

2024



University Health Network Sustainability Report

by Energy & Sustainability, FM-PRO

2024 Sustainability Highlights

- UHN embedded formal **sustainability leadership** at the **Board level**, and within UHN's **Strategic Plan**
 - UHN was recognized as one of **Canada's Greenest Employers** for the fourth straight year
 - The **Wastewater Energy Transfer (WET) System**, the world's largest, began operating at Toronto Western. Soon to reduce UHN's emissions by 60% and enable public health wastewater research
 - **Energy management** projects resulted in **\$5.3M** saved in utility costs in 2024, cumulative savings of **\$51M** since 2012, avoiding **67,268 tonnes** of climate pollution, like removing **20,608** cars
- The **Anesthesia** team switched to more climate-friendly anesthetic gases, reducing climate pollution by 54% and changed to 7-day reusable breathing circuits instead of single-use.
 - The Medical Device Reprocessing Department (MDRD) continued transitioning from disposable wrap to **reusable** metal containers for **sterilization**.
 - **Facilities** (FM-PRO) and the Energy & Sustainability team fixed the **HVAC**, **temperature** scheduling, and **LED** lighting to run buildings more efficiently and comfortably.
 - **Clinical** teams, through **Supplies Stewardship**, reduce the amount of unnecessary supplies brought to patient rooms then wasted, improving the environment, finances, and protecting supply chains.
- **Procurement** is strengthening the sustainability **RFP criteria** for the goods and services UHN buys.
 - **Environmental Services'** robust recycling & compost programs **divert 41%** from landfill.
 - Five **research labs** are becoming **Green-Certified**, and many more labs excel at the energy-saving Shut-the-Sash program, with compliance rates frequently near 100%.
 - The Nutrition team's UHN **MyPlate initiative** includes increased patient choice, leading to increased satisfaction and **reduced food waste** from patient trays.
 - The Operating Room **Green Team** collects cautery cords for special recycling and used the proceeds to purchase reusable surgical caps instead of single use.
- The Sprott Centre enacted the **Bring Your Own Reusable Bag** (BYORB) initiative for patients that have elective surgeries, reducing plastic bag use by **83.5%**.
 - **West Park** instituted **recycling** throughout **patient rooms** which lead to less waste in landfill.
 - The **Michener Gitigan**, UHN's first Indigenous Healing Garden, and **Bickle GROW**, a wheelchair-accessible edible garden, completed their fourth and ninth seasons in the sun, respectively.
 - **The Linen team enables 99%** of isolation gowns to be reusable, not disposable
 - Many TeamUHN practice a **clean air commute**, enabled by **399** secure **bike spots**, **56 EV Charging Stations**, carpool matching, resulting in a **Smart Commute Platinum** Workplace designation.



Supporting UHN's 'bold resolve for A Healthier World' through patient and planet-centred Care, Research & education

UHN, with a strategic plan to achieve a 'bold resolve for a healthier world', consistently nurtures a robust culture of sustainability for over 25 years. The success of these sustainability measures relies heavily on extensive collaboration and support across all levels of the organization. The bold resolve is a call to action to uphold the principles of planetary health.

UHN Strategic Plan PiLar: Commitment to Inclusive and Sustainable Health Impact

UHN' Strategic plan includes a key pillar for sustainability "Embedding diversity, equity and inclusion across UHN, creating a respectful and valued environment for all. To do so, we lead in environmental and social impact, integrating ESG leadership and acknowledging critical connections between social and environmental issues and evidence for a healthier, more resilient future."

The UHN Board of Directors has embraced the sustainable framework of ESG, and has established a subcommittee to focus and report on each element: Environmental, Social, and Governance.

More on UHN's [full strategic plan](#)



UHN Values: stewardship

UHN Values include Safety, Compassion, Teamwork, Integrity, and of course, Stewardship: to optimize our resources for the greater common good.

TeamUHN is encouraged to use resources wisely by:

- Carefully managing the use of health care, research, teaching and operational resources
- Developing and employing our health human resources for optimal quality and safety
- Holding myself and others accountable for achieving performance expectations
- Working efficiently and effectively to eliminate waste (time, supplies, natural resources, etc.)

Energy

Behaviour change, engagement & collaboration across UHN remain constant pillars of UHN's Energy Management Program

Energy consumed in 2024:

1.38 Million GJ

4% decrease from 2019

Total \$ spent in 2024: energy + water

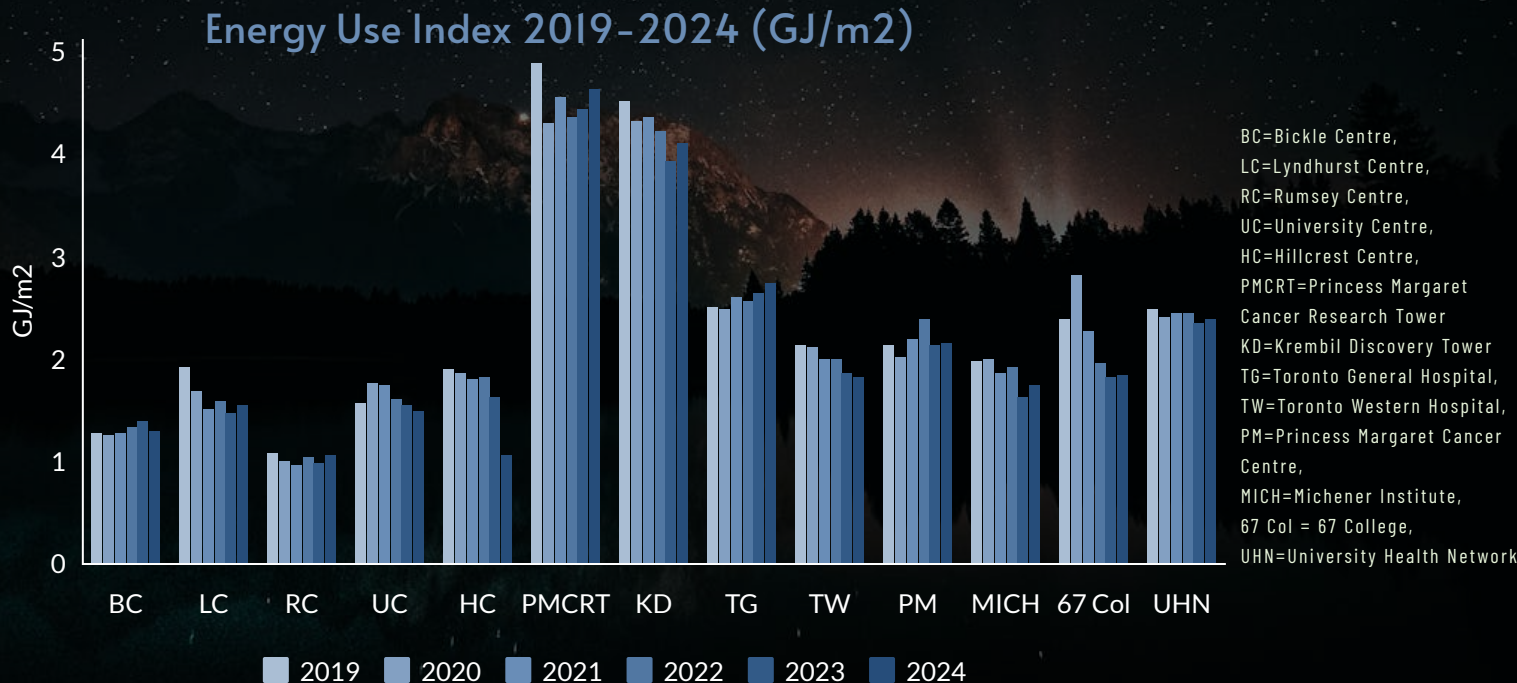
\$36 Million 1.3% decrease from 2023
13% less than pre-energy-management baseline!

Total \$ saved in 2024 by energy management:

\$5.3 Million

Cumulative \$ saved since 2012 by energy management:

\$51.1 Million



Energy Highlights

Just some of the energy projects that make UHN more efficient & resilient



Digging deep into the TWH WET System

By capturing heat from sewers instead of running a gas boiler plant, the TWH Waste Water Energy Transfer (WET) system will reduce UHN GHG emissions by **60%** and provide an outlet for health research. It will supply up to 90% of TW/KD's heating and cooling needs. The WET system, now built and in the commissioning phase, is the **largest** of its kind in the world.



Cost saving/yr:
\$685,000



Water saving/yr:
44.7 million litres



Pollution savings/yr:
like removing 1,811 cars



Rehabilitating TGH Chilled Water System

Toronto General's hot kitchen and 4RFE were being cooled by city water instead of the more energy and water-efficient chilled water system. By restoring the cooling pipe and upgrading controllers, the chilled water systems were fixed and no longer relied upon a constant fresh supply of city water for cooling. Excellent collaboration with the Facilities team.



Cost saving/yr:
\$383,918



Water saving/yr:
87.5 million litres



Steam Trap Repair & Replace

All UHN sites steam lines got a major boost in efficiency with the repair and replacement of steam traps. As steam is generated from fossil fuels, this increase in efficiency is a major pollution saver as well, equivalent to removing 84 gas-burning cars from the road.



Cost saving/yr:
\$9,147



Pollution savings/yr:
like removing 84 cars

“Fewer people will need to be admitted to hospitals, including University Health Network, because of projects like these. Climate change is likely the number one threat to the well-being of society and the planet”
- Dr. Kevin Smith, PhD, CEO, UHN

... and so much more ...

- **Deep Lake Cooling** at TG, PM and TR uses renewable cooling from deep Lake Ontario in place of electric chiller plant. **TG/PM combined savings:**
 - 12,750,000kWh electricity
 - 90,000m3 water
 - \$1.4M
 - like taking **947** cars off the road
- Energy behaviour change in research: Shut-the-Sash and Shut the Door at **+99%!** New: Certified Sustainable labs and the Freezer Challenge.



What's next?

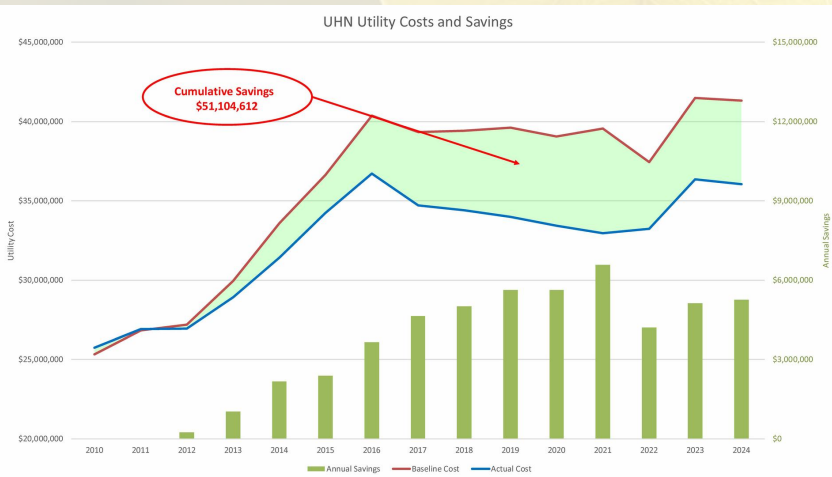
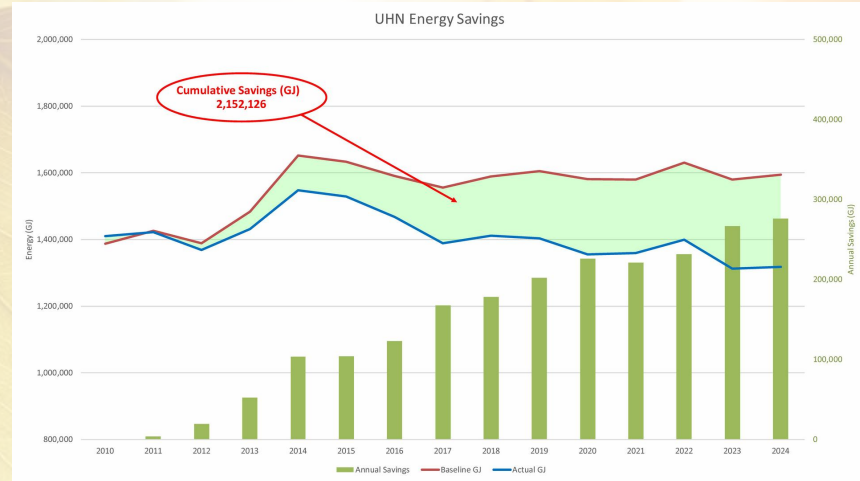
- Investigating expanding Deep Lake Water Cooling
- Solar & battery storage, and a virtual power plant
- Replacing steam derived from fossil fuels with a district heat pump plant, reduce GHG by up to 80%!

Energy Management

UHN has saved \$51 million through its robust and integrated energy management program



Over **600** energy projects completed from 2012-24, including retrofitting with more efficient equipment, construction, and optimizing building operations, UHN has avoided spending **\$51 million** in utilities and saved **2.2 million GJ** in energy consumption.

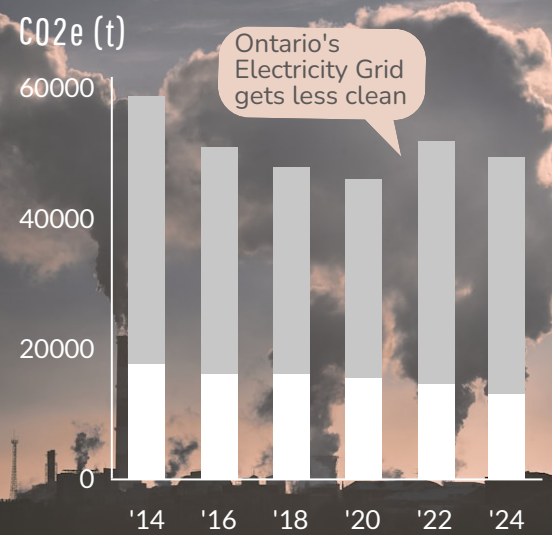


Due to extensive energy efficiency work, energy costs lowered despite global conflicts affecting supply chain, rate escalation, weather, building expansions, space use changes, and equipment wear & tear.

UHN's costs went down by 1.3% in 2024 (the **blue lines** in the graphs to the left and above). Our consumption was quite a bit lower than what UHN would have used and spent without its energy management program (**red line**). In 2024, UHN saved \$5.3 million through energy management planning and projects.

Climate Pollution: Greenhouse Gas Emissions

Direct & Indirect Emissions



Ontario's Electricity Grid gets less clean

■ Direct (Scope 1) ■ Indirect (Scope 2)

Direct Greenhouse gas emissions from on site combustion of natural gas and oil

Indirect Greenhouse gas emissions from offsite energy generation, including electricity, steam and district cooling*

CO₂e Carbon Dioxide Equivalency: standard measure for greenhouse gas emissions, rolling many gases** into one number:
**carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride

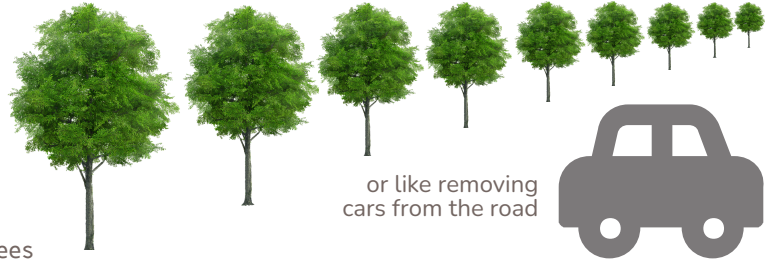
Emissions associated with electricity production in Ontario have risen by a factor of 1.6 since 2020, leading to growth in UHN's indirect emissions despite overall energy use reductions over the same time period. UHN's direct emissions have improved steadily.

Burning fossil fuels creates the majority of emissions that cause climate change. By enacting energy efficiency and transitioning to renewable energy, UHN has lowered its greenhouse gas emissions by 67,268 t since 2010, like removing 20,608 cars or planting 1,112,282 trees! In 2024 alone, we avoided 11,519 tonnes of greenhouse gas emissions (like removing 3,529 cars). UHN recognizes the public health threats posed by climate change and aims to be a leader in GHG emissions reductions..

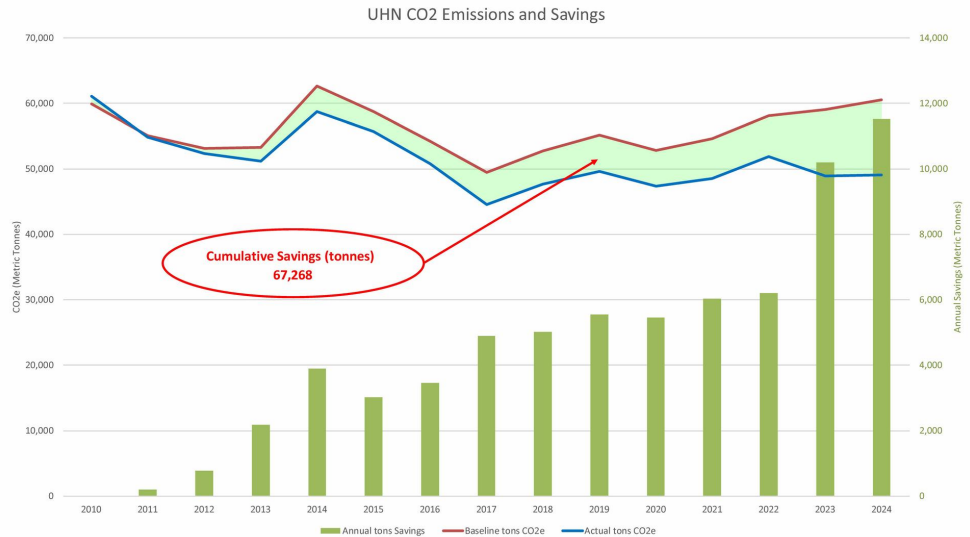
Emissions reduction?

Like planting
a million
TREES

actually 1,112,282 trees



Direct (Scope 1) and Indirect (Scope 2) Emissions & Savings (MT CO₂e)



Water

In deluges and drips, UHN has reduced water consumption by 47% since 2012!

522.95 m3 total water used in 2024

8.2% Reduction in water use from last year

47% Reduction in water use from 2012! (baseline)



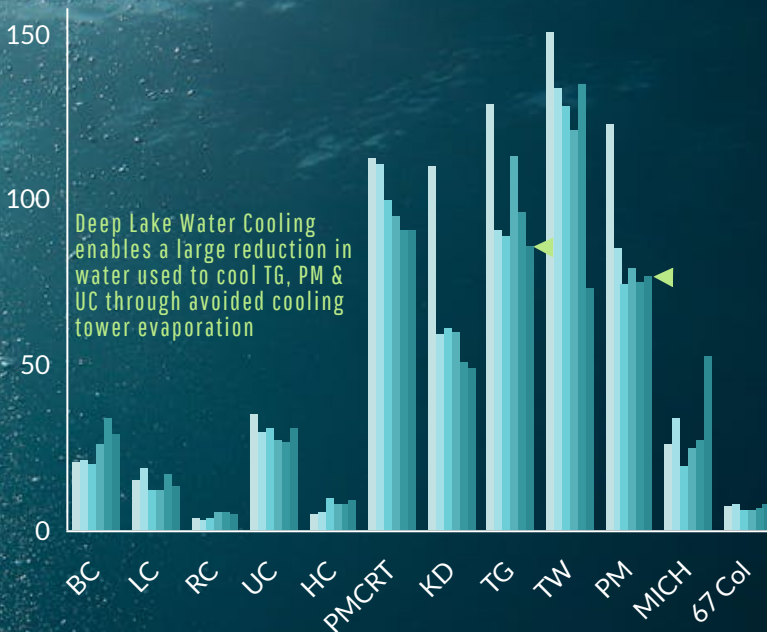
Like saving 183 Olympic-sized swimming pools of water from 2012 rate of use

Water saving highlights include:

- Deep Lake Water Cooling
- removing refrigeration units from municipal water cooling
- optimizing water use in buildings
- fixing condensate so it does not need to go down the drain
- converting to low flow toilets
- more efficient sterilization

Water Use (in thousands of m3)

2019 2020 2021 2022 2023 2024



Water Use Index (m3 water / m2 floor space)

2019 2020 2021 2022 2023 2024



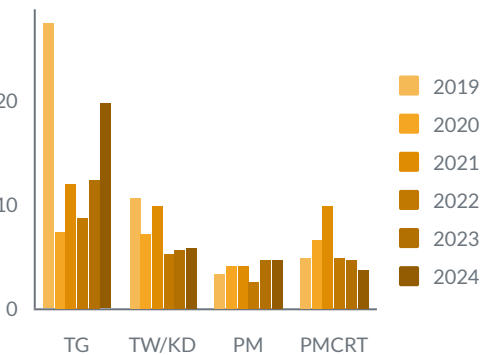
Hazardous Waste

Proper disposal of hazardous waste is key to protecting people, waterways, land & air

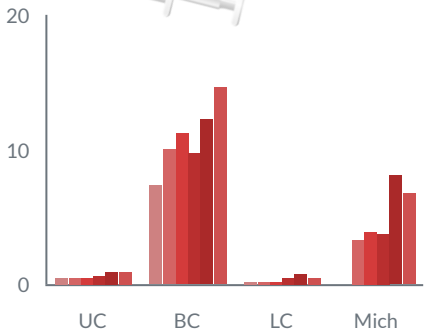
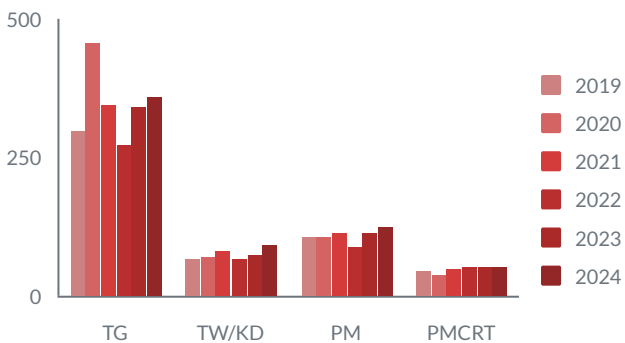
Hazardous waste is the most expensive, energy intensive and air-polluting stream of waste, so it is essential to generate it sparingly. The resurgence in clinical activity following the COVID19 Pandemic, coupled with education on the importance of stewardship, has resulted in a steady amount biomedical and pharmaceutical waste, despite increased activity! Chemical waste generation remains steady, and below pre-pandemic levels.

Education on stewardship of biomedical waste is provided for all new clinical staff, but may need reminders for long-time staff.
Recommendation: Expand Hazardous waste stewardship to an annual elearning module for all affected staff.

Chemical Waste (t)



Biomedical Waste (t)

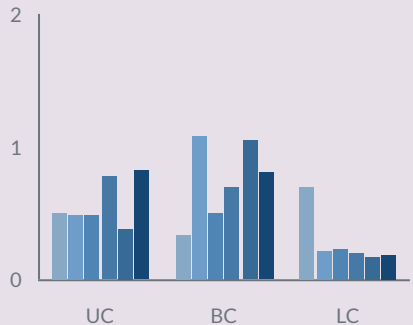
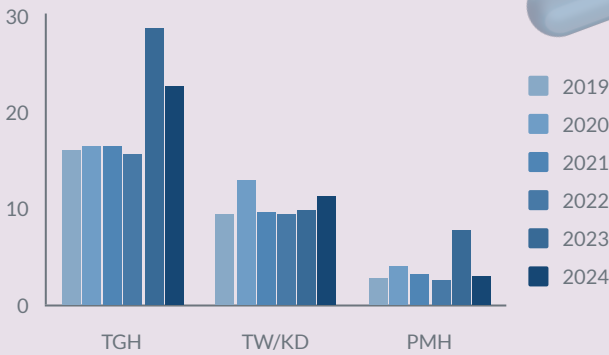


82 tonnes (t)

Plastic waste eliminated by using reusable sharps bins instead of disposable ones



Pharmaceutical Waste (t)



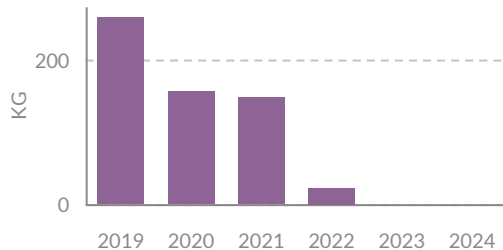
Spotlight: Anesthesia

Leadership in Anesthesia minimizes climate impact and reduces waste

Eliminating Desflurane!

Anesthetic gases have a high global warming potential (GWP). Emitting one molecule of desflurane to the environment is equivalent to emitting over 3,500 molecules of carbon dioxide. Desflurane's GWP is also approximately 26 times sevoflurane, another commonly used anesthetic. In collaboration with Anesthesia leadership, desflurane use was phased out at UHN, with sevoflurane now the primary anesthetic.

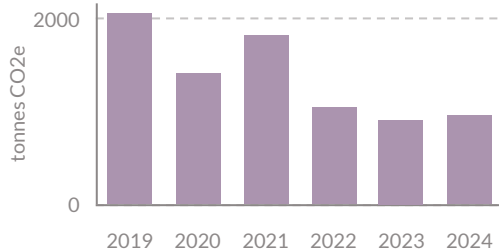
Desflurane at UHN 2018-'24



Lower the Flow!

Anesthesia set the default flows from 2 L to 0.5L so climate pollution is less than half, despite an increase in the number of surgeries.

Anesthetic Gas Climate Impact

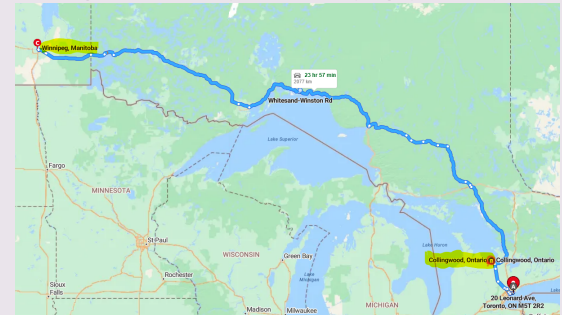


The climate savings from removing Desflurane and lowering the flow: a **54%** drop from 2019!

Like taking **338** cars off the road!

Climate impact by gas type

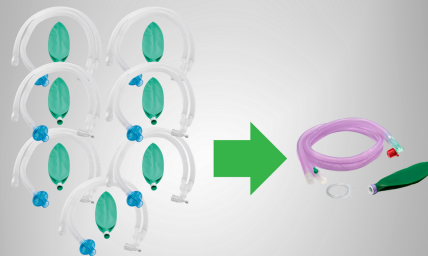
Putting one patient under anesthesia using Sevoflurane is like driving a gas car to the cottage (A to B). Using Desflurane is like driving all the way to Winnipeg (A to C)!



Climate impact by gas type

7-Day Reusable Breathing Circuits

The change to 7-day reusable breathing circuits saves resources and time, reduces waste, and saves over \$100,000 every year.



7 Disposable Breathing Circuits VS
1 Reusable Circuit (Up to 7-days)



Non-Hazardous Waste

Practicing the 5-Rs:

Refuse, Reduce, Reuse, Recycle, Rot (compost)



Operation Green program has run for 10+ years, saving surplus medical supplies from landfill, sending them to communities in need around the globe, e.g. Ukraine, Haiti, Syria, Somalia & more.

1,792 kg surplus med supplies donated in 2024



Centralized Multi-stream collection

Dr. Lucas Chartier, VP Quality & Safety, hands his under-desk bin to Kleo Kollia, Environment Services staff, Over 3,000 small bins were donated in 2023/24.

Non-hazardous waste disposal volumes increased slightly as more staff returned to work onsite. This is a transition time as many small and under desk bins were removed, replaced with a centralized multi-stream bin collection that enables better sorting and adds compost. Tremendous work by Environmental Services, building to better future results.

Diversion rate from landfill through recycling & composting

41 %

Steady from 2023 rates, and a 20% improvement over 2019!

Cost savings from recycling in 2024 **\$188,209**

Recycling materials costs less than disposing in landfill. Some, like scrap metal & batteries, generate rebates. Recycling is a financial & environmental win.

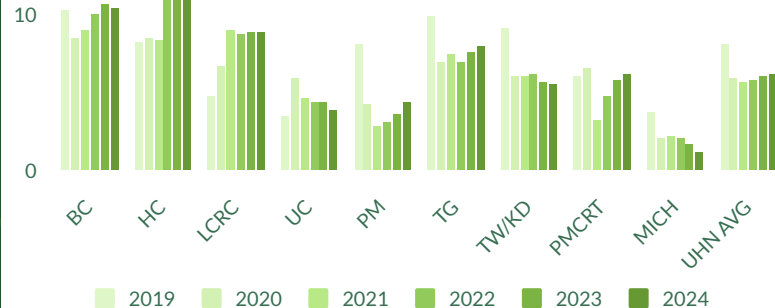
Diversion Rate %

How much non-hazardous waste was diverted to recycling or composting instead of landfill. **Higher numbers are better**



Landfill Index kg/m2

How much non-hazardous waste was thrown in garbage, divided by size of building. Does not include recycling, compost. **Lower numbers are better.**



WASTE REDUCTION HIGHLIGHTS

Just some of the ways
TeamUHN saves resources



99% of Isolation Gowns are Reusable

UHN has achieved over 99% reusable isolation gowns, instead of single-use plastic disposable gowns. These are more sustainable, more comfortable and actually less expensive ... 40% less than disposables. 1 reusable gown can displace over 60 disposable gowns. They also protect the supply chain. The support services team works magic to collect and return soiled gowns to Ecotex, as much as three times a day during the height of COVID when demand tripled.

“For UHN, reusable isolation gowns ensure staff and patient safety, save money, and are better for the environment. It hits our sustainability sweet spot”

- **Joanne Bridle**, Executive Director,
FM-PRO Operations



BYORB: Bring Your Own Reusable Bag

The Sprott Surgery Quality team aimed to stop waste before it starts by having patients bring in their own reusable bags for planned surgeries, instead of getting several disposable plastic bags from UHN.

- Messages to patients to bring their own belongings bags
- Stops **4,000** plastic patient belongings bags/month!
- If patients forget, they can have a bag

The BYORB stats were **83.5%** compliance at a recent measure (June 27 - July 11, 2025), far exceeding the first year's achievement of 63%!

and so much more in 2024...

- 1,145 kg Ice Packs collected and returned to vendors for reuse
- 919 kg medical single-use devices collected by Stryker refurbish/resale
- 20 tonnes of e-Waste recycled
- 57 tonnes of scrap metal recycled
- 160 tonnes of wooden pallets recycled
- 7 tonnes of batteries recycled
- +3,000 small waste bins donated
- Patient room Supplies Stewardship counts unused items to aid prevention
- MDRD: Reusable Sterilization Boxes at 95% versus single-use blue wrap
- A switch to UV light for probes reduces the need for toxic disinfectants

What's next?

- Glove Stewardship policy and campaign designate when gloves are not needed



Cautery Cords > Scrub Caps: OR Green Team

The OR Green Team collects cautery cords after surgeries for special metal recycling, with Dr. Laura Donahoe often delivering the cords herself. This generates rebates from copper in the cords. After collecting **1,146 kg**, they used the funds to purchase reusable scrub caps so OR staff can avoid disposable caps. Celebrate this sustainably circular win!

 [Read the article](#)

 [Watch the video](#)

The Green Team

Telling Our Stories

UHN GREEN PLEDGE



BY THE SHOW OF HANDS...

I WILL USE THIS GREEN KNOWLEDGE AT WORK!

DATE January 12, 2024 - in service
DEPT. TWH - OR team

UHN GREEN PLEDGE



UHN GREEN PLEDGE

WOUTERS LAB



I WILL USE THIS GREEN KNOWLEDGE!

DATE 2024-12-04
EVENT TG Facilities Evening Shift



I WILL USE THIS GREEN KNOWLEDGE AT WORK!

PHICET August Shout the South Side
DATE 2024-09-18

Blog & Share Point



31,400
page views in 2024

Training

44,389 staff trained live 2000 - 2024

1,847 staff trained live 2024

741 staff trained virtually 2024

Communication, training & staff engagement are key to the organizational reach of all of UHN's sustainability programs.

Live training tripled from 2022 to 2023, and continued to climb in 2024 with an increase in the number of annual refresher training sessions for key departments, plus a monthly session for all new clinical employees which doubled in duration and scope. The recommendation to achieve pre-pandemic rates would entail reinstating sustainability at New Employee Orientation. By incorporating a "green pledge" (pictured left), staff are more likely to take messaging to heart.



Social media sites pivoted in 2024 from centring on our Talkin' Trash with UHN Blog to an UHN-wide Sustainability Sharepoint site with a wealth of information. Here, we tell UHN's greening stories so they may be amplified and repeated. Outreach is modeled on community-based social marketing methodology.

*Buy, Build, Move, Grow & Eat

*Broadening sustainability

... and so much more ...

- UHN multidisciplinary working group to address Single-Use Plastic reduction, ensuring sustainable replacements and system changes in procurement, nutrition, clinical, retail and environmental services
- Food gardens for patient therapy and staff engagement:
 - The Bickle GROW garden (Garden Rehab on Wheels) and Lyndhurst Patient Garden (both wheelchair-accessible)
 - University Centre rooftop garden.
 - UHN supports the Bonnie Storr Community Garden, building a haven for people and families near Bickle Centre
- Carpool matching program for UHNers via Smart Commute lowers costs, reduces emissions and eases traffic congestion.
- Energy efficiency and sustainability built into the UHN Design & Construction Guidelines
- Joint initiative with vendors on sustainable temperature sensitive packaging in Research
- Nutrition team's **MyPlate initiative** pilot adds patient choice, leading to increased

Indigenous Healing Garden

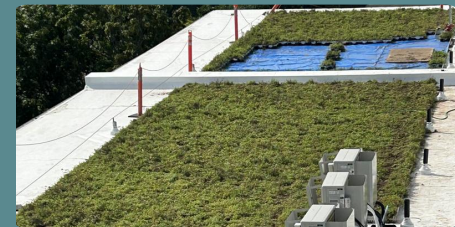
Since 2021, the Michener Gitigan (Anishinaabemowin word for garden) continues to grow with a multitude of healing plants, like the traditional obacco, sage, cedar and sweetgrass, and a custom mural. Led by the Indigenous Health Program, partnered with Michener Facilities, this site hosted many key educational and spiritual events. Green Team volunteers helped plant and tend the garden. The plants are used for additional medicine to support patient care.

Bike Parking + EV Charging = Clean Commute

UHN enables staff to be climate champions on their way to work, especially through cycling and Electric Vehicle (EV) infrastructure. UHN has **54 EV charging stations** with no additional fee. UHN has **399 secure bike parking** spots, notably the Bike Vault with 126 spots accessible from 4 UHN sites free for staff. **500 open racks** serve staff & visitors alike. Our Bicycle User Group has **562** members. We celebrated **Bike Month** with two live, well-attended Bike Maintenance Workshops, and provide a **25%** staff discount for Bike Share Toronto.

Dunn House: Patient Housing & Green Roof

UHN's innovative Social Medicine Housing Initiative is home to approximately 51 UHN patients for whom housing was a chronic health issue. This connects people with essential support. This project amplifies social and environmental targets. Modular construction reduces carbon emissions and generates minimal waste. The green roof (pictured right) helps improve stormwater drainage, reduces the heat island effect, and improves insulation to reduce both heating and cooling needs.



Green Team at UHN

All 718 Green Team champions across UHN pledge to green their workplace through their day-to-day actions, driving sustainable behaviours organization-wide.

718

41 New Green Teamers joined in **2024!**

Green Team success stories have their own page, inspiring and mentoring members, new and old.

This Green Team video collaboration with Public Affairs aims at **supplies stewardship**. If staff bring too many supplies into a patient room, these often go to landfill when the patient leaves. Worse than single-use is no use at all. This teaches to look first, then only bring what is needed. The video inspired a pilot quantification project to count supplies after each discharge, and coach on waste reduction strategies on 7 units.



Earth Month bloomed with live & virtual events, and a special focus on mental health & climate change. Almost 500 staff joined, from Nature Stewarding (pulling invasive plants so native plants thrive), quizzes, climate workshops and more!



APRIL IS
EARTH MONTH

Explore events here.



For inquiries, contact green@uhn.ca



Waste Reduction Week

INTER-HOSPITAL CHALLENGE

OCTOBER 21-27

2024

Get your 'green' game on for a chance to win awesome prizes! Test your SR's (Refuse, Reduces, Reuse, Recycle, & Rot) and lead your site to Waste Reduction Week victory.

QUESTIONS? CONTACT GREEN@UHN.CA



UHN created and led the 9th annual Inter-Hospital Waste Reduction Week Challenge with 2k participants at 11 organizations! A perfect lead in for Staff BBQ's that now standardized the Waste Wizard role.

Energy & Environment Video



**Creating A Healthier World
Through A Sustainable Environment**



[click here to view](#)



 **SCAN ME**

At UHN, we know climate change is a major threat to human health. Since its inception in 1999, the Energy & Sustainability team has guided UHN to embed environmental stewardship in its planning, operations and culture, providing a triple benefit to the environment, finance and health that far outweighs the efforts. Energy & Environment supports UHN's vision of "A Healthier World," through a sustainable environment. This one minute video is a snapshot of how TeamUHN powers patient and planet-centred care, research and education.

Providing Patient & Planet-Centred Care

For more sustainability at UHN, contact the Energy & Sustainability Team...



green@uhn.ca



www.uhn.ca/corporate/AboutUHN/Greening_UHN



<https://universityhealthnetwork.sharepoint.com/sites/Sustainability>