFIELD

The vital role of our unique natural assets

Have you ever experienced flooding, heat waves or power outages caused by freezing rain? Beaconsfield has already faced these challenges, and climate change is expected to make such events more frequent and intense. Fortunately, our natural assets help protect our community by reducing these risks and enhancing our resilience.

Understanding natural assets

Natural assets are elements of the natural environment that provide essential services to our community. This guide highlights the crucial role they play in mitigating the impacts of climate change while also delivering economic and health benefits. In Beaconsfield, the two most important natural assets are ditches and trees.

Managing stormwater through ditches and replanting our urban forest with young, hardy trees are among the most effective ways to strengthen our community's resilience to climate change. This guide explains how these natural assets contribute to climate adaptation and outlines specific actions you can take to help enhance them.

BEACONSFIELD'S MOST IMPORTANT CLIMATE VULNERABILITIES

OVERLOADING OF THE SANITARY SEWER SYSTEM AND STORMWATER NETWORK

Local (recent) examples :
Intense rainfalls in Quebec (2024)

Consequences:

- Sewer backups in many Beaconsfield homes, causing property damage and posing public health risks
- Flooding through windows, foundations and doors
- Overflowing catch basins

LOSS OF OUR URBAN FOREST

Local (recent) examples :

- Aging tree species planted in the 1950s reaching the end of their lifespan
- Impact of the emerald ash borer
- Tree damage and loss during the 2023 ice storm and severe thunderstorms

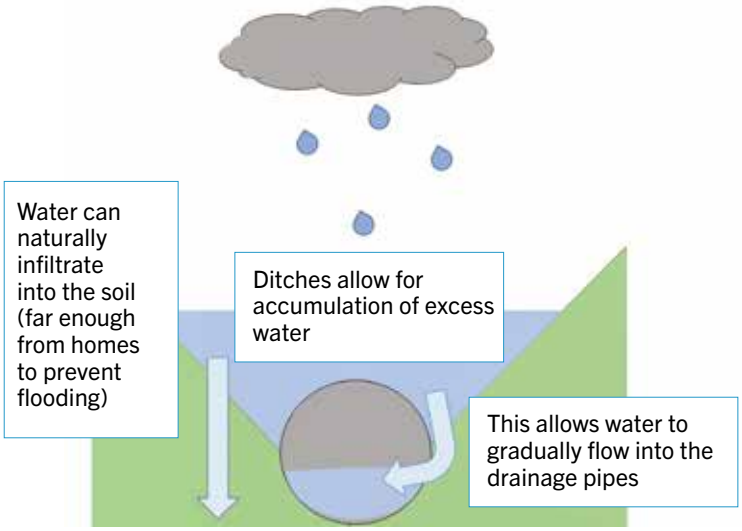
Consequences:

- Increased risk of heat exhaustion and heat strokes
- Reduced ability of trees to manage stormwater
- Loss of habitat for biodiversity

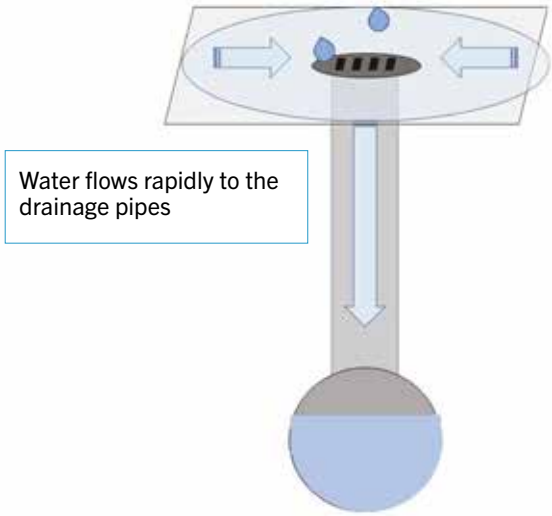
OVERVIEW

How sanitary sewer overloading happens – and how ditches help

DITCH



DRAINAGE SYSTEM



- **Cause:** increased rainfall and extreme weather events due to climate change
- **Natural asset that helps:** ditches!
- **Solution:** Climate change increases the risk of flooding, but ditches play a crucial role in reducing this risk by containing excess water and slowing its flow. To maximize their effectiveness, ensure your sump pump drains towards the ditch by:
    - Using a leak detector dye tablet in your sump pump to track where the water is being directed
    - Simply contacting the Urban Planning department (inspection@beaconsfield.ca), who will send an inspector to your house to help you find out

Municipalities across Quebec are faced with basement flooding caused by groundwater seepage and sewage backups. These incidents were linked to increased rainfall, extreme weather events, and improper drainage practices. Beyond property damage, flooding poses serious health and safety risks. When a backup or overflow occurs, raw sewage can flow back into homes, damaging floors, walls, and furniture while exposing residents to harmful contaminants.

Why your ditch matters

Reducing flooding and improving water quality

Unlike many municipalities on the island of Montréal that rely on traditional pipe systems, Beaconsfield benefits from a natural flood protection asset: ditches. Open ditches are far more effective at managing heavy rainfall than underground pipes, significantly reducing the risk of overloading our stormwater system when used in conjunction with open streams, culverts, trench drains and traditional storm pipes.

How ditches prevent flooding

- During heavy rainfall, ditches **contain excess water** and **slow its flow**, reducing the risk of overflow.
- In contrast, **piped systems cannot store excess water**, and the accelerated water flow during extreme weather events greatly increases the risk of flooding.

This advantage is particularly important during peak flow periods and prolonged rainfall. **Open ditches help protect Beaconsfield from extreme weather without requiring costly infrastructure upgrades**. Additionally, the grass and vegetation within ditches naturally **filter pollutants**, improving the quality of water entering Lake Saint-Louis.

Reduced costs

Piped drainage systems are much more expensive to build and maintain than roadside ditches. By relying on an open ditch system, Beaconsfield can **extend the lifespan of its infrastructure and save thousands of dollars in maintenance and repairs**.

Ditches and trees: powerful allies in flood prevention

While ditches divert stormwater toward the stormwater drains, trees help absorb excess water that seeps into the soil near your home. Together, they provide the most effective protection against water infiltration, reducing the risk of basement flooding through walls, floors and windows

In the long run, ditches remain the simplest and most cost-effective solution for protecting Beaconsfield and its residents from flooding during extreme weather events.

Maintain your ditch to help protect your property!

Regular mowing, choosing appropriate vegetation, and keeping culverts clear are essential to ensure proper stormwater drainage. For practical tips and to learn what to do if a problem arises, visit our website **beaconsfield.ca/ditches**.

What role can I play?

To maximize the effectiveness of our ditch system, your sump pump must drain toward the municipal ditch.

- **You can check this yourself by using a leak detection tablet to track the water's path.**
- **Need assistance? Contact the Urban Planning Department to request an inspection at inspection@beaconsfield.ca**

Why can't I drain my stormwater somewhere else?

If your sump pump is connected to the sanitary system, you risk overloading it, which can cause **sewer backups** – forcing contaminated water back up the drains and into basements. This leads to serious property damage and poses **severe health hazards**. This practice is **not permitted and punishable by a fine under By-law BEAC-046**.

If your sump pump drains elsewhere, such as onto your lawn or a neighbour's property, the water may not be properly managed, increasing the risk of **flooding your own or your neighbour's basement**.

If there is a ditch in front of your property, ensuring your sump pump drains into it is the best way to protect your home and community from flooding.

What else can I do?

Here are three additional steps to help make your home and community more resilient to flooding:

1
Protect your home from flooding by using the tools created by the University of Waterloo

Take this quiz to assess your level of protection against flooding

icca.uwaterloo.ca/checkup

2
Keep your ditches and drains clear, especially before and during extreme weather events.

Consult this guide to protect yourself against flooding

intactcentre.ca

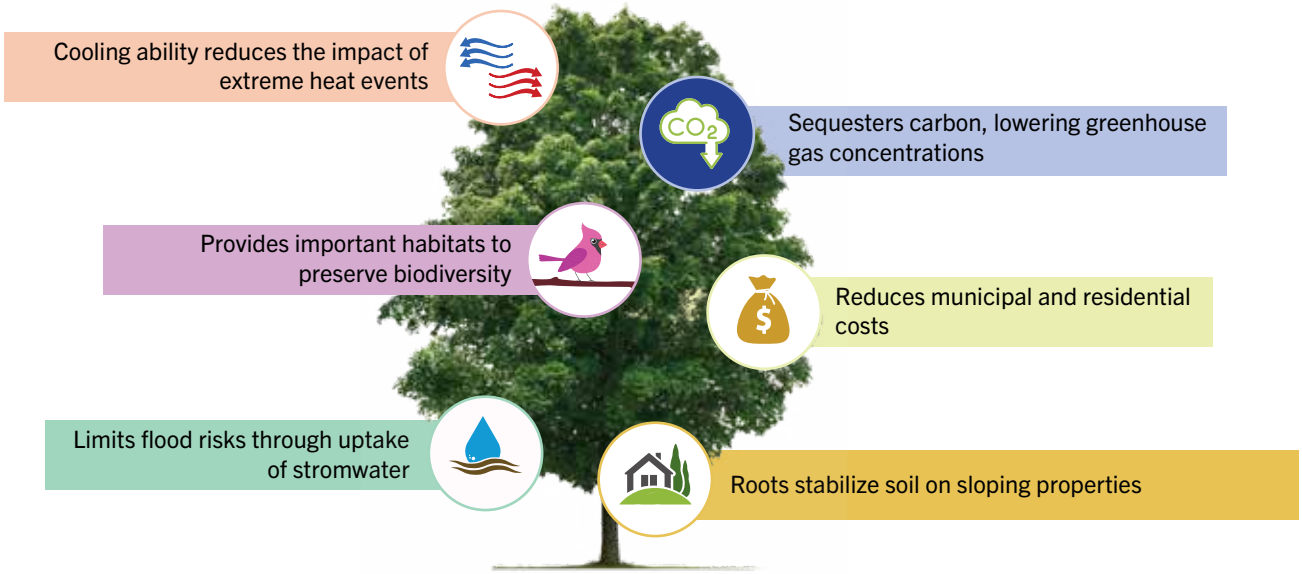
3
Ensure you have insurance coverage for sewer backups and groundwater seepage.

Consult this guide to learn more about flood insurance

redcross.ca

OVERVIEW

Protecting our urban forest – why trees matter



- **Cause:** the removal of aging trees and the impact of invasive species
- **Natural asset that helps:** trees!
- **Solution:** climate change increases the risk of heatwaves, but trees help regulate our microclimate by providing shade and cooling the air through evaporation.

You can benefit from our tree-planting programs:

- **Public property** (within 7m/23ft of the road):
  Contact arbres_trees@beaconsfield.ca to have a tree planted for free!
- **Private property** (further than 7m/23ft from the road):
  Apply for a tree subsidy through the Ensemble on verdit program:
  beaconsfield.ca/ensemble-on-verdit-en

Have you ever noticed how much cooler it feels when you step into a forest? That is no illusion – trees significantly lower temperatures in their surroundings, making them essential for regulating our microclimate. This is especially important as extreme heat events and heatwaves can lead to serious health risks, including discomfort, heat exhaustion and heat stroke. **However, our tree cover is declining at an accelerating rate.** The primary cause is the natural aging of our mature urban forest, with many species reaching the end of their lifespan. This decline has been further accelerated by invasive species such as the emerald ash borer. **Planting a tree today** not only helps renew our tree cover, but also strengthens the urban forest, making it more resilient to invasive species and destructive storms.

What are the benefits of your trees?

Cooling effect

Trees cool the air around them by converting liquid water into water vapour – a process they do constantly. Plus, they provide plenty of shade!

Although trees absorb large amounts of water through their roots, most of it – over 90 % - is released as water vapour through tiny pores under their leaves during photosynthesis. This process, known as transpiration, requires energy, which is drawn from the surrounding air, effectively cooling it in the same way an air conditioner does.

As a result, trees can reduce air temperatures **by 1 to 8°C**. Additionally, their shade helps keep surfaces like asphalt and concrete from heating up too quickly, creating cooler, more comfortable urban spaces.

Extreme heat events and heatwaves can lead to heat-related health problems such as heat exhaustion, heat stroke, and even fatalities. Trees play a critical role in reducing these risks and protecting public health during extreme weather.

Reduced costs

Air conditioning savings : in the summer, a strategically placed tree near a home or building can reduce air conditioning needs by up to 35%. Not only does this result in important energy savings, but it also helps cool the surrounding neighbourhood, as air conditioning units release hot air outdoors.

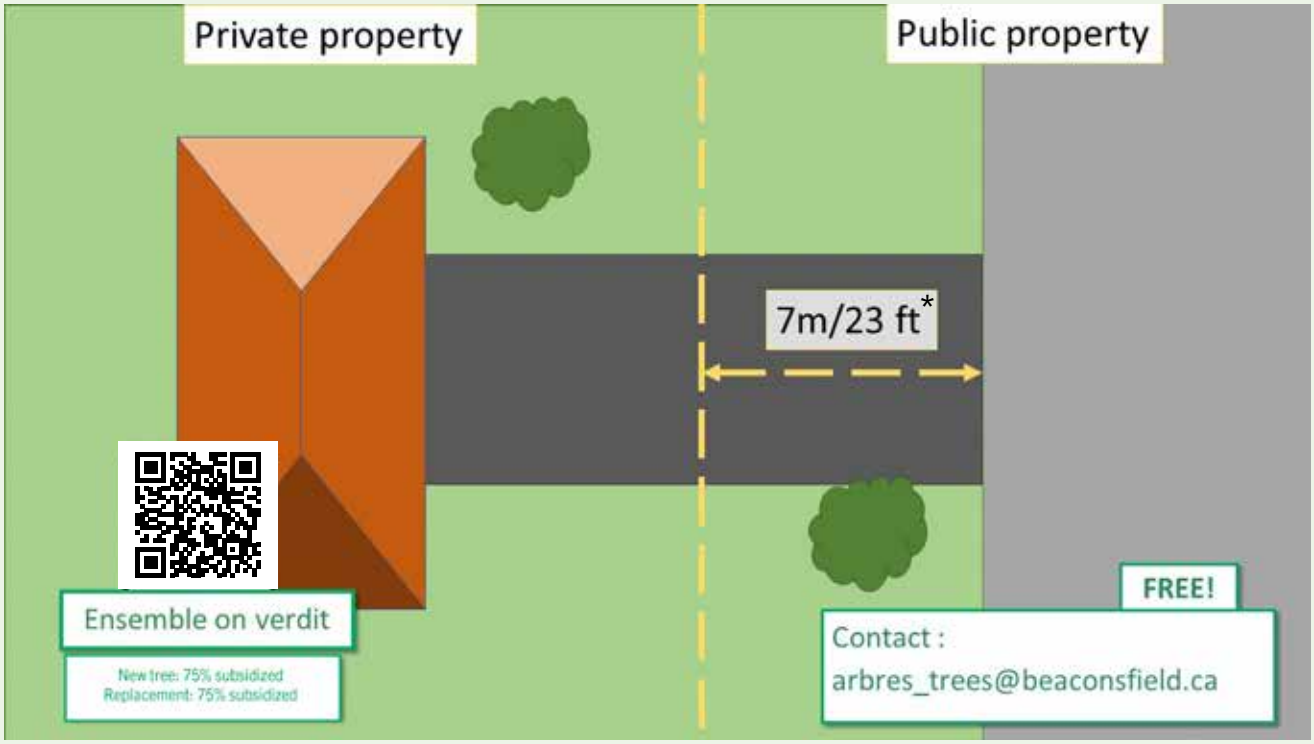
Heating savings: in winter, trees act as natural windbreaks, reducing heat loss and lowering heating costs by about 10%. This leads to important savings while also reducing heating-related emissions – Beaconsfield's **second-largest source of residential greenhouse gas emissions**.

Soil and water management: trees help manage stormwater by absorbing excess water through their roots, reducing the volume reaching ditches and easing pressure on municipal infrastructure. Additionally, tree roots stabilize soil and prevent erosion, making them especially valuable for properties on slopes.

What role can I play?

Plant a tree on your property!

- **Public property** (within 7 metres of the road*): get a free tree, with all maintenance handled by the City! Contact **arbres_trees@beaconsfield.ca** to request yours.
- **Private property** : Receive a subsidy for your tree purchase through the Ensemble on verdit program. Learn more at **beaconsfield.ca/ensemble-on-verdit-en**



*The location of the property line may vary. For the exact distance, please consult your certificate of location or contact the City.

Our tree planting programs

Details	Private property	Public property
Cost	New tree: 75% subsidized Remplacement: 75% subsidized	FREE
Services provided	GRAME offers free delivery, mulch and nutrient planting. They provide tips for taking care of your tree. Each tree has a one-year warranty	An inspector will work with you to choose the best location for your tree. The City is responsible for tree planting and maintenance.
Questions? Contact:	arbre@grame.org	arbres_trees@beaconsfield.ca
Supply is limited! Order as soon as possible to ensure you can get the species you want!		