

Guelph's Race To Zero Community GHG Emissions



Guelph is committed to the United Nations' Race To Zero campaign targets for the whole community to reduce greenhouse gas (GHG) emissions:

- Reduce community GHG emissions by 63 per cent against the 2018 baseline by 2030*
- Work together to become a net zero carbon community by 2050

Large community targets like these mean that this isn't just the responsibility of municipalities and utility companies—we all need to be part of the solution to reach these goals!

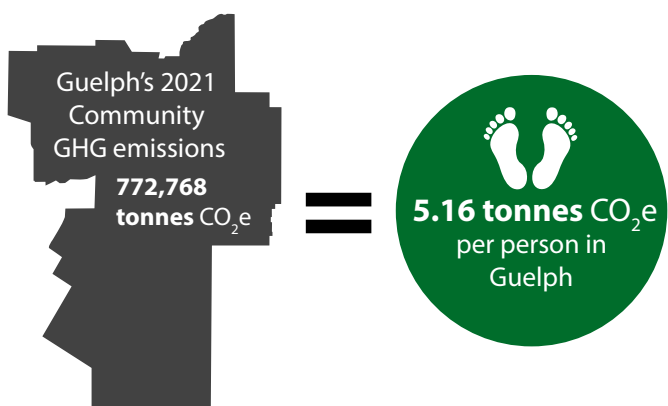
Year in review:

- Total community emissions in 2021 have gone up by over 3 per cent when compared to the previous year.
- **Despite rapid population growth, emissions levels have not gone up at the same pace. Emissions per person in Guelph has gone slightly down.**
- Emissions continue to decline from residential and institutional/commercial buildings. Emissions from industrial buildings has gone up slightly but not back to pre-COVID levels.
- Transportation emissions have rebounded significantly higher from last year.

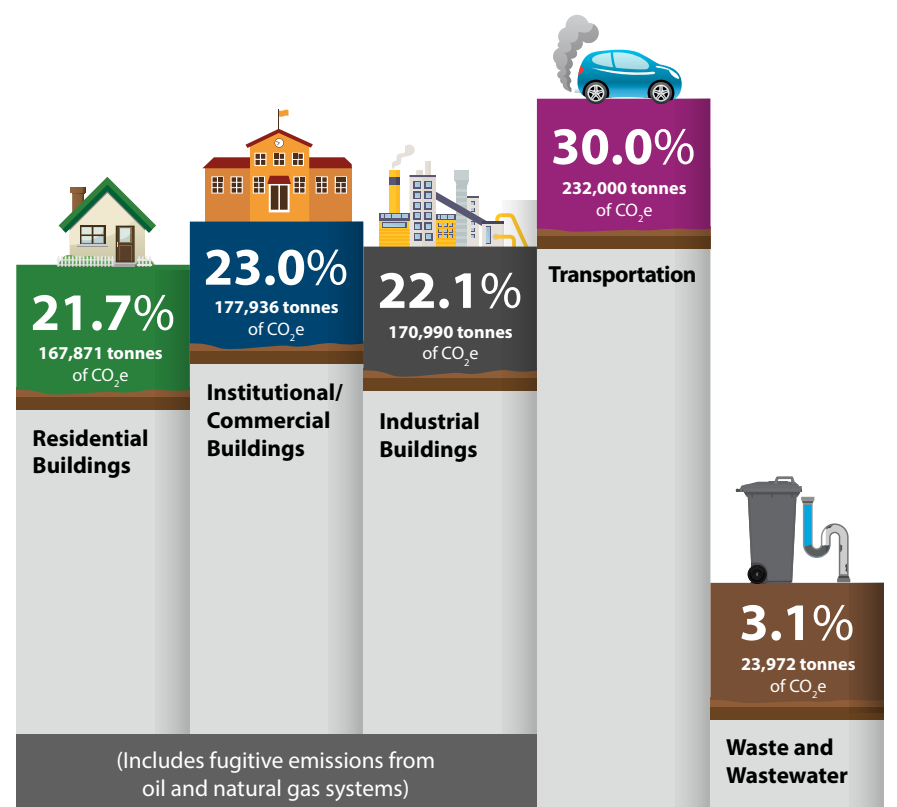
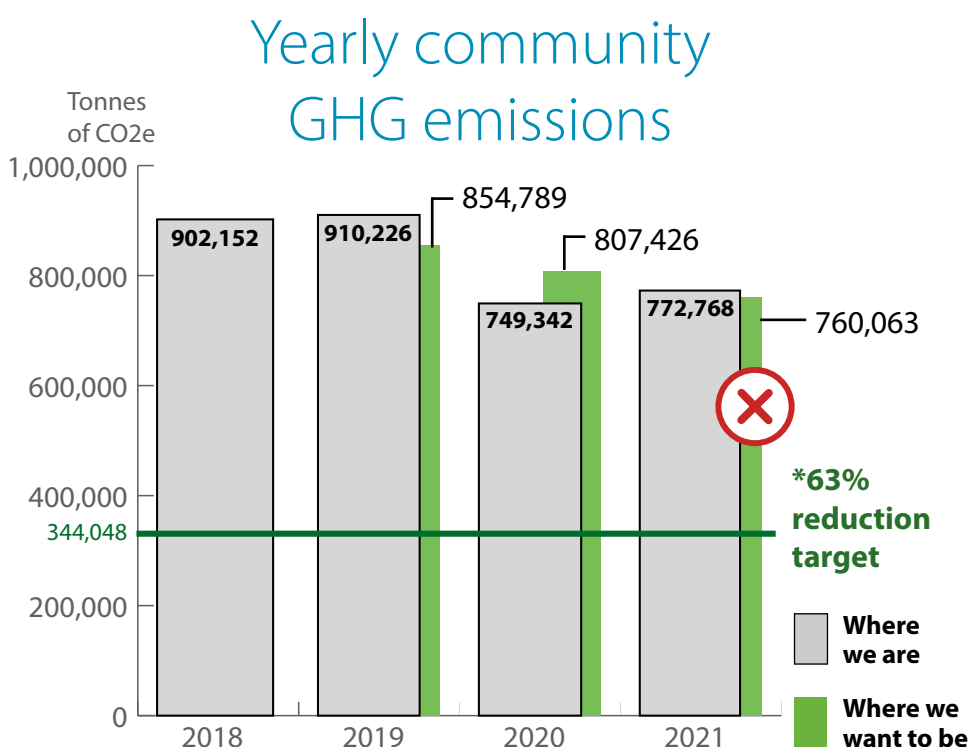
The City of Guelph incorporates environmental stewardship in all municipal operations and services to support the Race To Zero targets by:

- Reducing GHG emissions from municipal operations (Energy and Climate Change)
- Supporting and encouraging walking, cycling, carpooling, car-sharing and transit-use within Guelph (Sustainable Transportation)
- Leading in sustainable waste management (Solid Waste Resources)
- Protecting Guelph's natural heritage system and urban forest (Urban Forest and Natural Heritage)
- Restoring clean water (Wastewater Services)
- Efficiently supplying high quality drinking water (Water Services)

The amount of GHG emissions the community emitted each year



Where in the community GHG emissions are coming from



* 63 per cent reduction target applies to per capita emissions. Target line depicts GHG reduction based on 2018 population.

All data and analysis are based on current information at the time this report was prepared. This information is subject to be updated from time to time.

Accessible formats available by calling 519-822-1260 extension 2672 or TTY 519-826-9771.

Energy and Climate Change

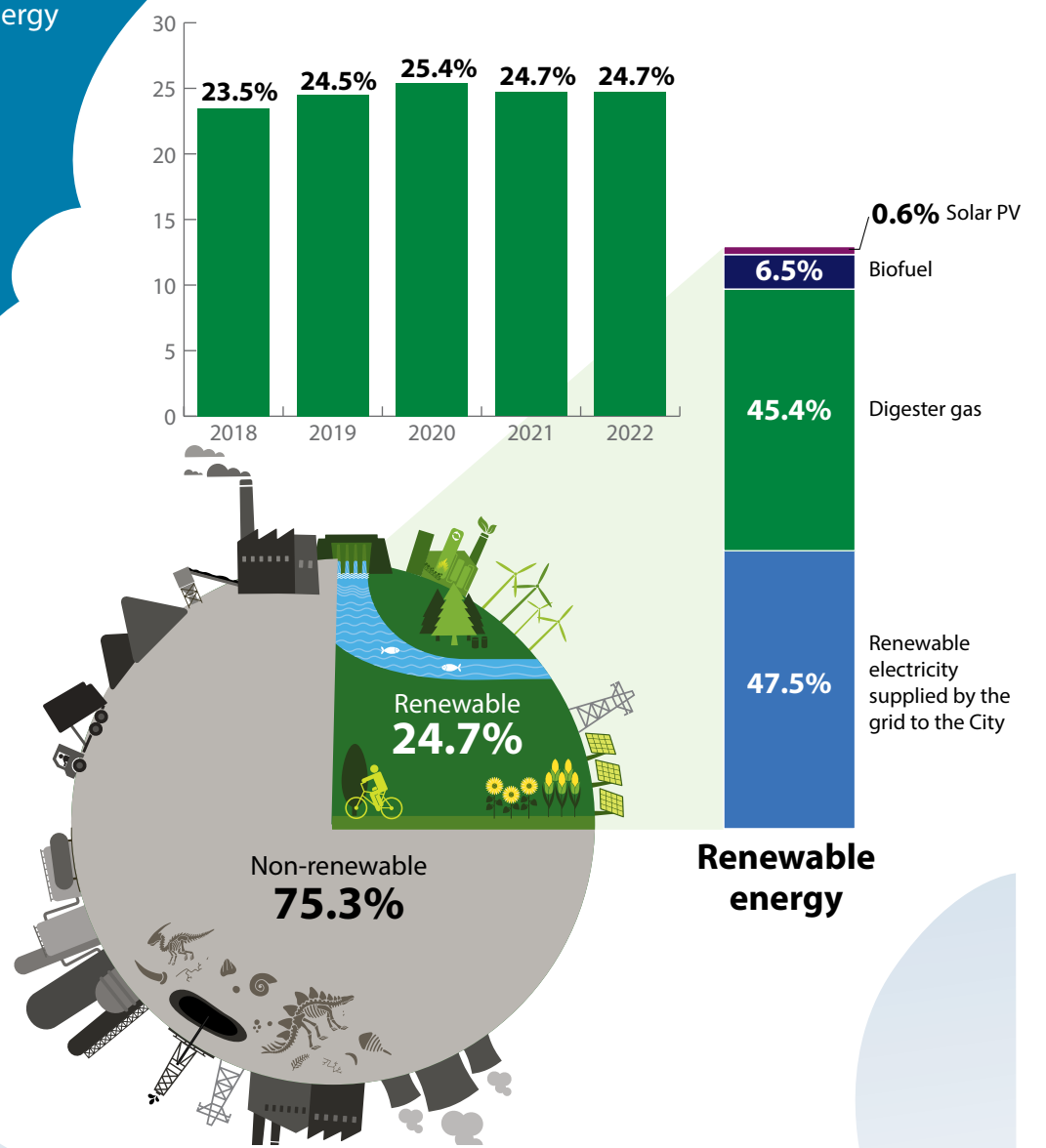
The City is taking an energy conservation and greenhouse gas (GHG) emissions reduction approach to reach our goal of having City facilities and operations using 100 per cent renewable energy (100RE) sources by 2050. This supports Guelph's Race To Zero commitments to be a net zero carbon community by 2050.

2022

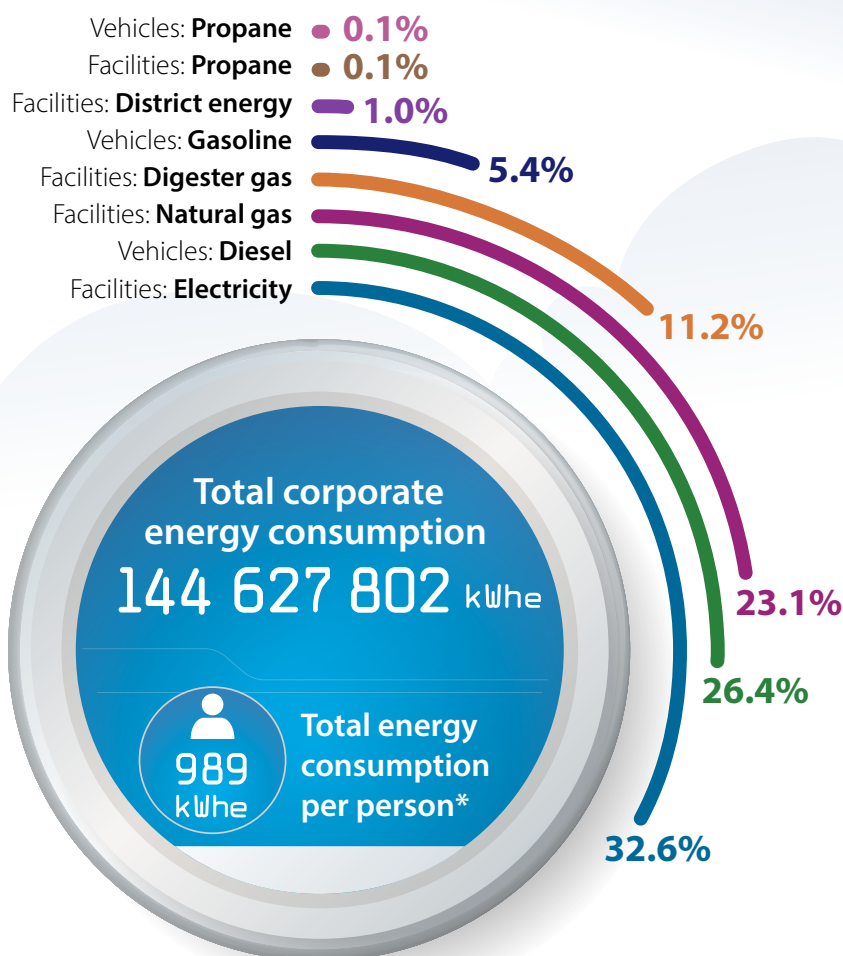
The City continues efforts towards the Corporate 100RE goal:

- GHG emissions were up 7% compared to last year, but remain below 2018 and 2019 levels. This indicates that we are making progress in some areas with past initiatives taking hold, but more work is needed to reach the Corporate climate change targets!
- Facility natural gas use was up in 2022 compared to 2021. Measures are already in place to reduce natural gas usage and we need to keep moving on these.
- More renewable generation—Over 22% solar PV capacity has been added to facilities last year with even more green energy on the way!
- Fleet fuels were higher in 2022. Electrifying vehicles will play a key role in pushing these emissions down.

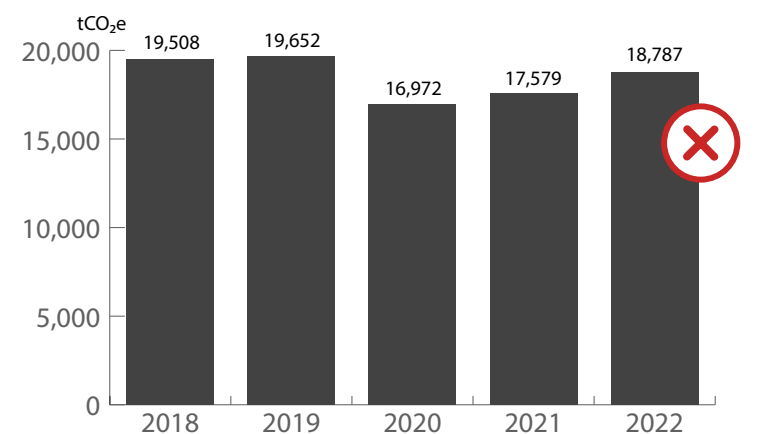
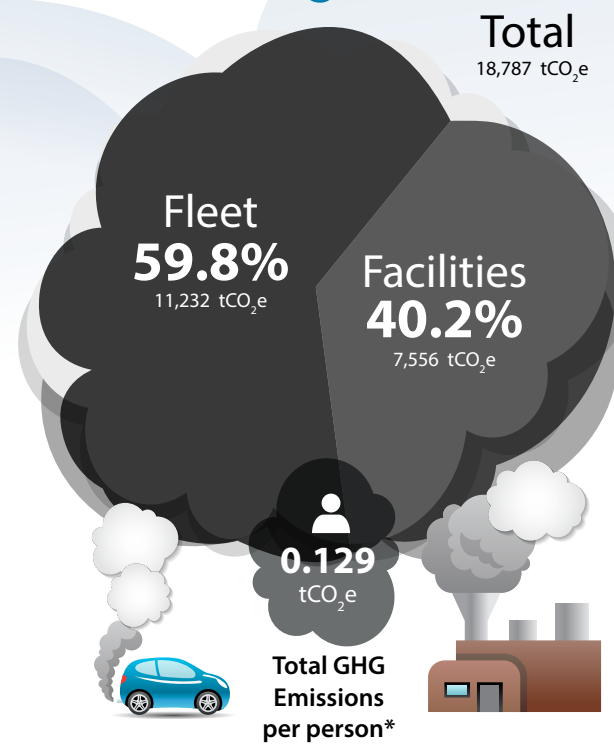
100 RE status



Total corporate energy consumption



Greenhouse gas emissions



Reported GHG emissions exclude biogenic CO₂ emissions.

*based on 2022 City of Guelph population.

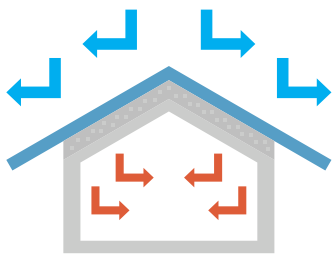
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What we've done







2022 key project highlights

-  Electricity savings
-  Natural gas savings
-  Other fuel savings
-  Water savings
-  Greenhouse gas emissions reduction
-  Energy cost savings/year
-  Project cost
-  Project status



Clair Road Emergency Services Centre building envelope upgrades




Insulation and air sealing at the emergency services building was improved to save energy by keeping the heat in and the cold out. Its like putting a nice big blanket around the building to keep things nice and comfy.

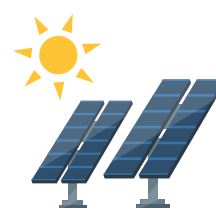
-  **9,000 kWh/yr**
-  **2,470 m³/yr**
-  **4,900 kgCO₂e/yr**
-  **\$2,000**
-  **\$94,000**
-  **Complete**



Lighting upgrades - multiple locations





LED lighting retrofits at several facilities (locations including Exhibition Arena, Library Branches and the Clair Road Emergency Services Centre) were completed to save energy and improve lighting conditions for those exciting story times!

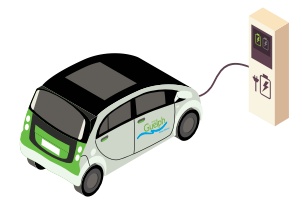
-  **188,000 kWh/yr**
-  **5,600 kgCO₂e/yr**
-  **\$23,000**
-  **\$226,000**
-  **Complete**



River Run solar PV expansion







With the design completed, the planning and construction is underway to add more solar panels to the roof of the River Run Centre that will generate renewable energy for that 'electric' performance!

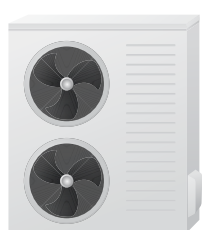
-  **176,600 kWh/yr**
-  **5,300 kgCO₂e/yr**
-  **\$21,000**
-  **In progress**



Fleet electric vehicles







The City's fleet added four new electric vehicles to replace gas guzzlers with quiet, zero-tailpipe emissions vehicles that save energy and help improve air quality.

-  **-5,800 kWh/yr**
-  **2,600 L/yr gasoline**
-  **6,300 kgCO₂e/yr**
-  **\$3,000**
-  **\$40,000**
-  **Complete**



Victoria Road Recreation Centre HVAC upgrades to air source heat pump







Three roof top heating, ventilation and air conditioning (HVAC) units were upgraded with new units that recover waste heat and use air source heat pumps instead of natural gas to heat and cool the recreation centre.

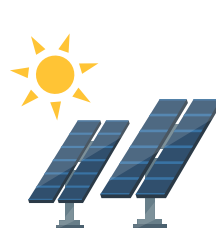
-  **-4,900 kWh/yr**
-  **20,420 m³/yr**
-  **38,400 kgCO₂e/yr**
-  **\$6,000**
-  **\$100,000**
-  **Complete**



Sleeman Centre cold water ice flooding


The Sleeman Centre removes air bubbles from flood water without burning natural gas to make a safe smooth sheet of ice and lets the ice rink compressors use less energy to keep the ice frozen. That's back-to-back wins for energy savings!

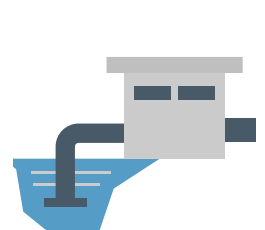
-  **44,000 kWh/yr**
-  **6,500 m³/yr**
-  **13,200 kgCO₂e/yr**
-  **\$7,000**
-  **\$40,000**
-  **Complete**



Waste Resource Innovation Centre scalehouse solar PV

A 60 kW solar canopy was constructed over the new public drop off scale house. So while you're being a 'good sort', we're generating clean energy.

-  **66,000 kWh/yr**
-  **2,000 kgCO₂e/yr**
-  **\$8,000**
-  **\$300,000**
-  **Complete**



Paisley Pumping Station upgrades

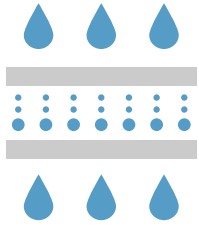
Upgrades were done to the Paisley pumping station, which provides homes and businesses safe, clean water everyday. This critical infrastructure now supplies more water to the growing community and in a more energy efficient way.

-  **60,100 kWh/yr**
-  **1,800 kgCO₂e/yr**
-  **\$7,000**
-  **\$500,000**
-  **Complete**

What we're planning




2023 key prospect highlights

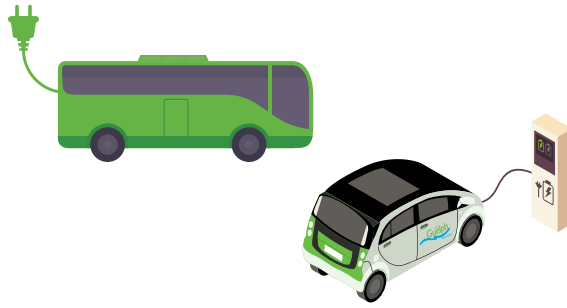
-  Electricity savings
-  Natural gas savings
-  Other fuel savings
-  Water savings
-  Greenhouse gas emissions reduction
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Water Resource Recovery Centre aeration upgrades





Construction will continue with the multi-year aeration plant upgrades at the City's Water Resource Recovery Centre. The upgrade includes replacing inefficient fixed speed blower equipment with dissolved oxygen controlled modulating blowers to optimize the treatment process and significantly reduce energy use.

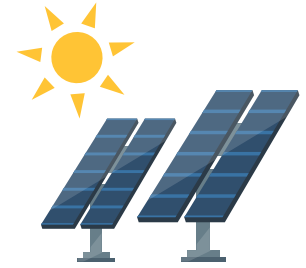
-  **6,750,000 kWh/yr**
-  **202,500 kgCO₂e/yr**
-  **\$813,000**



More fleet EVs

We're keeping things rolling on replacing those gas guzzlers and electrifying the fleet, with 8 more fleet EVs and 7 more E-buses coming our way.

-  **-599,500 kWh/yr**
-  **5,200 L/yr gasoline**
231,000 L/yr diesel
-  **642,600 kgCO₂e/yr**
-  **\$282,000**



Burke Well solar PV




Bring on the sun as we plan out more solar at the Burke Well pumping station. This energy efficient pumping station will get a renewable energy boost with some rooftop solar.

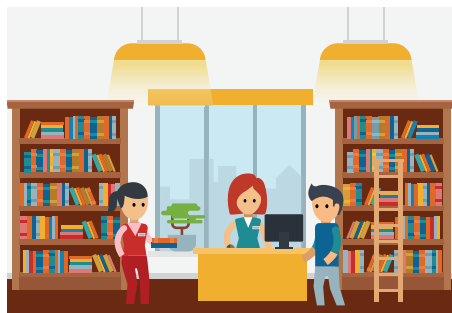
-  **11,000 kWh/yr**
-  **300 kgCO₂e/yr**
-  **\$1,000**



More lighting upgrades—multiple locations





LED lighting upgrades are planned for locations including the Guelph Sports Dome, Fire Halls, and the Riverside Greenhouse. This will improve lighting conditions and help those energy savings blossom!

-  **156,800 kWh/yr**
-  **4,700 kgCO₂e/yr**
-  **\$19,000**



Guelph Central Library—Zero Carbon Building

Construction will start for the new Guelph Central Library, which followed the Zero Carbon Building design standard. This will be a low carbon destination for the community to create, innovate, congregate and enjoy.

-  **-122,000 kWh/yr**
-  **36,230 m³/yr**
-  **64,700 kgCO₂e/yr**
-  **-\$3,000**



South End Community Centre—Zero Carbon Building

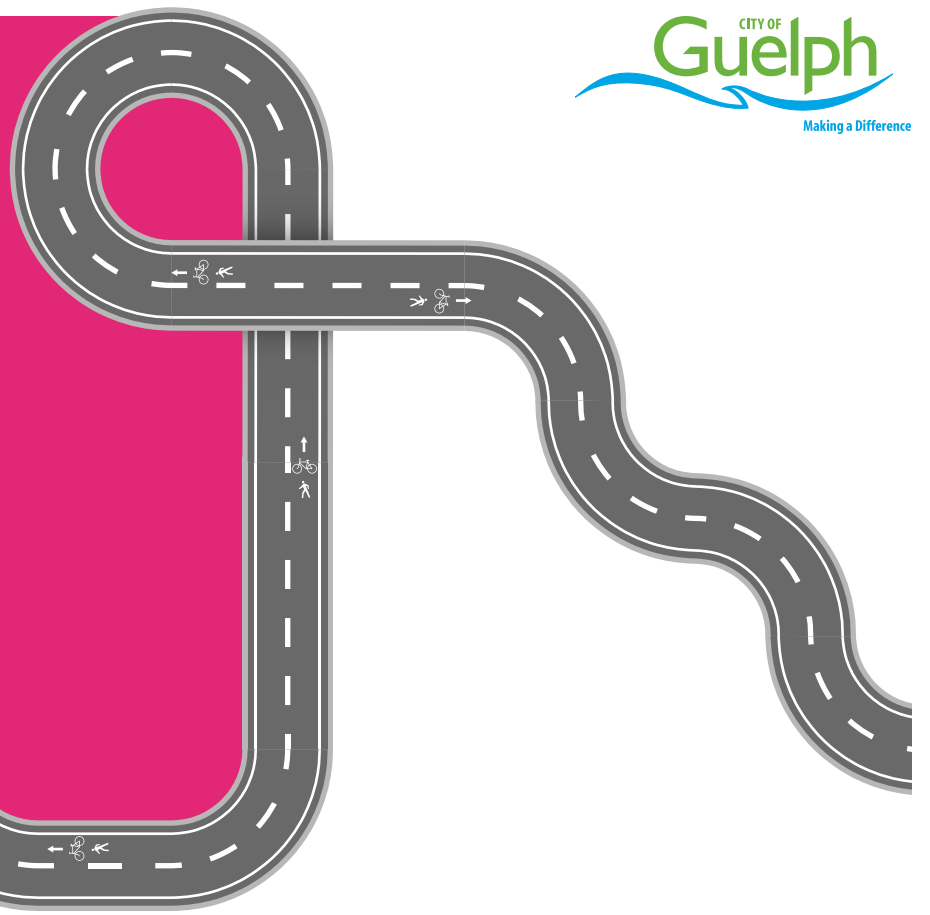
Construction of the new South End Community Centre will begin and will meet the Zero Carbon Building design standard. Design elements have been included to make this a low carbon, high performance building, so we can save lots of building energy and use our energy towards the things that count like having fun swimming lessons and cheering on those buzzer beaters!

-  **-1,290,300 kWh/yr**
-  **-42,300 kgCO₂e/yr**
-  **-\$155,000**

Sustainable Transportation

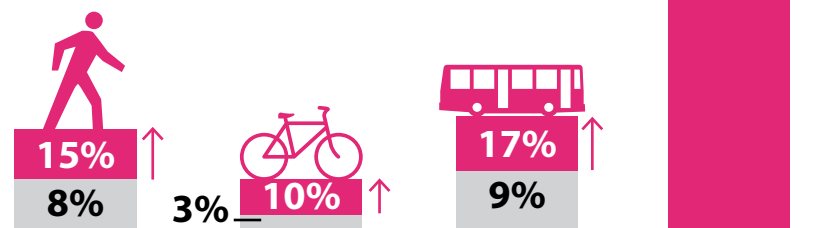
Sustainable Transportation supports the development and implementation of programs, policies and infrastructure to support walking, cycling, carpooling, car-sharing and transit-use within Guelph.

The goal of the Sustainable Transportation program is to increase the daily trips made by non-auto modes of transportation.



Shaping the future of transportation in Guelph

The 2022 Transportation Master Plan lays out how residents and visitors will move through the city over the next three decades. It sets a mode share target of 42 per cent non-auto trips and will contribute toward an estimated 23 per cent reduction in greenhouse gas emissions by 2051.

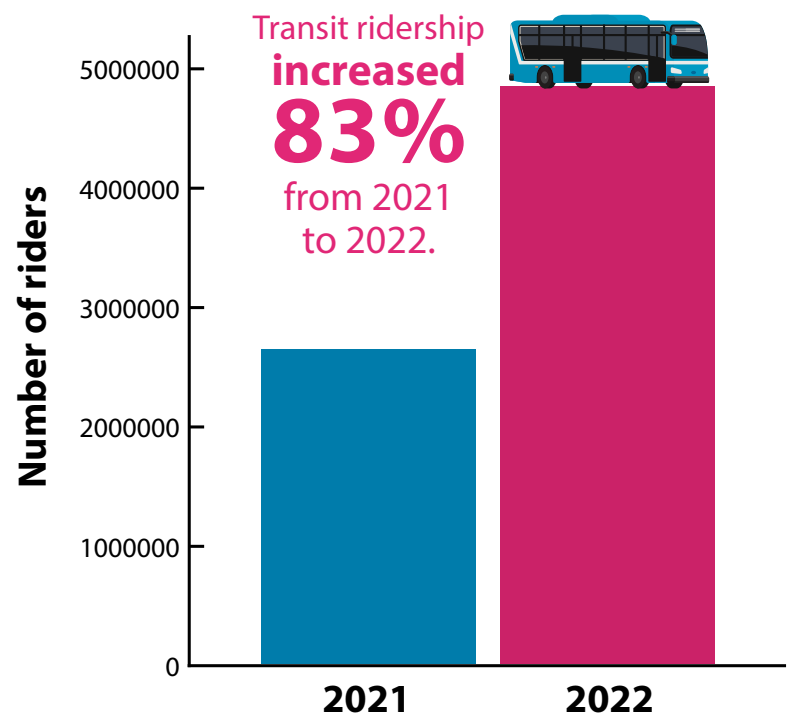


■ 2051 targets

■ 2016 percentages

Source: 2016 Transportation Tomorrow Survey

Growing transit ridership

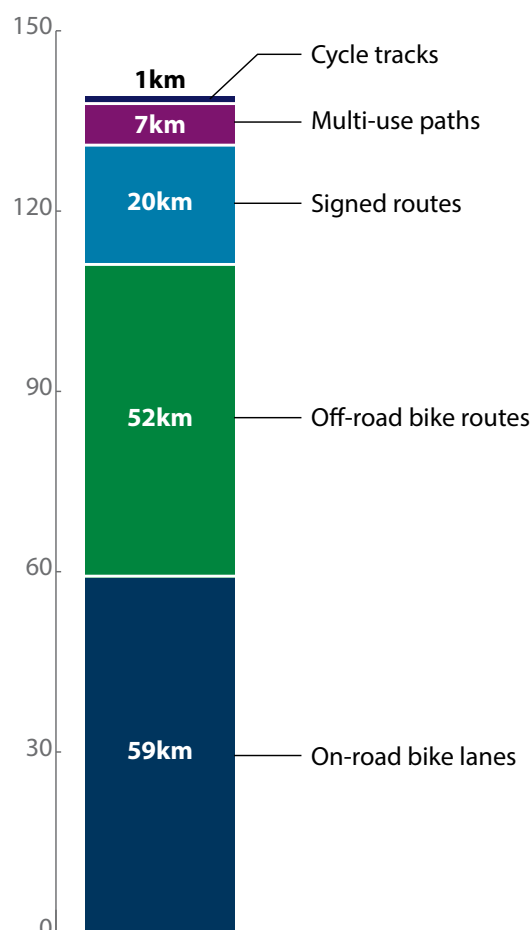
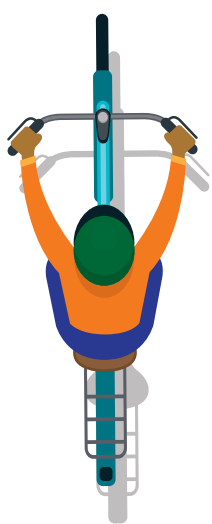


Note: 2021 was unusually low due to COVID.

Expanding the cycling network

7% ↑
139 km
in 2022

130 km
existing
in 2021



Measuring active transportation



The City gathered 1,458 hours of pedestrian and cyclist count data across 27 locations. We use the data to help us make informed decisions about future sustainable transportation projects.

What we've done

2022 key project highlights



Making developments more Active Transportation friendly

Sustainable Transportation staff reviewed and provided comments on over 118 development applications to advocate for a range of Sustainable Transportation measures such as indoor secure bike parking, visitor bike parking, carpool spots and vehicles, pedestrian connectivity, unbundled parking and transit supportive measures.



New walking and cycling facilities

The City upgraded the pedestrian crossing on College Avenue at Vanier Drive to include a crossside, constructed 2.1 km of multi-use path along Hanlon Creek Boulevard (Downey Road to Laird Road), and also installed Guelph's first bike signals at three intersections.



Funding for sustainable transportation

Staff secured \$50,000 from the federal National Active Transportation Fund to support the creation of an Active Transportation Wayfinding Strategy for Guelph.



Protected cycling infrastructure

Concept designs were completed for 'All Ages and Abilities' cycling facilities on Eramosa Road, College Avenue and Gordon Street. The 2.75 km College Avenue corridor (Janefield Avenue to Dundas Lane) will be the first to move into detailed design, starting in 2023.



Transit services and programs

Guelph Transit increased frequencies and schedules back to pre-COVID service levels and completed a comprehensive review of the fare system. The Kids Ride Free pilot program logged over 16,081 bus boardings by OnYourWay child fare card holders.



Developing cycling tourism

Through the Ontario by Bike certification program, businesses and tourism locations in Guelph can now become certified as 'bicycle friendly', helping them reach the growing number of cycle tourists in Ontario.

What we're planning

2023 key prospect highlights



'Complete Streets' philosophy

A Complete Streets Design Guide will be created to inform all future street design. The guide will explore road designs that are innovative in terms of multi-modal and environmental considerations.



Transit Action Plan implementation

The Guelph Transit Future Ready Action Plan will implement 2 new route extensions, increases to frequencies during midday service for select routes, and potential new route additions. These changes aim to increase ridership and will be the first steps to providing faster trip times.



New planning and policy studies

A Goods Movement Strategy will modernize how Guelph's transport networks support the local economy, a Transportation Demand Management Action Plan will design programs that support sustainable transportation, and a Transit Fare Strategy will create a fare system that is affordable, attractive and convenient.



Silvercreek Parkway North improvements

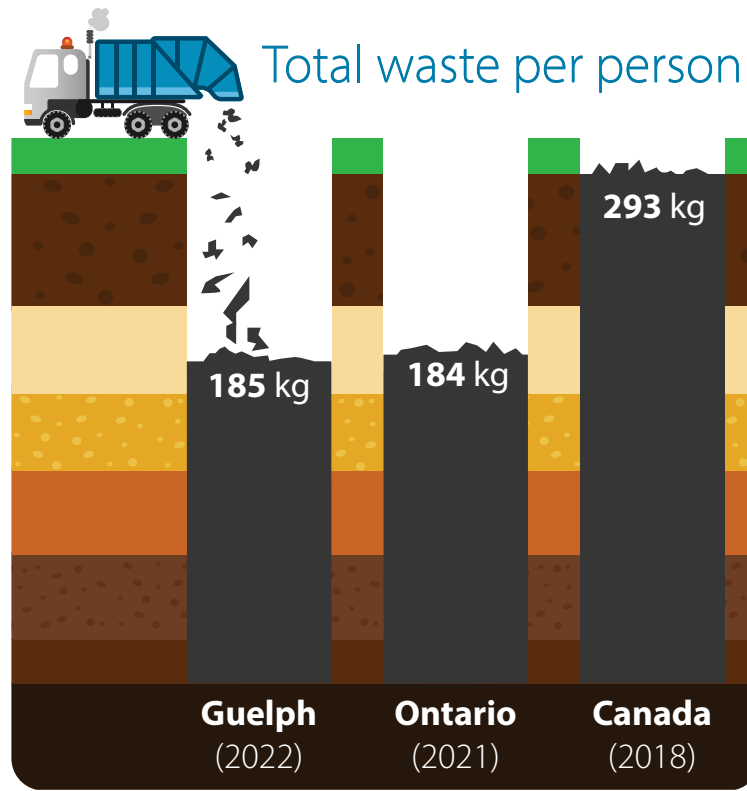
Multi-use paths will be added between Woodlawn Road and Speedvale Avenue, and bus stops will be upgraded for improved accessibility and comfort. Bike Lanes will also be added between Willow Road and Paisley Road.

Solid Waste Resources

In 2022, the City continued to build on Guelph's leadership in sustainable waste management.

In 2022...

- Guelph residents disposed of about 108 kg less waste per person compared to the national average.
- Guelph residents diverted 55 per cent of their waste away from landfill through proper sorting. Enhanced communications to households through promotion and education tactics will help improve sorting and the City's curbside diversion rate.
- The City's organic waste processing facility diverted 30,369 tonnes of organics from landfill, which was converted into 7,037 tonnes of finished compost. The 2022 tonnage does not include yard waste that is received for composting off site.
- Each household in Guelph disposed an average of 291 kg of waste in 2022. More work needs to be done for the City to reach its 2030 target of 250 kg of waste per household.

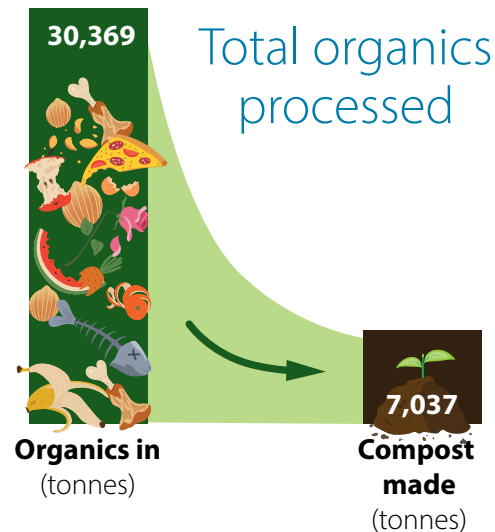


19,500 tonnes of CO₂e emissions was reduced by organics processing which is equivalent to taking 6,434 cars off the road for a year.

Total residential waste collected at the curb (tonnes)



23,600 tonnes of CO₂e emissions was reduced by capturing landfill gas used to generate electricity and is equivalent to taking 10,723 cars off the road for a year.

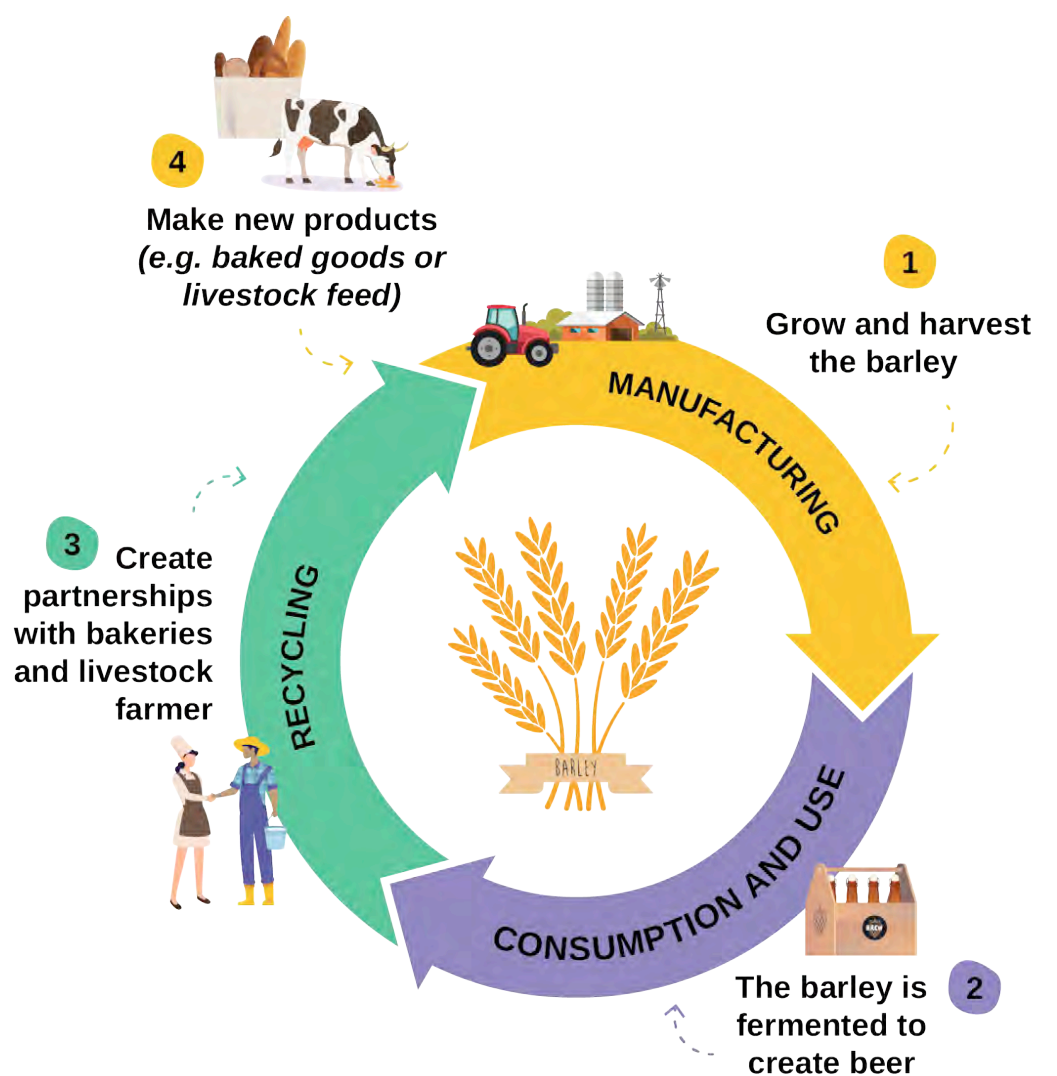


Total waste generated = 291 kg per household
The City's 2030 target = 250 kg per household



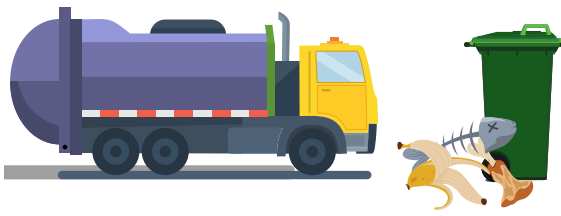
Solid Waste Management Master Plan and the Circular Economy

The City of Guelph has updated the Solid Waste Management Master Plan (SWMMMP), with a focus on prioritizing and adopting a circular economy as a guiding principle to further the City's aspirations towards our Net Zero Carbon by 2050 goals and Race to Zero. The SWMMMP explores new and innovative ways to support the waste management needs of Guelph's growing community. As part of the SWMMMP update, the City considered how new circular approaches to managing waste will change the future of waste management in Guelph and how the City can improve Guelph's current system for a more sustainable future. The SWMMMP provides strategic direction for managing the City's waste over the next 20 years. The SWMMMP will focus on supporting a circular economy, waste reduction policies and service level reviews, enhanced promotion and education, and community sharing and repair initiatives.



What we've done

2022 key project highlights



Artificial Intelligence (AI) Challenge

The City has initiated a pilot to use cameras in the hopper of the collections trucks and AI technology to identify contamination and edible food loss in the green cart. The pilot demonstrated that select items, including compostable bags, non-compostable bags, yard waste, recyclables, and avoidable food waste were successfully identified on a consistent basis resulting in a 90 percent or greater accuracy.



Single-Use Items Reduction Strategy

The City of Guelph implemented a single-use items (SUI) reduction strategy which includes a ban on plastic shopping bags and polystyrene foam cups and containers. Guelph is the first and only large urban municipality in Ontario to implement a Single-Use Items Reduction Strategy and Single-Use Items By-law.



City and Guelph Tool Library Collaboration

The City supported events led by the Guelph Tool Library that align with the Solid Waste Management Master Plan recommendation to support community sharing and repair initiatives. These events included RePurpose Fest, Repair Cafes, and Guelph's largest free clothing swap. Over 8,200 items of clothing and 2,500 kg of waste were diverted from landfills through these initiatives.



Curbside waste audits

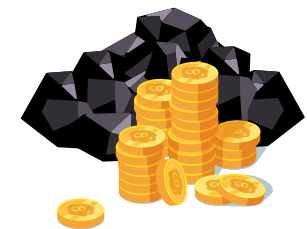
Conducted over 1,800 curbside waste audits to help Guelph residents improve their sorting and to identify common mis-sorted items that additional education and communications tactics could address. Proper sorting keeps the people who collect and sort your waste safe and minimizes interruptions at the City's sorting and processing facilities.



Waste Resource Innovation Centre

The Waste Resource Innovation Centre helped divert over 24,211 tonnes of waste away from landfill, which is made up of:

- Electronic waste: 129 tonnes
- Construction demolition waste: 1,379 tonnes
- Scrap metal: 412 tonnes
- Yard waste: 7,126 tonnes
- Organics: 9,790 tonnes
- Recycling: 5,354 tonnes
- Textiles: 17 tonnes
- Bike reuse program: 350 bikes
- Paint+ reuse program: 4,344 litres



Carbon Credit Sales

The City sold \$237,000 worth of carbon credits generated from the capture of CO₂e from landfill and organics processing and converted it into electricity. Funds will be used to help achieve the City's 100 per cent renewable energy by 2050 goal.



Household hazardous waste

We ensured safe disposal of 188 tonnes of hazardous waste, diverting it from landfill while also helping to protect our water supply and environment, preventing fires and keeping our staff and community safe.



Multi-residential waste collection

The City collects waste from multi-residential buildings with carts and front-end bins, helping ensure more Guelph residents are sorting and diverting their waste. We added 25 properties and 1,333 units to multi-residential collection.



Customer service and public education

Waste Resource Innovation Centre staff provided customer service assistance to an estimated 12,649 customers in person, over the phone and by email.

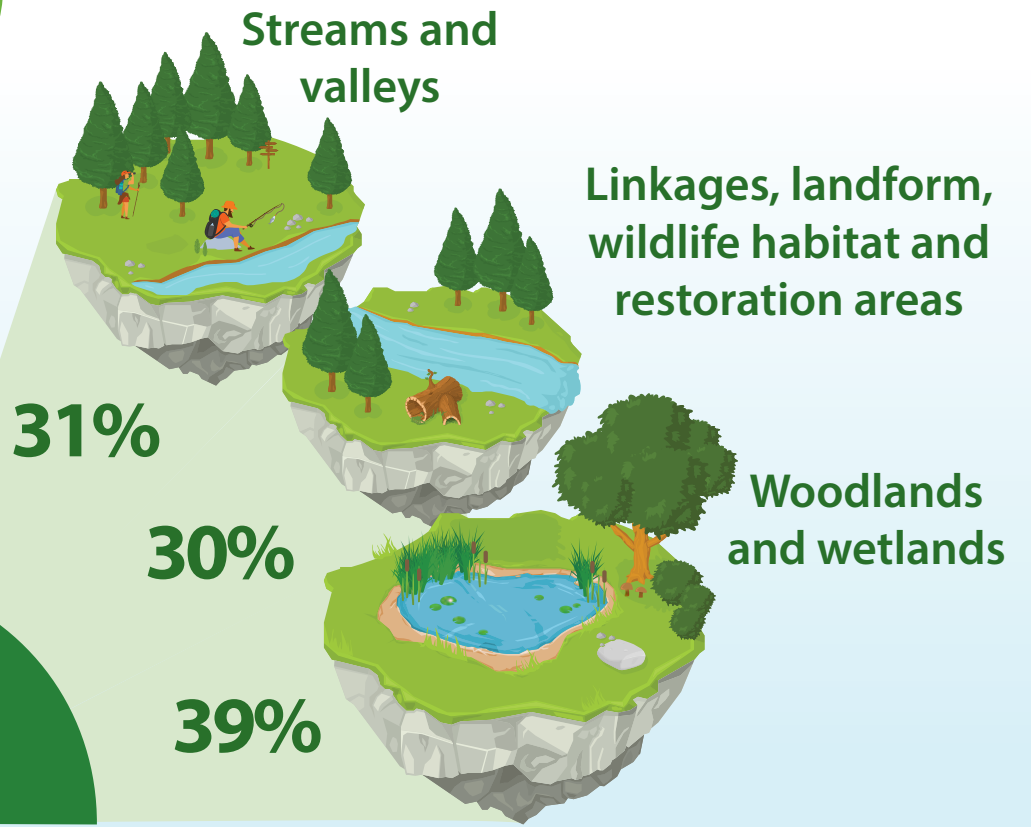
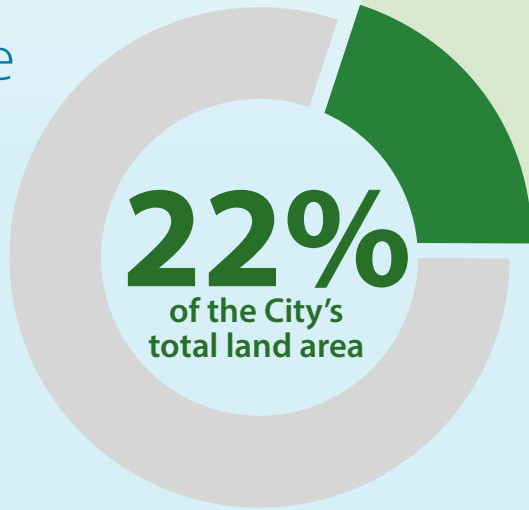
Urban Forest and Natural Heritage

The City maintains, protects and restores Guelph's natural heritage system and urban forest which helps us to:

- reduce pollutants in the water and air
- save energy by cooling our community
- support the health and wellbeing of Guelph residents
- provide recreational spaces and opportunities for outdoor activities
- allow for local plants and wildlife to move throughout their lifecycles safely and healthfully
- support a wide range of native plants and wildlife
- mitigate floods

Natural heritage system

Guelph's natural heritage makes up 1/5 of Guelph's land area

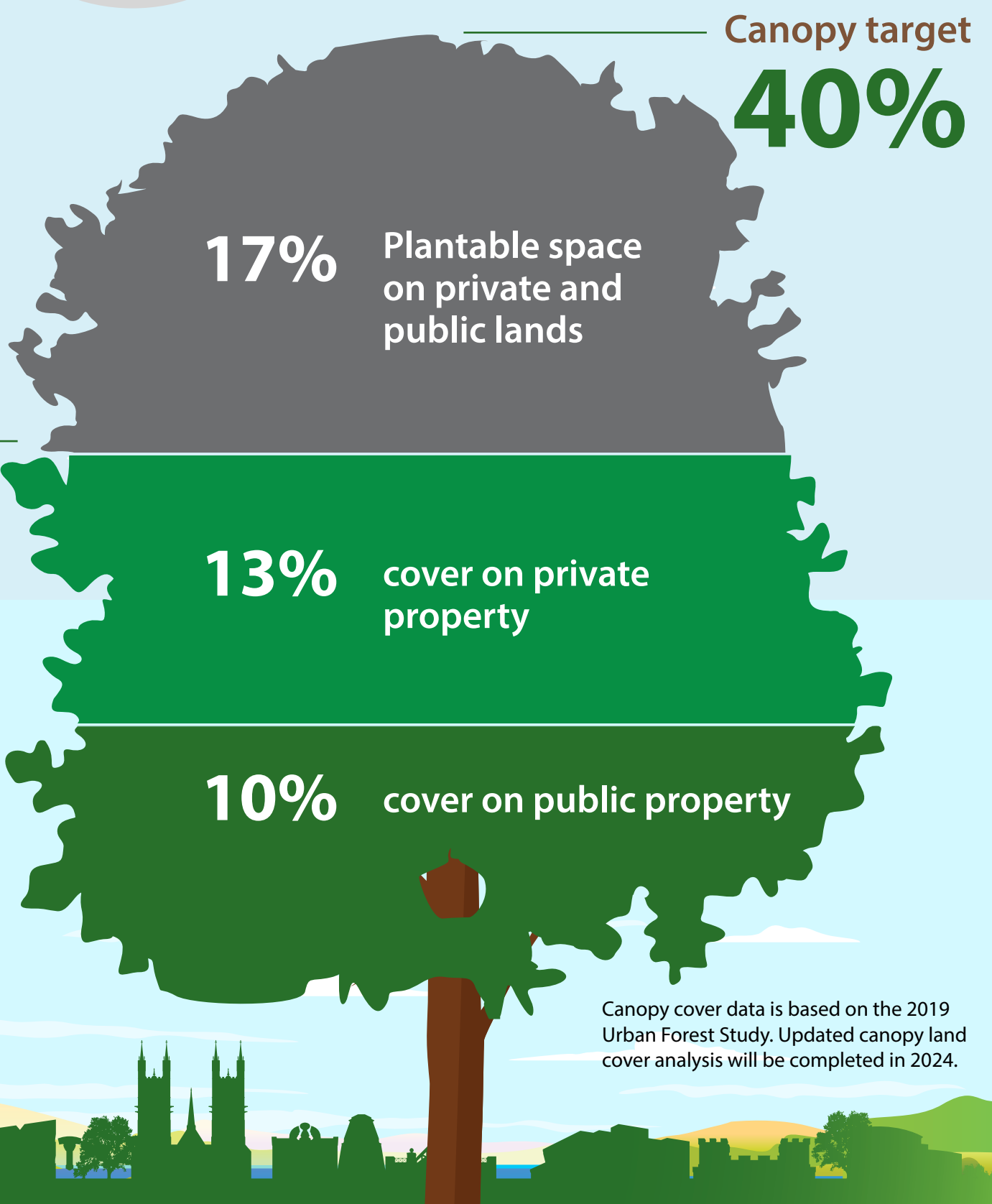


Urban forest

Guelph's urban forest provides valuable ecological, social and economical benefits to the community

Canopy cover is **23%** of the City's total land area

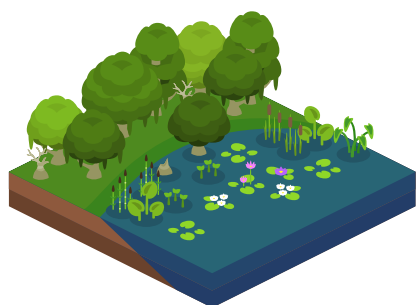
Most canopy cover is in woodlands, natural areas and mature neighbourhoods



Canopy cover data is based on the 2019 Urban Forest Study. Updated canopy land cover analysis will be completed in 2024.

What we've done

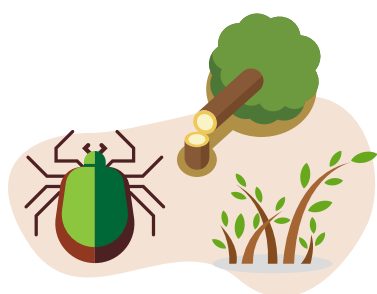
2022 key project highlights



Natural Assets

An inventory of natural assets across the city was completed. Ecological services that the assets provide were identified and condition and risk assessments for the assets were undertaken. To help understand their value, the cost of hypothetically replacing two stormwater services provided by the natural areas of the Hanlon Creek Watershed with engineered stormwater controls was determined. The information gathered about natural assets will be included in the City's next major Asset Management Plan in 2024.

- It would cost up to \$322,900 per hectare to replace the peak flow and infiltration functions that forests provide with engineered stormwater ponds and Low Impact Development measures.
- It would cost up to \$2,185,000 per hectare to replace the peak flow and infiltration functions that wetlands provide with engineered stormwater ponds and Low Impact Development measures.



Invasive species management

The City removes invasive species throughout the year to maintain and improve ecological health in our parks and natural areas

- treated 40 hectares of Common Buckthorn and Glossy Buckthorn
- treated 24 locations of Japanese Knotweed
- treated 12 locations of Dog-strangling Vine
- treated 2 locations of Giant Hogweed
- treated 3 locations of Common Reed (Phragmites)



Phragmites Control Demonstration Project

The City completed a Phragmites Control Demonstration Project in partnership with the Invasive Phragmites Control Centre. Four hotspot locations for Phragmites were controlled as part of this demonstration project.

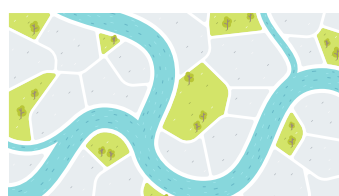


Tree planting and naturalization

As part of the City's efforts to grow our forest canopy and enhance biodiversity

- City crews and community volunteers naturalized 6.2 hectares of City-owned lands by planting native trees, shrubs, wildflowers and grasses
- 15,650 native trees and shrubs were planted by City crews and community volunteers at over 70 sites, including school, industrial and City-owned properties

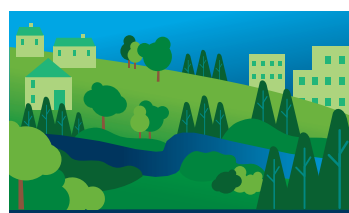
- 750 large caliper trees were planted to replace removed street and park tree canopy, using funding from the Investing in Canada Infrastructure Program grant received in 2021
- approximately 7,500 native wildflowers and grasses were planted by City crews and community volunteers at over 40 sites



Tree planting strategy

City staff developed the tree planting strategy which builds on the Plantable Spaces Analysis completed as part of the Urban Forest Study in 2019.

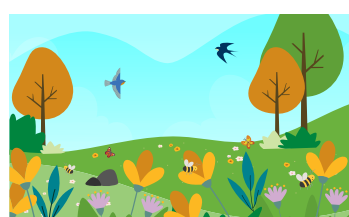
The purpose of this strategy is to evaluate and achieve our canopy cover targets.



Clythe Creek Subwatershed Study Update

The City initiated the Clythe Creek Subwatershed Study Update, previously completed in 1997, to characterize existing conditions, assess impacts and identify

implementation and management recommendations to protect water resources and the natural heritage system.

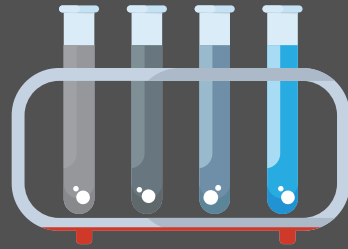


Meadow maintenance

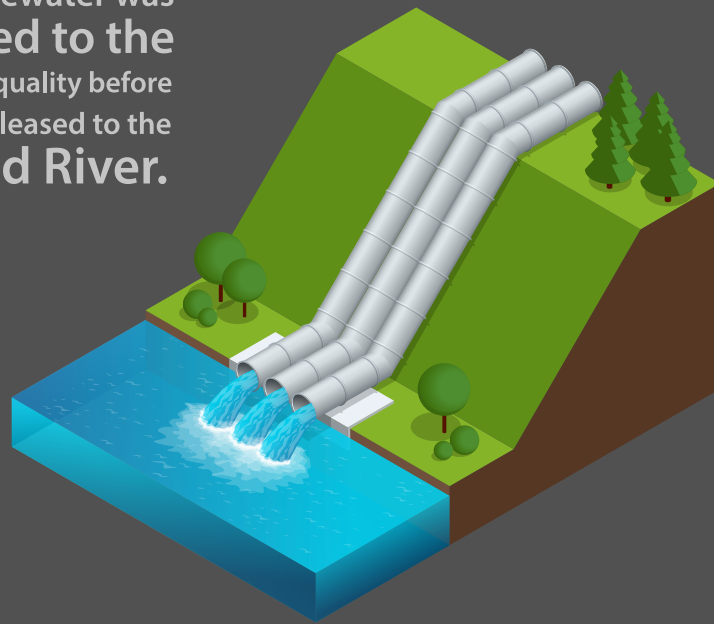
City staff mowed three locations to maintain meadow habitat for open country breeding bird species and pollinators.

Wastewater Services

Environmental stewardship drives all of the City's Wastewater Services programs. Whether it be reusing digester gas (methane) and biosolids (organic solids removed from sewage) recovered from the treatment process to power our water resource recovery center, or developing new educational programs to engage with our community, we're continually finding new ways to improve our processes to reduce our environmental footprint.



18.5 billion litres = 50.5 million litres per day!
of wastewater was treated to the highest quality before being released to the Speed River.



2,157,419 m³
of reused digester gas powered the wastewater treatment plant.
That's enough to power **1,618 houses**

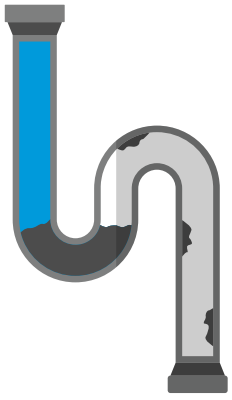
3,646 tonnes
of biosolids were reused by farmers as fertilizer.



100 per cent
of biosolids from the wastewater treatment plant were diverted from landfills.

What we've done

2022 key project highlights



Sanitary system preventative maintenance program

The sanitary system preventative maintenance program included flushing 151 km of the sanitary pipe and the inspection of 1887 maintenance holes to guard against sewer backups and keep our environment and wildlife safe.



Environmental protection

The Environmental Protection Officers conducted over 921 industrial inspections to ensure businesses are taking appropriate measures in reducing their environmental impact, like disposing of oils and grease properly. In addition, they responded to 423 calls to mitigate spills and to support Guelph Police Services, Guelph Fire Services and other City departments.



Education and outreach program

Wastewater Services officially launched the What Goes Down Comes Around campaign. The launch coincided with a facility open house at the newly named Water Resource Recovery Centre, attracting over 400 people from the Guelph community. Staff built on educational engagement by creating and delivering wastewater focused presentations and events to over 1,925 students and providing tours to over 300 local grade eights. Communication campaigns reached every pool owner in the city and saw messaging about what should and should not go down residential drains including a focus on fats, greases and oils.



Planning for our Future

In 2022, the wastewater treatment and biosolids management master plan developed a long term vision for Guelph's wastewater management program at the Water Resource Recovery Centre to accommodate the City's growth out to 2051.



Sample collection and analysis

It is with great pride that wastewater services incorporates a rigorous sampling program to support overall responsible environmental stewardship. Samples are collected and analyzed for process control, compliance reporting and river quality monitoring. The wastewater treatment operations team, environmental protection officers and accredited lab technicians collected and analyzed over 18,000 samples in 2022.



Responsible environmental steward projects

Environmental stewardship is important in our day to day endeavors. In 2022 significant efforts continued with the development and education of the Environmental Management System (EMS.) The EMS will form the backbone to support Guelph's wastewater environmental policy of providing long term commitments to reliable wastewater services and the enhancement of environmental stewardship.

Water Services

The City provides Guelph residents with safe, high quality drinking water while meeting or exceeding, and continually improving on legal, operational and quality management system requirements.

2022 Year in Review

During 2022 we treated and pumped 1.2 per cent more water than in 2021. Average annual consumption has decreased by one per cent despite a population growth of 16.5 percent from 2012–2021. In June, Council approved an update to the Water Supply Master Plan. This plan ensures the City's water supply meets the needs of current and future demands.

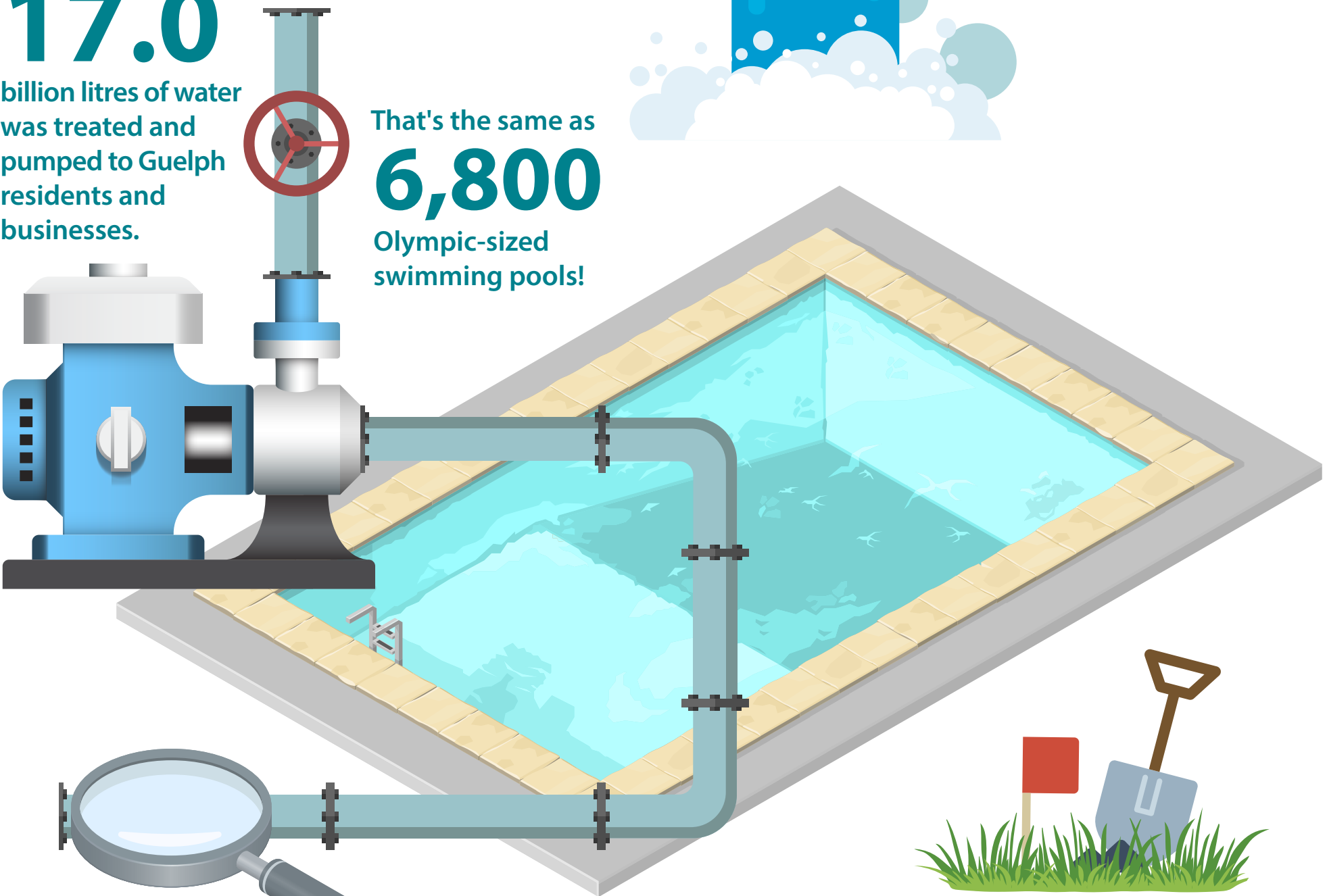
17.0

billion litres of water was treated and pumped to Guelph residents and businesses.

That's the same as

6,800

Olympic-sized swimming pools!



Inspected **558** kilometers of watermain for leakage and reclaimed **34m³** per day from found underground leaks.

100,400 litres of water is saved per day through water-efficiency programs including water loss management!



10,171 water utility locates completed to prevent damage to City water infrastructure and our natural environment.



The Guelph Water Wagon helped divert 45,940 water bottles from recycling and waste streams at local events.

What we've done

2022 key project highlights



Lead removal

Over 5,000 homes and businesses were sampled for lead. No samples exceeded the Ontario Drinking Water Quality Standard for lead, since commencing the Lead Reduction Program. Six Service Lines were totally or partially replaced to a non-lead material.



Water Efficiency Strategy Success

The following provides an update of some of the key deliverables of the 2016 Water Efficiency Strategy. To find a copy of the annual report, please visit <https://guelph.ca/plans-and-strategies/performance-reporting/>

Annual reports

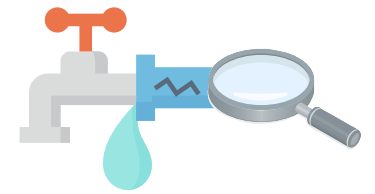
The City of Guelph is committed to annual performance reporting to City Council and the community.



Healthy Landscapes

This program helps Guelph residents learn more about outdoor water efficiency, preventative landscape maintenance practices and natural pest control alternatives.

- 399 Healthy Landscape property visits completed, with 82 supporting residents towards Blue Built Home certification.
- 2,108 participants across five gardening workshops. Topics included water efficient landscape design, plant selection, and proactive maintenance best practices to manage the impact of drought and pests.
- 960 participants in the landscape design course, learning how to plan a low input, high impact sustainable yard.



Leak detection

The City tested all 558 kilometres of watermains within the City's distribution system for leaks. 14 leaks were identified and repaired preventing the loss of approximately 34,000 litres of drinking water per day (enough to fill five Olympic sized pools annually).



Outside Water Use Program

This program continues to be an active and effective program to reduce peak season (summer) water use.

The outside water use program monitors local conditions and reminds residents that Guelph uses water wisely. The program ran from April to October.

Due to the average spring the program level escalated from Level 0-Blue to Level 1-Yellow on June 22. Ongoing summer above average temperatures caused the program level to change to Level 2-Red on July 13. The change from Level 2- Red back to Level 1-Yellow was on August 31 due to an increase in precipitation. The program finished out the season in Level 1- Yellow due to precipitation not increasing.



Water efficiency programs

Since working to achieve the 2016 Water Efficiency Strategy programs, 1,470 m³ /day of water has been saved.

In 2022, 100.4 m³/day of treated water saved through efficiency programs, which prevented 18.60 tonnes of green house gas emissions and \$9,000 in electric costs to be avoided.

These rebates, incentives, and programs include:

- 561 rebate applications and audits completed through the City's residential rebate programs.
- 15 m³/day of water savings through multi-residential water audits
- 2 incentives and rebates for municipal infrastructure improvements and Water Smart Business upgrades.
- 34 m³/day of water saved from leak detection. This number decreased compared to 2021, reflecting a successful proactive water loss management program, and the need for fewer excavations to manage significant water leaks.



Youth and public outreach and education programs

- 37 interactive school presentations engaging 790 students.
- 55 student submissions in the Imagine-A-Day-Without Water poster contest
- Tours of City facilities resumed in November 2022, with 12 tours of Water Services offered for 300 students.
- 1,567 students engaged through the H2Awesome grade 8 education program
- 414 students engaged at the Waterloo-Wellington Children's Groundwater Festival



Raingarden Rebate program

The City's raingarden rebate for Guelph residents encourages water conservation and reduced stormwater runoff.

- 152 residents participated in workshops
- 55 home-visit consultations were conducted
- 21 rain gardens were installed and provided a rebate resulting in over 36,000 litres of stormwater captured per rain event (an average of 1,716 litres per garden).