



climate  
**action**   
pour le climat





## Climate Action

## Annual Report 2023

# Greater Sudbury's Progress in Becoming a Net-Zero and Climate-Resilient Community by 2050

This annual report demonstrates that the City of Greater Sudbury continues to show commitment and investment in its climate action through new projects, policies and programs. Greater Sudbury's Community Energy and Emissions Plan (CEEP) and Community Climate Change Adaptation Plan (CCCAP) help guide the community in becoming net-zero emissions and climate change resilient by 2050.

Municipalities face many challenges in reaching their net-zero goals including the cost of retrofitting existing buildings and electrification of vehicles and equipment. The City of Greater Sudbury recognizes these challenges and continues to find efficiencies and upgrades where feasible.

## Message From the Mayor

On behalf of the City of Greater Sudbury, I am pleased to present the 2023 Climate Action Annual Report. Greater Sudbury is committed to making strides toward a more climate-resilient and sustainable city for all our residents. The ambitious goals and action plans outlined in the Community Energy and Emissions Plan (CEEP) and the Community Climate Change Adaptation Plan (CCCAP) continue to guide innovative projects to completion.

This report underscores the ongoing efforts and achievements corporation wide to protect our natural environment for generations to come. As keepers of

the land, we are reminded of our duty to minimize our greenhouse gas (GHG) impacts on the environment in all aspects of the work we do by finding sustainable alternatives and clean energy sources.

The CEEP and CCCAP also call on the community to reach our goals. The report highlights community efforts taken so far and actions still needing prioritizing to push toward our long-term goals.

Together, we have the capacity to truly make a difference by implementing a climate change perspective in all the work we do.

**1,000 m**

of new sidewalks  
constructed  
to increase active  
transportation  
options



**1.3 km**

of new cycling  
infrastructure  
constructed

**113,075**

tree seedlings planted,  
which could sequester  
over 2800 tCO<sub>2</sub> per year  
over their lifetimes



**42 lakes**

sampled for spring  
phosphorus, sodium  
and chloride as part  
of the Lake Water  
Quality Program

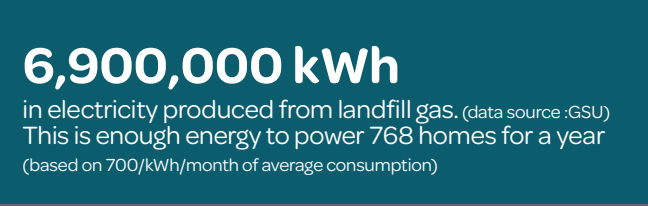
**\$2,000 +**

in fuel saved in one year by using an electric vehicle

– Bylaw and Corporate Security Services

**6,900,000 kWh**

in electricity produced from landfill gas. (data source :GSU)  
This is enough energy to power 768 homes for a year  
(based on 700/kWh/month of average consumption)



**31.7%**

decrease in weather-related bypass events at wastewater treatment plants from previous year.

**5,122,065 kg**

of residential green cart organics collected

**12,927,689 kg**

of organic matter diverted



## Paper reduction

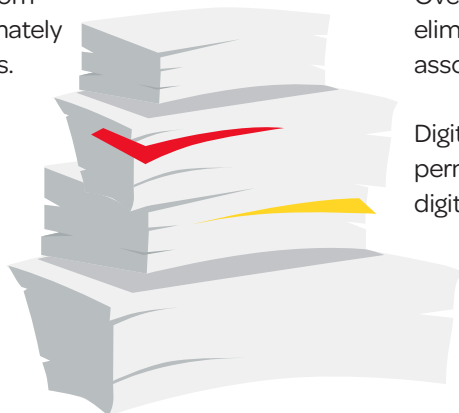
All building permit applications switched from paper forms to digital, eliminating approximately 2400 multi-page permits plus attachments.

Public Works switched paper logs and inspections with on-site digital entry, saving over 6000 sheets of paper per year.

The Property Tax Bill online project provided citizens the option of subscribing to online tax bills through the 311 portal.

Over 4,600 citizens have subscribed so far, eliminating 9800 paper bills and their associated mail delivery.

Digitized over 36,000 documents from building permit archive, which will now be available in a digital format.





## Summary of Municipal Energy Consumption

The corporate greenhouse gas emissions have not shown a consistent decrease since the 2016 baseline despite substantial upgrades to electrical lighting and equipment (Figure x). Comparing 2016 and 2023 electricity between divisions (Figure y) shows the success of the various upgrade projects across the organization, including the significant decrease in usage by switching all streetlights to LED. However, electricity is the smallest source of GHG emissions compared to natural gas and liquid fuel, due to the strong renewable component of the Ontario electrical grid. Ontario has one of the cleanest energy grids in Canada, with almost 90 per cent of our electricity grid supplied by renewable or nuclear energy, including wind, solar and hydro. Liquid fuel and natural gas far surpass electricity in GHG emissions and, therefore, reduction in use should be prioritized.

Examining the natural gas by division shows how natural gas has been reduced for some divisions but not others. (Figure z). A significant reduction in usage can be seen when extensive retrofits occur, such as the upgrades that took place at the Howard Armstrong Recreation Centre (Figure ab). Since 2019, several retrofits have been made at this location including replacing the roof and upgrading natural gas-powered equipment from the 1980s. These upgrades are continuing in 2024 and may result in further GHG reductions. These retrofits also carry financial benefits: natural gas costs of 2016 -2019 compared to those of 2020 -2023 show an average annual savings of over \$13,000.

The liquid fuel data below is based only on the fuel purchased at City depots and do not account for fuel purchased through corporate purchasing cards, which were widely used before 2018. While this change in fuel use tracking affects the data, it does not account for all the changes that have been observed, especially in divisions related to community safety and security (Figure og). Competing priorities, such as increased community safety, may result in more vehicle use, but reducing vehicle emissions can still be achieved by switching to low- or zero-emissions vehicles, reducing idling and providing SmartDriver training.

The liquid fuel data is based only on the fuel purchased at City depots and do not account for fuel purchased through corporate purchasing cards, which were widely used before 2018. While this change in fuel use tracking affects the data, it does not account for all the changes that have been observed, especially in divisions related to community safety and security (Figure og), when compared to fuel usage for roads and transit services (figure g). Competing priorities, such as increased community safety, may result in more vehicle use, but reducing vehicle emissions can still be achieved by switching to low- or zero-emissions vehicles, reducing idling and providing SmartDriver training.

Figure x

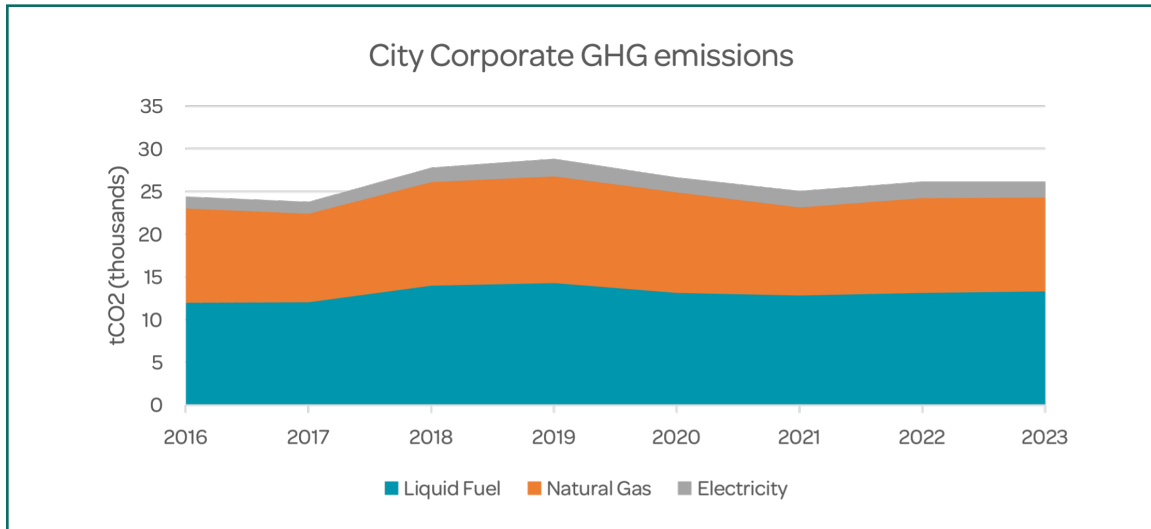


Figure y

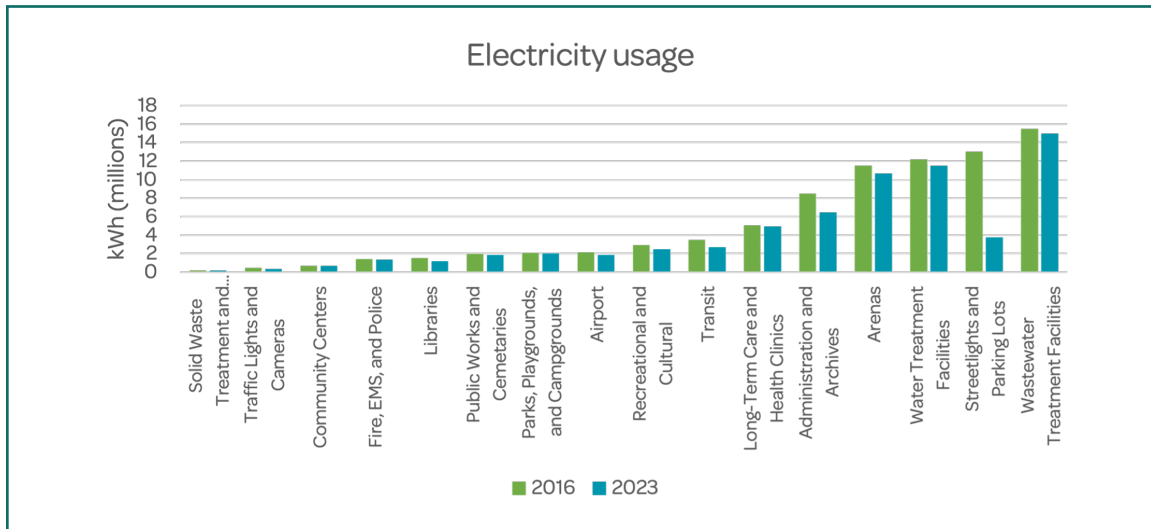


Figure z

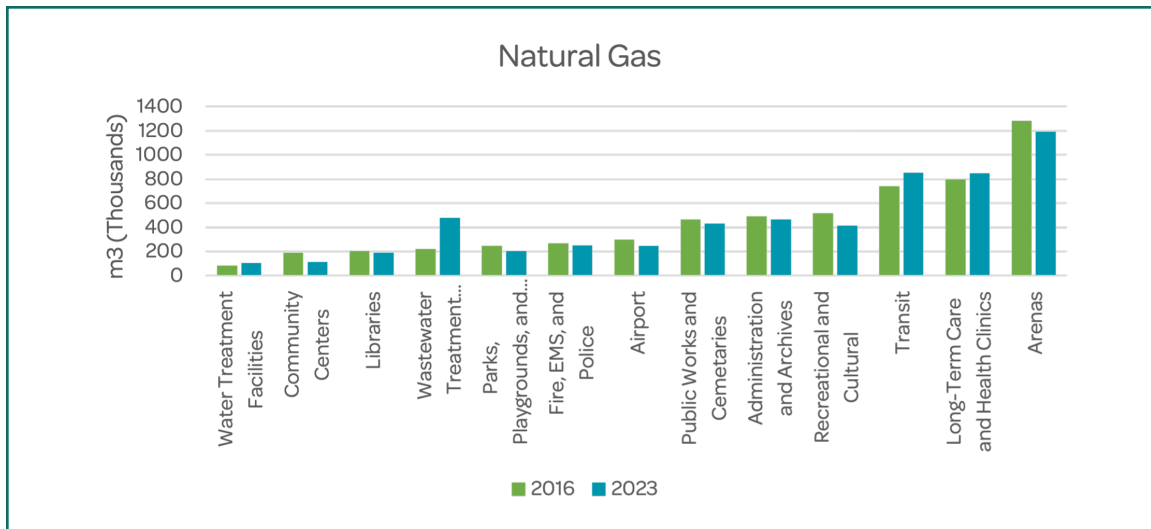


Figure ab

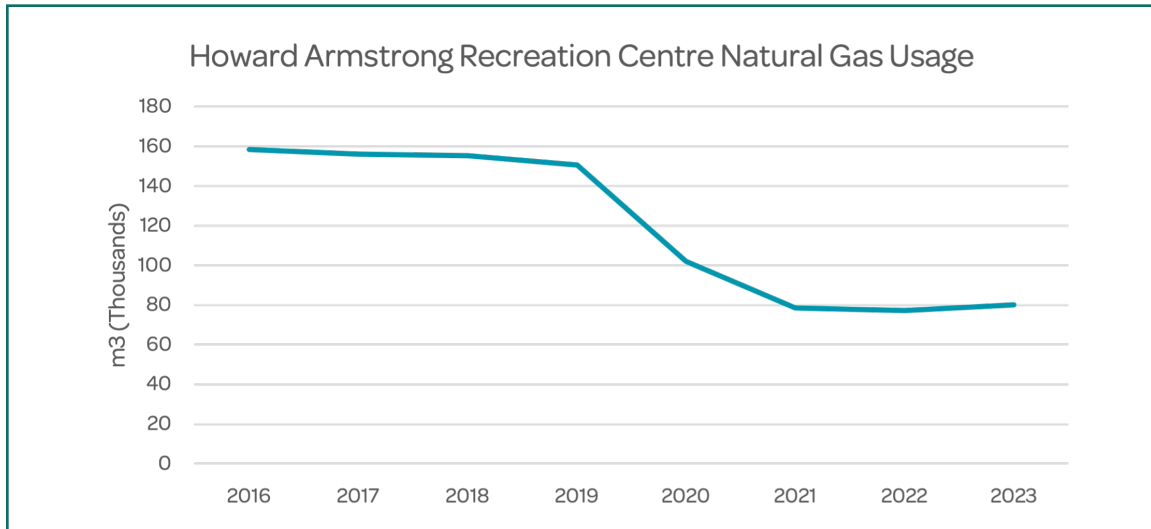


Figure og

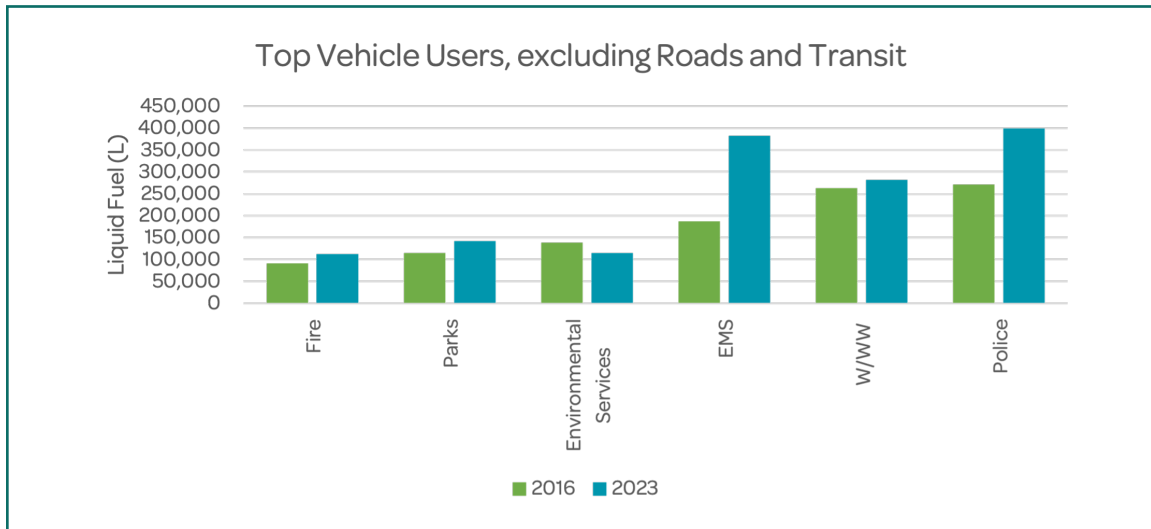
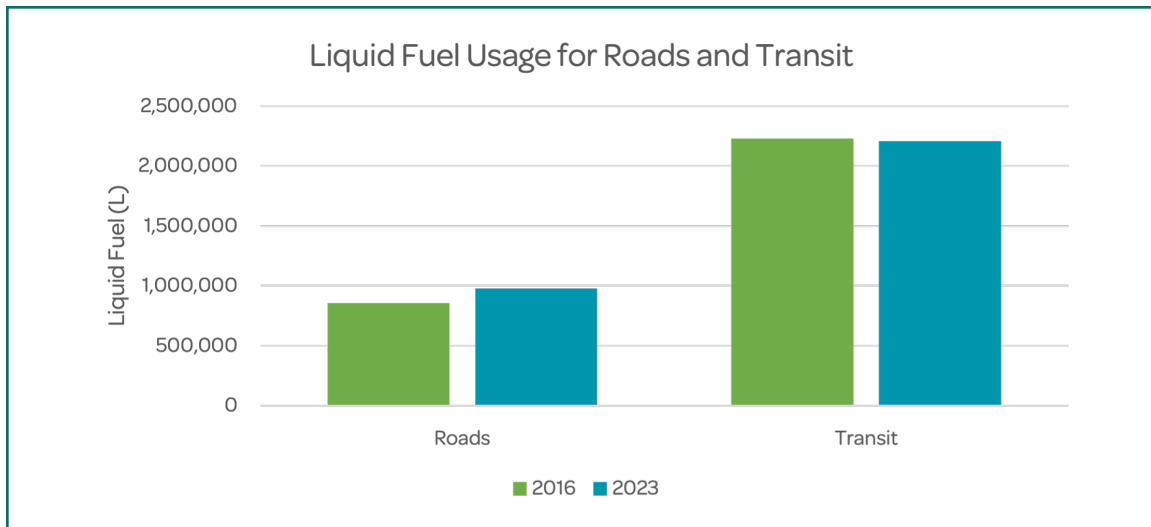



Figure g



# Compact, Complete Communities

An illustration of a street with a crosswalk, flanked by green trees. A white text box with an orange border is centered over the street.

Personal vehicle use and household heating are two major contributors to the community's energy use and GHG emissions. Increasing the population density of cities has been widely accepted as important in mitigating climate change by lowering GHG emissions from these sources. The key is to create living areas that are not only more people dense but also more liveable by offering a rich variety of housing types close to employment, services, transit and green spaces. The City has adopted several policy and regulatory changes to encourage a more compact and complete community by enhancing walkability and access to public transit, and enabling a greater range of housing types.

## 2023 Accomplishments



Developed new community growth and quality of life plans including the Whitson River Trail, Parkland Subdivision Standards and the Nodes and Corridors amendment to the City's Official Plan.



Completed projects include the Downtown Sudbury Strategic Parking Plan update and Strategic Public Realm Improvements for Downtown Sudbury.



Completed a Housing Supply Strategy supported by updated population projections, housing supply and demand analysis, housing as-of-right zoning review, and surplus school best practice review for adaptive re-use for residential and community services.



Improved service delivery by implementing automation and technology improvements, including aerial mapping data and drones to assist with asset identification and capital projects.

## Efficient Buildings

Space heating of buildings consumes the most energy in Greater Sudbury and is one of the three main sources of GHG emissions. Improving the energy efficiency of both private and public buildings is clearly an important goal for the next few decades. Other related sources of municipal energy use, such as streetlights and recreational facility operation, also need to be improved where possible.



## 2023 Accomplishments



Completed Phase I of the Howard Armstrong Recreation Centre mechanical and HVAC upgrades.



Successfully upgraded 51 buildings' indoor lighting to LED with Save on Energy incentives.



Performed 16 energy audits on City buildings.



Completed the revitalization of nine playgrounds.



Completed the revitalization of eight outdoor sports courts.

# Water, Wastewater, and Solid Waste



Maintaining and operating water and wastewater treatment and distribution systems consumes the most electricity of any municipal service. Energy efficiency improvements continue to be made every year during operational reviews and equipment replacement. Management of solid waste (aka, garbage) plays an important role in reducing GHGs through decreased packaging, landfill emissions and fuel consumption. Projects such as lift station upgrades, garbage and leaf and yard trimmings pickup every other week, and new washing stations have decreased energy and fuel use for the City. Improving waste collection and management decreases waste-generated emissions.

## 2023 Accomplishments



Upgraded the Sudbury Landfill and Waste Diversion Site organics composting pad.



Continued the partnership with Water First Education and Training to provide First Nations youth with opportunities to obtain internships and experience towards water operator licensing.



18,230 water meters were upgraded to smart water meters, bringing the cumulative total to 47,696 by end of year 2023. In total, 97.7 per cent of all water meters are now upgraded.



Completed electrical upgrades to Sudbury Wastewater Treatment Plant and several Lift Stations.



Completed rehabilitation for one kilometre of watermain and four kilometres of sewer main to reduce risk of underground failures.



Completed infrastructure upgrades at various water and wastewater treatment plants, wells and lift stations.

# Low-Carbon Transportation

Vehicular transportation is the largest source of GHG emissions in Greater Sudbury, producing 32 per cent of total emissions from burning fossil fuels. Combined with the Compact and Complete Communities initiatives outlined earlier, efforts to reduce the requirements and duration of personal vehicle trips will assist in reducing emissions, while fostering more opportunities for active and public transportation. Switching to low-emissions or zero-emissions vehicles will also have a significant impact. The City has shown leadership by converting several vehicles in its fleet to EVs, increasing the active transportation network, increasing transit ridership and initiating a feasibility study on electric transit.

## 2023 Accomplishments

Offered free transit for older adults during the month of June to encourage them to discover the benefits of the transit system and support independence. 2,151 older adults took part in the initiative.

Implemented new transit planning software to obtain more reliable system data and consider service level efficiencies.

Included active transportation infrastructure during improvements to the Kingsway, Paris Street and Walford Road.

Replaced several gas-powered tools with battery-powered options such as chainsaws and cut-off saws.

Began developing new Complete Streets Guidelines.

Launched Smart Commute, a free mobile and web application to support and incentivize cycling, walking, carpooling and transit travel.

The Transportation Demand Management Grant Program provided \$10,000 in funding to support 10 community-based projects that focus on active and sustainable travel.

Implemented an automated speed enforcement program.

30 per cent of cycling infrastructure identified in the Transportation Master Plan has been constructed. Now totalling 73.68 km of cycling facilities per 100,000 population.

Hosted the second annual Battery Electric Vehicle (BEV) – Mines to Mobility Conference to advance BEV economy opportunities in northern Ontario, attracting 280 delegates from across Canada. The event focuses on the entire BEV supply chain and forges relationships between leaders in mining, automotive, battery technology, transportation and green energy.



## 2023 Accomplishments



Celebrated the 50th anniversary of VETAC, City Council's Advisory Panel on Regreening.

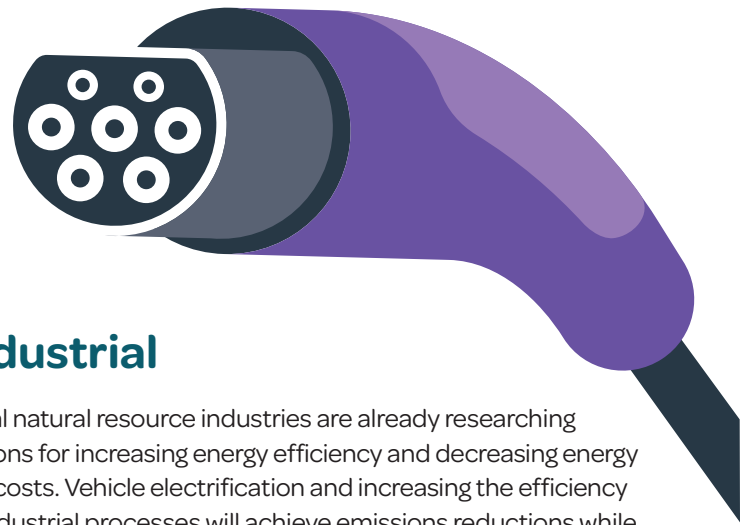
Celebrated the release of Jane Goodall's – Reasons for Hope IMAX film that features the Sudbury regreening story.

For Greater Sudbury to achieve a net-zero target by 2050, the GHG emissions will have to be addressed through reduction efforts and any residual emissions will be offset through renewable energy production and carbon sequestration, mostly through planting trees. Not only does the City continue to plant thousands of trees each year through the Regreening Program, but it has initiated an Urban Forest Master Plan and completed a Street Tree Policy.



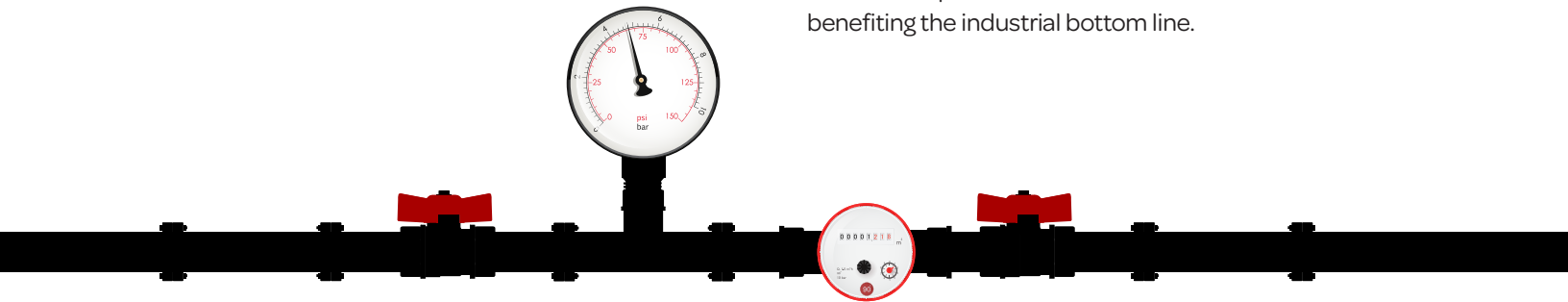
## Local Clean Energy Generation

Generating local clean energy will be essential in becoming a net-zero community by 2050. Achieving net-zero requires a balance in the amount of GHGs emitted and the amount removed. Reducing energy use is the first step and using clean or renewable energy for the remainder of energy used is the next.



## Industrial

Local natural resource industries are already researching options for increasing energy efficiency and decreasing energy use costs. Vehicle electrification and increasing the efficiency of industrial processes will achieve emissions reductions while benefiting the industrial bottom line.

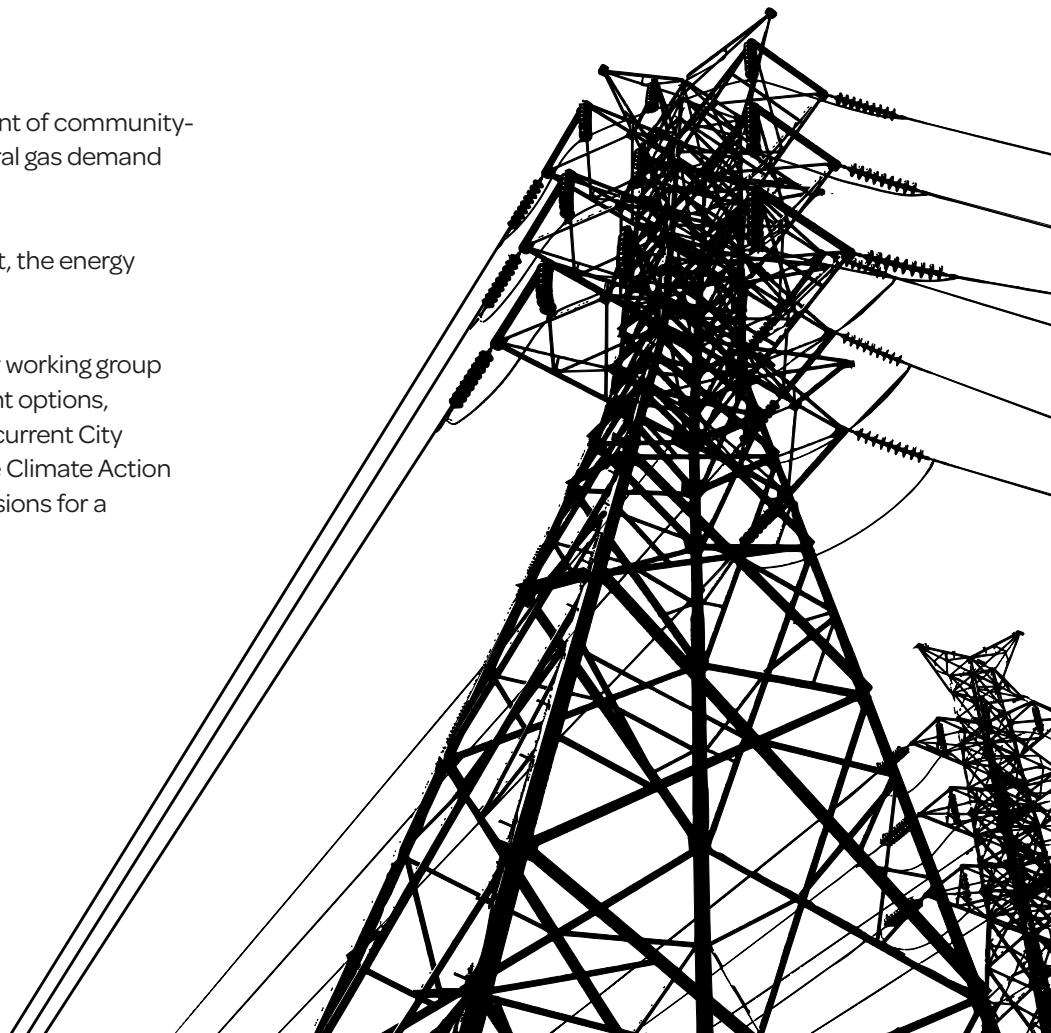


## Low-Carbon Energy Procurement

Goal 17 of the CEEP is to procure 100 per cent of community-wide grid electricity and 75 per cent of natural gas demand from renewable sources by 2050.

This goal relies on public and private interest, the energy market and collaboration.

To begin this process, an initial study and/or working group must be established to identify procurement options, opportunities, and obstacles. There are no current City projects to report on this topic, however the Climate Action Resource Team (CART) has initiated discussions for a Sustainable Procurement Strategy.



# Built Environment

(e.g., municipal infrastructure, roads, bridges, pump stations, buildings, power lines)

Built infrastructure is vulnerable to climate change events through several factors. Damage may include physical breakage, chemical corrosion (i.e., from rust or increased salt use), biological mold, and thermal damage (heat or cold damage). The built environment may also fail due to insufficient size or capacity, such as the wastewater system during heavy rain or flood events. Upgrading infrastructure such as culverts and watermains improves performance and resilience of local infrastructure under extreme weather conditions. Radio monitoring, pressure studies and public education campaigns help identify and address leaks, inflow and infiltration of the water/wastewater system to provide more efficient stormwater management.



## 2023 Accomplishments

Enhanced use of computerized maintenance management system to better track culvert condition assessments.

Installed new emergency generators at various lift stations.

Initiated the development of the Water and Wastewater Master Plan update.

Updated the Water and Wastewater Asset Management Plan.

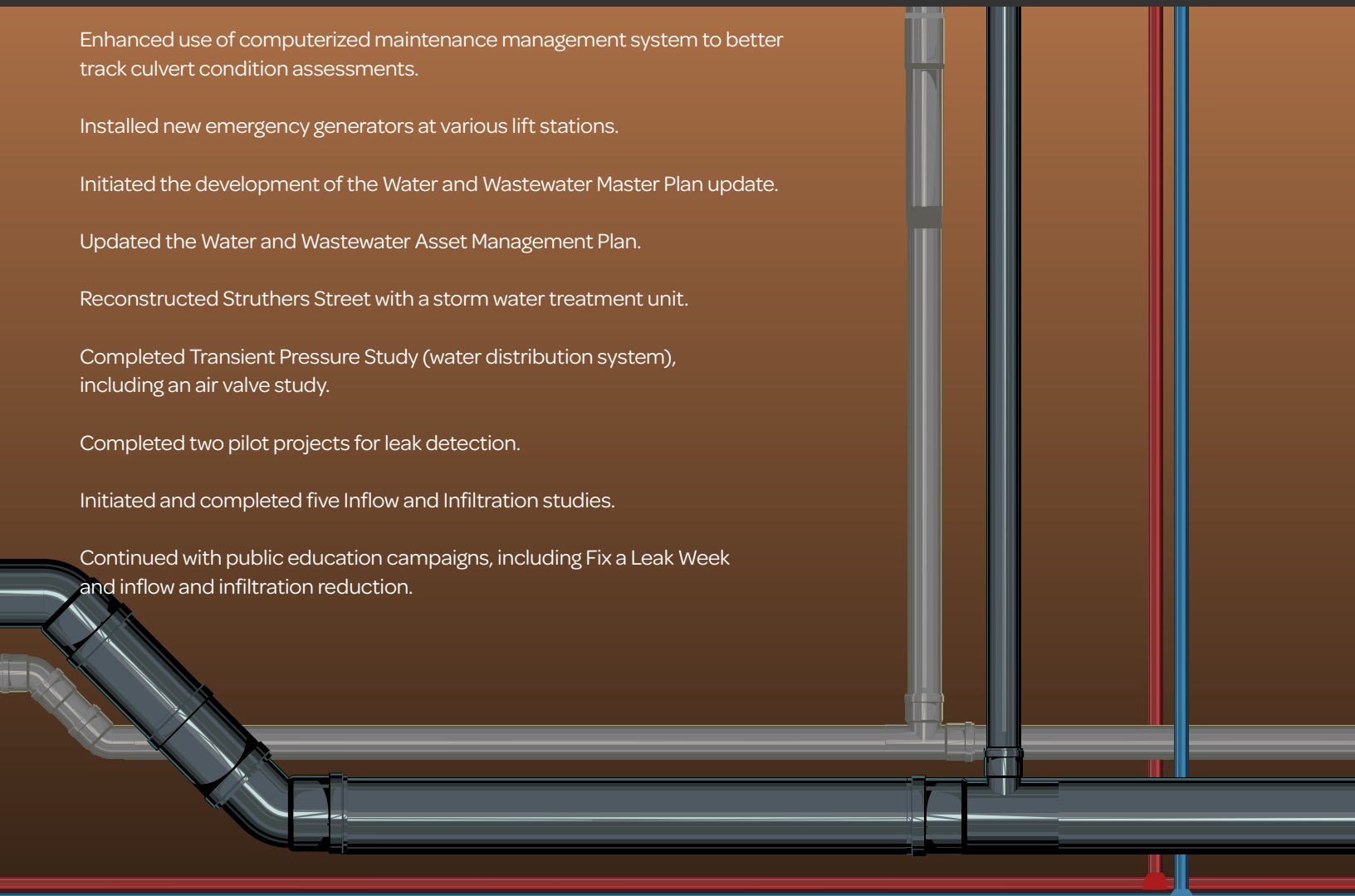
Reconstructed Struthers Street with a storm water treatment unit.

Completed Transient Pressure Study (water distribution system), including an air valve study.

Completed two pilot projects for leak detection.

Initiated and completed five Inflow and Infiltration studies.

Continued with public education campaigns, including Fix a Leak Week and inflow and infiltration reduction.



# Natural Environment

(e.g., natural resources, ecosystems, wetlands, trails, wildlife)

Climate change will affect:

- **Species distribution**
- **Assimilative capacity of the lakes/ rivers**  
(the ability to naturally absorb pollutants without adverse effects)
- **Shorelines**
- **Root systems**
- **Water retention of the soils**

The natural environment will also be affected by changes in:

- **Temperature**
- **Flooding**
- **Erosion**
- **Drought**
- **Fire**

The City's Regreening Program continues to play an important role in enhancing ecosystem services, protecting the regional watersheds, and creating healthy soil. Both private and public properties must be ready for these events and can be better prepared by including green infrastructure such as trees, rain gardens, wetlands and parks. Greater Sudbury is located just beyond the most northern distribution of many species. This position means that only minor changes in growing seasons and winter temperatures will result in the migration of both native and invasive species.

## 2023 Accomplishments

Converted 73 lane kilometres of roads from salt to sand only routes.



Completed and implemented the Winter Maintenance Salt Route Review to better align with approved service levels.

# Local Economy

(e.g., local businesses, tourism, agriculture)

Tourism and commercial sectors are not immune to a changing climate. Climatic impacts can affect buildings and operations and lead to changes in travel and spending behaviours. The City aims to improve the resilience of the local economy by increasing the availability and awareness of public sector resources, including funding incentives, networks, partnerships and services. The actions for this theme will require collaborative work with industry stakeholders and partner networks to identify gaps in climate change resilience and provide awareness and access to support services and programs. Municipal economic development programs and strategies are planned for review in the near term to ensure that they are aligned with the CCCAP and ensure climate change resiliency is prioritized, incentivized and accessible.

## 2023 Accomplishments



Integrated a climate lens within the Economic Development funding and support applications, including the Film Sponsorship Program, Special Event Application and Arts and Culture Grant Application.



Created educational opportunities and incentives for businesses to reduce their GHG emissions and to become more resilient to climate change.



Included breakout sessions on environmental sustainability at the Cultural Forum.



Created a Green Event web page to encourage sustainability measures when planning special events.



Provided resources for locally shot film and television projects to help lower their environmental footprint (i.e. waste sorting training for crew, etc).



## Cultural and Social Cohesion

(e.g., building community resilience through schools, community centres, faith and cultural centres, volunteerism)



Climate change impacts on the community's cultural and social cohesions include reduced access to cultural events, volunteer opportunities, spiritual gathering places and educational institutions. Some Greater Sudbury residents will experience a disproportionate increase in physical, mental, social, and cultural impacts due to climate change. There may be lost or reduced opportunities to meet with friends, continue education, or have medical needs met. The City of Greater Sudbury will continue to consider and include all populations in efforts to become a more resilient community for all residents.

**2023 Accomplishment**

Launched the Climate Justice Corner at the Main Public Library



# Community Health and Well-Being

(e.g., disaster and emergency management, health and medical care, food access, evacuation, and public communications)

Climate change exacerbates existing health inequities due to extreme weather, water- and food-borne illnesses, vector-borne disease, wildfire, changes to water quality and quantity, as well as risk to local food systems. Direct health impacts of climate change include heat stroke, aggravation of respiratory and cardiovascular conditions, serious injury, illness, anxiety and trauma, and others. Climate change can have indirect impacts on health, such as the interruption of medical and social services, impacts on food and water availability, loss of housing or belongings to floods or other crises and lost employment hours and wages. The City's Emergency Management will continue to play a critical role in our community's preparation and the delivery of services during climate-related emergencies.

## 2023 Accomplishments

Finalized an enhanced engagement framework and action plan with local community partners and Indigenous service providers to implement the Stronger Together Host Community operating plan for First Nations communities displaced due to flooding or wildfires.

Conducted various public education campaigns to increase community awareness and knowledge about the importance of being prepared for an emergency.

Conducted a community-wide notification exercise during Emergency Preparedness Week.

Established a new four-year agreement with Canadian Red Cross to support personal disaster.

Assisted when residents became displaced due to an emergency or disaster. The agreement was supported by the City Council approved Personal Disaster Grant.

Hosted four public education and awareness campaigns reflecting seasonal and timely emergency preparedness messaging and identified local community hazards.

Delivered 80 public education programs across the community to raise awareness and reduce the risk of fires in our community.

## Enabling Actions

(e.g., inform and empower community, research and new technologies, integration of climate change adaption)

The City hopes to integrate climate change adaptation into a variety of policies and initiatives and facilitate diverse collaborations and partnerships. Enabling actions also address increased needs for resources, support and education to help our community better understand and prepare for climate change risks and recover more quickly from crisis. Through financial support, partnerships and resource-sharing, non-profit, grassroots, and cultural organizations can build capacity and support their initiatives and programs that build awareness and actions around climate change.

## 2023 Accomplishments

The City's Climate Action Resource Team (CART) updated the Council Climate Lens to include climate adaptation.

Installed Strong Neighbours Climate Change Resilience Projects in three playgrounds with measures to help with climate resilience.



# 2023 Community-Wide Accomplishment Highlights



**1000+**

electric vehicles were registered in Greater Sudbury in 2023. Up from just over 600 registered in 2022.



**700+**

households in Greater Sudbury performed energy audits to participate in home retrofit programs.



**5+ million**

transit ridership reached for the first time ever.



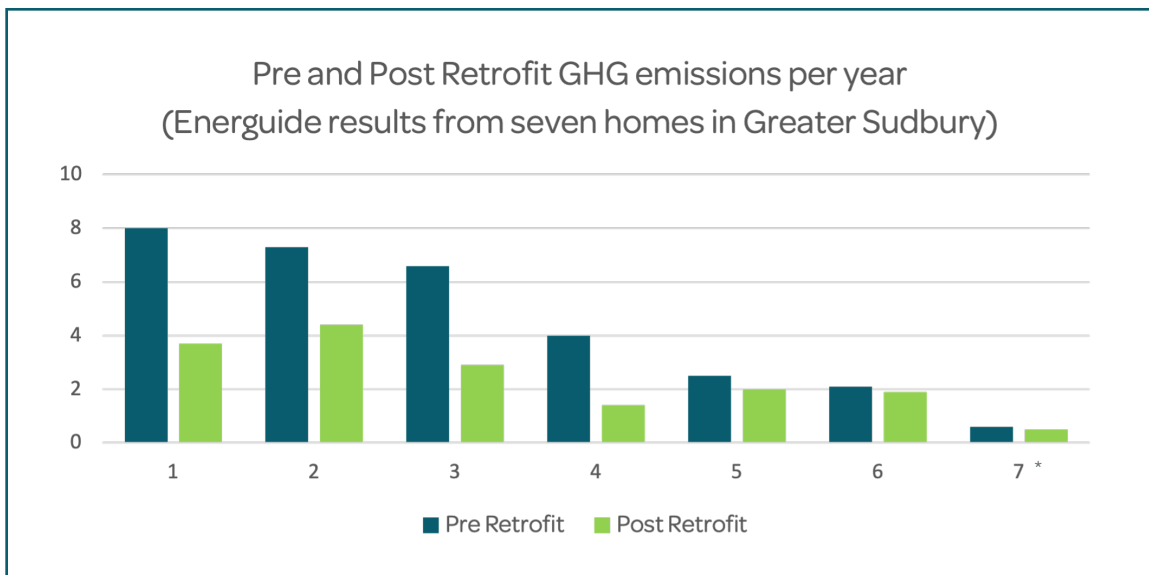
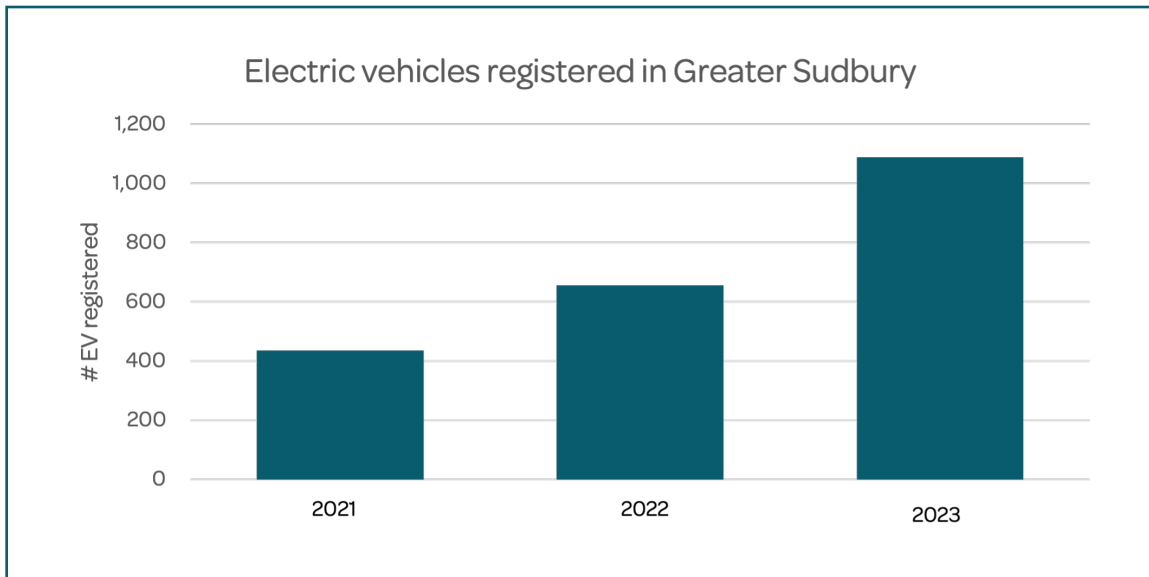
**33**

applicants received Residential Inflow and Infiltration Subsidies to help their homes prepare for heavy rainfall and snow melt.



**4,660,190 kg**

of leaf and yard trimmings to Vale for tailing rehabilitation, contributing to regreening and carbon sequestration.



\* all-electric home

## Community Stakeholders Accomplishment Highlights



**100%**

of Rainbow School Board schools achieved certification in EcoSchools Canada.



**900+ kg**

of invasive species removed through the Junction Creek Stewardship Committee.



**900+ kg**

of fresh vegetables were grown at the Flour Mill Community Farm.



**50,000+**

trees planted through Conservation Sudbury.



**26**

new books added to the Climate Justice Corner of the Main Public Library through the Coalition for a Liveable Sudbury.

## Summary of Community Energy Consumption

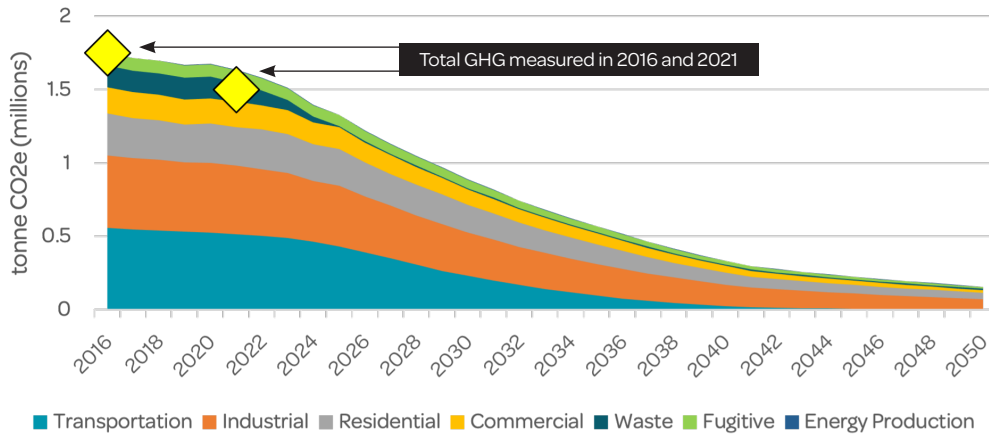
The City continues to provide residents with services and infrastructure that aid in climate change mitigation and adaptation for sectors such as transit, active transportation, flooding, sewage backup and emergency management (heat waves, wind storms, power outages).

Since the release of the CEEP in 2020, there has been more education and outreach on the topic of climate change, as well as an overall global awareness and acceptance that we must reduce our pollution, GHG emissions and general impact on the environment. Through these outreach efforts, we recognize that some residents favour a focus on the co-benefits of climate change such as reduced energy costs, increased home comfort, increased air quality and reduced risk from severe weather events.

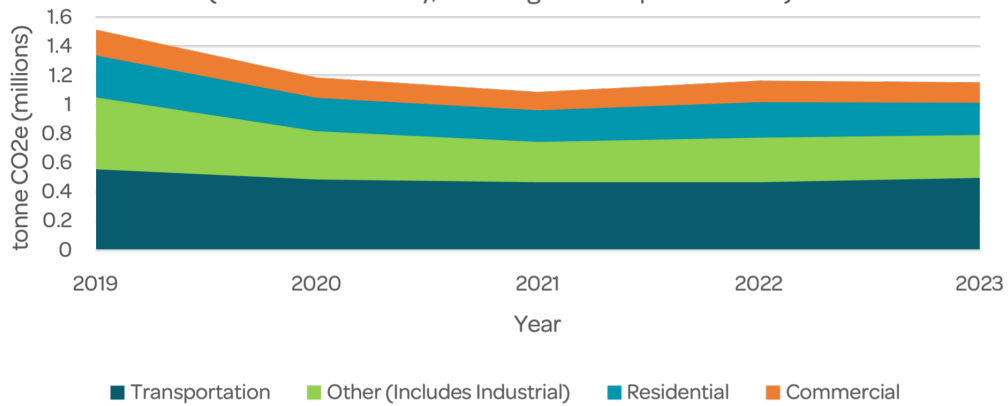
Data shows that the community has reduced GHG emissions since 2016 at a faster rate predicted by the CEEP model (Figure CC). Unfortunately, the data were collected during the COVID-19 pandemic when many people were using fewer vehicles or buildings outside the home. Many communities across Canada have seen a similar trend where their GHG emissions went down from 2016 to 2021 but did see some increase as communities began to recover from the pandemic and return to regular routines.

A decrease occurred across the three main sources of GHG emissions (electricity, natural gas and liquid fuel) from 2019-2023, with the largest decrease from the "other (including industrial)" sector. Community accomplishments as shown in the infographic demonstrate that the community is creating some momentum and moving towards a cleaner future with growing transit ridership, EV sales and home retrofits. To achieve more substantial decreases in emissions, it is imperative that Sudburians increase their climate action commitments, especially in terms of home efficiency and low carbon transportation. The City will continue to encourage and incentivize climate action initiatives within the community as opportunities arise and partnerships are created.

Modeled GHG levels that meet the net-zero target by 2050



Measured Community GHG Emissions from top four sources  
(based on electricity, natural gas and liquid fuel data)



# City of Greater Sudbury Climate Action Implementation

## Phase 2 2024-2028

The following action plan provides municipal initiatives to help the City reduce GHG emissions and become more resilient to climate change. The actions are arranged according to the CEEP's eight strategic sectors and the CCCAP's six themes with completed projects placed at the end of the document. Actions were provided by division leads with information that was available as of October 2023 and have been or will be individually considered during budget processes.

Projects that were included in the Phase 1 (2020-2025) action plan are either presented with status updates or placed in the completed section. Projects that have been initiated since 2020 are highlighted in purple and may not include a status or other details, based on input from project leads.

## Action types



**Plans and Studies:** Conduct research or strategic planning projects to establish direction on new or emerging areas of interest.



**Education and Outreach (E&O):** Undertake initiatives aimed at public education and outreach using a variety of means. Also includes sector or industry-specific E&O.



**Policies, Guidelines, and Standards:** Establish or update rules and regulations to provide direction for projects, initiatives, or programs.



**Procedures:** Develop and implement new ways of doing business or adapt existing practices and procedures to enhance low carbon resilience.



**Programs and Projects:** Develop new programs or projects to advance climate action with proof-of-concept pilot projects as needed.



**Partnerships and Engagement:** Collaborate with stakeholders (both internal and external) to advance climate action within municipal operations and in the community. Advocate to other levels of government on behalf of the City to advance and support local climate action.

## Cost

Work Plan: cost and staff capacity accounted for through annual Work Plan and operating budgets.



**Low Cost:** ≤ \$100,000

**Medium Cost:** \$100,000 - \$500,000

**High Cost:** > \$500,000

## Timeline



**Short Term:** 1-2 years

**Medium Term:** 3+/- years

**Long Term:** 4-5 years

**Recurring:** Actions which happen on an ongoing basis.

## Status

**Not yet initiated** – intentions to proceed with action uncertain; not part of existing work plans or budget.

**Planned** – intention to complete the action is part of current or future work plans.

**In progress** – includes actions that have been initiated, are already funded, and/or are part of the business-as-usual operations of a team or division within the City.

 **No change in status between 2020 and 2023**

 **Status has upgraded from 2020 to 2023**

## Potential Barriers



**Minor:** Highly controllable; high certainty (e.g., achieved with minor staffing adjustments; technology widely available).



**Moderate:** Moderately controllable and moderate certainty (e.g., technology promising but not fully developed, affordable or available widely; moderate levels of funding required but unsecured).



**Major:** Low to no ability to control and/or low certainty and/or highly dependent on external factors (e.g., technology in early development; high levels of external funding support required but unsecured).

## City of Greater Sudbury Climate Action Implementation 2024 - 2028

CEEP Foundational Actions								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Develop a tool for tracking and reporting local GHGs		Programs and Projects		Work plan \$	Planning Services	Planned	In progress	Staffing
Compact, Complete Communities Actions								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Official Plan Review Phase 2	Goal 1	Policies, Guidelines and Standards		Work plan \$	Planning Services	In progress	In progress	
Housing As-of-Right Zoning Review	Goal 1	Policies, Guidelines and Standards		Work plan \$	Planning Services		In progress	
Efficient Buildings Actions								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Monitor local green building trends	Goal 2 – Periodically increase the energy efficiency of new buildings until all new buildings in 2030 onward are passive house energy efficiency compliant	Programs and Projects		Work plan \$	Building Services	Planned	Not yet initiated	
Education on upcoming changes in the building code and building permit requirements	Goal 2	Education and Outreach Capital		Work plan \$	Building Services	Planned	Not yet initiated	Regulatory
Conversion to more energy efficient boilers in GSHC buildings	Goal 3	Programs and Projects		\$\$\$	Housing Operations	Planned	In progress	Budgetary
Implement optimization strategy of GSHC housing stock	Goal 3	Procedures		\$	Housing Operations	Planned	In progress	Budgetary
Continue to undertake energy retrofits as required at Pioneer Manor	Goal 4	Programs and Projects		\$\$	Long-term Care Services	Not yet initiated	In progress	Budgetary
Bed redevelopment at Pioneer Manor	Goal 4	Programs and Projects		\$\$\$	Long-term Care Services	Not yet initiated	In progress	Fully funded
Use of building automation	Goal 4	Programs and Projects		\$	Assets and Fleet Services	Not yet initiated	In progress	
LED Light Retrofits at Parks Facilities		Programs and Projects		\$	Leisure Services		In progress	
Greater Sudbury Outdoor Court Revitalization Project		Programs and Projects		\$\$	Leisure Services		In progress	

Lorraine Street Affordable Housing Project with energy efficient housing	Goal 4	Programs and Projects		\$\$\$	Housing Operations		In progress	Contractor delays
Sparks Street Affordable Housing Project with energy efficient housing	Goal 2	Programs and Projects		\$\$\$	Housing Operations		In progress	Equipment delays
Install new roof at 1960 Paris St.	Goal 4	Programs and Projects		\$\$\$	Housing Operations		Complete	
Install more energy efficient elevators in one Greater Sudbury Housing Corporation building	Goal 3 – The existing building stock is retrofit for 50% increased energy efficiency by 2040 and large buildings are routinely recommissioned	Programs and Projects		\$\$\$	Housing Operations		In progress	Budgetary
Replace backup power sources from diesel to natural gas on housing properties	Goal 4	Programs and Projects		\$\$\$	Housing Operations		In progress	Equipment delays
Electrical upgrades at the Sudbury Wastewater Treatment Plant	Goal 4	Programs and Projects		\$\$\$	Infrastructure Capital Planning		In progress	Equipment delays

### Water, Wastewater, and Solid waste

Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Update Water/Wastewater Asset Management Plan	Goal 5 – Decrease energy use in the potable water treatment and distribution system by up to 60% by 2050	Plans and Studies		\$	Infrastructure Capital Planning	In progress	In progress	
Apply energy efficiency lens for routine equipment maintenance and replacement	Goal 5	Policies, Guidelines and Standards	Recurring	\$	Water/Wastewater	Planned	Planned	Budgetary, equipment delays
Develop Best Operating Practices/ Best Operating Guidelines (Operational Excellence)	Goal 5	Policies, Guidelines and Standards	Recurring	\$	Water/Wastewater	In progress	In progress	Staffing
Inflow and Infiltration Reduction Plan	Goal 5	Plans and Studies	Recurring	\$\$\$	Infrastructure Capital Planning	In progress	In progress	
Anaerobic Digester System On going Review	Goal 6 – Achieve 90% solid waste diversion by 2050. An organics and biosolids anaerobic digestion facility is operational by 2030	Plans and Studies; Partnerships and Engagement		\$	Environmental Services	In progress	In progress	Budgetary
Sanitary sewer flow monitoring		Plans and Studies		\$	Infrastructure Capital Planning		In progress	
Lift station upgrades	Goal 5	Programs and Projects		\$\$\$	Water/Wastewater		In progress	Budgetary
Improve diversion of construction and demolition material	Goal 6	Programs and Projects		\$	Environmental Services		Complete	

## Low-Carbon Transportation Actions

Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Transit technology improvements	Goal 7 – Enhance transit service to increase transit mode share to 25% by 2050	Programs and Projects	Recurring	\$\$\$	Transit Services	Planned	In progress	
Major mobility hub infrastructure improvements	Goal 7	Programs and Studies	Recurring	\$\$\$	Transit Services	Not yet initiated	In progress	
Paris Notre Dame Bikeway construction	Goal 8 – Achieve 35% active mobility transportation mode share by 2050	Programs and Projects	Recurring	\$\$\$	Infrastructure Capital Planning	In progress	In progress	Budgetary
Annual active transportation infrastructure improvements	Goal 8	Programs and Projects	Recurring	\$\$\$	Infrastructure Capital Planning	In progress	In progress	Budgetary
Traffic Signal System Renewal	Goal 8	Programs and Projects		\$\$\$	Infrastructure Capital Planning	In progress	In progress	
Electric Vehicle procurement	Goal 9 – Electrify 100% of transit and city fleet by 2035	Programs and Projects		Work plan \$ – \$\$\$	Assets and Fleet Services	Not yet initiated	In progress	Budgetary, technological
Plan to electrify Transit fleet by 2035	Goal 9	Plans and Studies		\$\$	Transit Services	Not yet initiated	In progress	Budgetary, technological
Development of a Transit Electric Bus System Assessment Needs Study and Implementation Plan	Goal 9	Plans and Studies		\$\$	Transit Services		In progress	
Complete inspection of the sidewalk network and determine sidewalk condition index.	Goal 8 – Achieve 35% active mobility transportation mode share by 2050	Plans and Studies		\$	Infrastructure Capital Planning		Complete	
Reduce bus replacement cycle from 18 years to 12 years	Goal 8	Policies, Guidelines and Standards		Work plan \$ – \$\$\$	Transit Services		In progress	
Bus rapid transit (BRT) corridor design and construction	Goal 8	Programs and Projects		\$\$\$	Transit Services		Not yet initiated	Budgetary, Infrastructure changes
Transit hub security pilot program	Goal 8	Programs and Projects		\$\$	Transit Services		Complete	
Examine alternative energy sources for environmental services heavy duty vehicles		Policies, Guidelines and Standards		\$	Environmental Services		Planned	Technological
Development of the Complete Streets Guidelines	Goal 8	Policies, Guidelines and Standards		\$\$	Infrastructure Capital Planning		In progress	

Local Clean Energy Generation Actions								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Increase district energy use in Tom Davies Square	Goal 15 – Expand the downtown district energy system to 23MW capacity	Programs and Projects		\$	Assets and Fleet Services	Not yet initiated	Complete	
Expand the landfill gas collection system at the Sudbury Landfill and Waste Diversion Site	Goal 6	Programs and Projects	Recurring	\$\$\$	Environmental Services		In progress	Infrastructure changes
Low-Carbon Energy Procurement								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Develop a green procurement strategy/ plan (includes part of Goal 17)	Goal 17 – Procure 100% of community wide grid electricity and 75% of natural gas demand from renewable sources by 2050	Policies, Guidelines and Standards		Work plan \$	Purchasing Section	Planned	In progress	Staffing
Carbon Sequestration								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Develop a Regreening Master Plan	Goal 18 – Increase the reforestation efforts of the Regreening Program	Plans and Studies		Work plan \$	Planning Services	Not yet initiated	In progress	Staffing
Enhance carbon sequestration through soil creation		Plans and Studies; Partnerships and Engagement	Recurring	\$\$	Environmental Services	Not yet initiated	In progress	Budgetary and based on ongoing partnerships
Development of an Urban Forest Master Plan		Plans and Studies		\$	Planning Services		Complete	

# Climate Change Adaption: Community Climate Change Adaption Plan (CCCAP)

Built Environment								
Action	Specific CCCAP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Feasibility study for Low Impact Development (LID) in Greater Sudbury		Plans and Studies		\$\$	Infrastructure Capital Planning		Planned	Staffing
Capreol Trunk Storm Sewer Improvement	Objective 2 – Urban flooding and wastewater system bypass events are less severe and less frequent	Programs and Projects		\$\$\$	Engineering		Planned	
Continue to enhance landscaping on housing properties to address climate change through shade, stormwater management and food access, in partnership with local community groups	Objective 4 – Homes are more resilient to future climate conditions and extreme events	Programs and Projects	Recurring	\$\$\$	Housing Operations		In progress	Budgetary
Install stormwater vortex separator at 1960 Paris St.	Objective 2 – Urban flooding and wastewater system bypass events are less severe and less frequent	Programs and Projects		\$\$	Housing Operations		Complete	
Install eavestroughs to all housing properties	Objective 4 – Homes are more resilient to future climate conditions and extreme events	Programs and Projects		\$\$	Housing Operations		In progress	Budgetary
Upgrade sewage line at housing properties to reduce inflow and infiltration	Objective 4 – Homes are more resilient to future climate conditions and extreme events	Programs and Projects		\$\$	Housing Operations		In progress	Budgetary
Install backup heating sources at Pioneer Manor	Objective 1 – Infrastructure and buildings are more resilient to future climate conditions and extreme events	Programs and Projects		\$\$	Long-term Care Services		In progress	Only includes new section
Install shading structures to resident windows, walking paths and meeting spaces at Pioneer Manor		Programs and Projects		\$\$	Long-term Care Services		In progress	Budgetary/ Low risk
Assess stormwater management at Pioneer Manor parking lots	Objective 1 – Infrastructure and buildings are more resilient to future climate conditions and extreme events	Programs and Projects		\$\$	Long-term Care Services		In progress	Budgetary/ Low risk
Lift Station Cellular Spare Installation	Objective 1 – Infrastructure and buildings are more resilient to future climate conditions and extreme events	Programs and Projects		\$\$	Water/ Wastewater		In progress	Staffing
Water Wells Rehabilitation Program	Objective 1 – Infrastructure and buildings are more resilient to future climate conditions and extreme events	Programs and Projects		\$\$\$	Water/ Wastewater		In progress	Budgetary

Natural Environment								
Action	Specific CCCAP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Junction Creek Reconstruction	Objective 5 – Natural landscapes have enhanced adaptive capacity			\$\$\$	Engineering		In progress	
Finalize the remaining few subwatershed studies of the original 17 proposed	Objective 5 – Natural landscapes have enhanced adaptive capacity			\$\$	Infrastructure Capital Planning		In progress	Staffing
Community Health and Well-Being								
Action	Specific CCCAP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Create or update emergency hazard specific plans (examples: extreme heat, cold, freezing rain, flooding, and wildfire events) while developing a Community Emergency Plan	Objective 11 – Health risks are reduced and safety is increased for populations impacted by extreme weather events	Policies, Guidelines and Standards	Recurring	Work plan \$	Emergency Management		In progress	
Adapt Hot Weather Response plan components to address air quality advisory	Objective 11 – Health risks are reduced and safety is increased for populations impacted by extreme weather events	Education and Outreach		Work plan \$	Emergency Management		Planned	
Develop emergency management committee with First Nations		Partnerships and Engagement		Work plan \$	Emergency Management		Planned	
Expand and enhance community garden locations on housing properties	Objective 14 – Local food systems and drinking water supply are resilient to future climate conditions and extreme events			\$	Housing Operations		In progress	
Local Economy								
Action	Specific CCCAP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Integrate a climate lens within the Economic Development funding applications		Policies, Guidelines and Standards		Work Plan \$	Economic Development		Not yet initiated	
Create educational opportunities and incentives for businesses to reduce their GHG emissions and to become more resilient to climate change	Objective 8 – Local industry and businesses are resilient, diversified, attractive, and sustainable	Partnerships and Engagement		Work Plan \$	Economic Development		Not yet initiated	Staffing
Cultural and Social Cohesion								
Action	Specific CCCAP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Enabling Actions								
Action	Specific CCCAP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers

## Past Projects

CEEP Foundational Actions								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Develop a framework for collaborative implementation		Partnerships and Engagement		Work plan	Planning Services	In progress	Complete	
Develop a climate lens for decision making		Policies, Guidelines and Standards		Work plan	Planning Services	In progress	Complete	
Compact, Complete Communities								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Tiny/Small Home Review	Goal 1 – Achieve energy efficiency and emissions reductions by creating compact, complete communities through infill developments, decreasing dwelling size through an increase in multi-family buildings, and increasing building type mix			Work plan	Planning Services	In progress	Complete	
Commercial Parking Standards Review	Goal 1			Work plan	Planning Services	In progress	Complete	
Lasalle Boulevard Corridor Study Official Plan and Zoning By-law Amendment	Goal 1			Work plan	Planning Services	In progress	Complete	
Residential Parking Review	Goal 1			Work plan	Planning Services	In progress	Complete	
Efficient Buildings Action								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Conduct an energy audit for the older section of Pioneer Manor	Goal 4 – Achieve net-zero emissions in City buildings by 2040	Plans and Studies		\$	Long-term Care Services	Not yet initiated	Deferred	To be reevaluated after bed redevelopment completed in 2026
Develop a GSHC apartment building that meets Passive House standard	Goal 2	Programs and Projects		\$\$\$	Housing Operations	In progress	Changed scope	
Install regenerative elevators in one Greater Sudbury Housing Corporation building	Goal 3 – The existing building stock is retrofit for 50% increased energy efficiency by 2040 and large buildings are routinely recommissioned	Plans and Studies		\$	Housing Operations	Not yet initiated	Changed scope	Technology has not matured and that it may not be appropriate for use at this time
Education on building permit requirements for changes in heat source	Goal 2	Education and Outreach		Work plan	Building Services	Planned	Changed scope	Changed wording to be more accurate
Feasibility Study on Community Efficiency Financing	Goal 3	Plans and Studies		\$	Planning Services	Not yet initiated	Complete	

Conduct infrared scan of roof at Pioneer Manor	Goal 4	Plans and Studies		\$		Not yet initiated	Complete	
Assess efficacy of energy efficient technology for arenas	Goal 4	Procedures		\$\$		In progress	Complete	
Assess efficacy of laser system for standard ice thickness	Goal 4	Procedures	Recurring	Work plan		In progress	Complete	

### Water, Wastewater, and Solid Waste

Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Conduct a full capital needs assessment for the Valley	Goal 5	Plans and Studies		\$\$\$	Infrastructure Capital Planning	In progress	Complete	
Mobile District Metered Area Testing	Goal 5	Plans and Studies		\$	Infrastructure Capital Planning	In progress	Complete	
Develop a single use plastics strategy, especially relating to water (e.g., straws, bottled water)	Goal 6	Policies, Guidelines and Standards		Work plan (in part)		In progress	Complete	
Feasibility study for a small biodigester in the Valley	Goal 6	Plans and Studies		\$		Not yet initiated	Retracted	

### Low-Carbon Transportation Actions

Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
LED Streetlight Conversion	Goal 8	Programs and Projects		\$\$\$		In progress	Complete	
Drone Pilot Program	Goal 9	Programs and Projects		\$		Planned	Complete	

### Local Clean Energy Generation Actions

Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Assess the potential to expand landfill gas collection to Azilda and Hanmer landfill sites		Plans and Studies; Partnerships and Engagement		\$		Not yet initiated	Complete	

Low-Carbon Energy Procurement								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers
Carbon Sequestration								
Action	Specific CEEP Goal (If Applicable)	Action Type	Timeline	Cost	Division	Status 2020	Status 2023	Potential Barriers