climate action pour le climat

Rapport Annuel - 2022 - Annual Report

Greater Grand Sudbury

Climate Action Annual Report 2022

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

The City of Greater Sudbury is committed to be a climate-resilient and net-zero carbon community by 2050. Its Community Energy and Emissions Plan (CEEP) is aligned with the United Nations' Race to Zero campaign, which is embraced by many Canadian cities, including Quebec, Vancouver, Toronto and Guelph. Its Community Climate Change Adaptation Plan (CCCAP) will guide Greater Sudbury toward increased resiliency to the impacts resulting from a changing climate.

This report demonstrates the City's commitment to climate action through a variety of projects undertaken from 2021-2022. Accomplishments made during this period are highlighted for each climate action theme found in both the CEEP (climate mitigation) and the CCCAP (climate adaptation). Looking forward, the table at the end of the report provides an updated snapshot of climate action implementation for the five-year period of 2024 to 2028 – what's been accomplished, what's ongoing and what's next.

Data and information contained herein are current at the time of writing this report.

Message From the Mayor

I am pleased to share with you the City of Greater Sudbury's first Climate Action Annual Report, highlighting the progress and achievements from the corporation-wide efforts to prioritize the protection of our natural environment. This report outlines the ambitious goals and actions from the Community Energy and Emissions Plan and the Community Climate Change Adaptation Plan.

There is a crucial need to implement adaptive measures, consciously consider sustainable long-term alternatives and establish a community culture that prioritizes climate action. We are committed to improving our city's resiliency and vulnerability to extreme weather events and climate change impacts, while continuing to make strides towards substantially reducing our greenhouse gas emissions.

As keepers of the land, it's our duty to find safe, sustainable ways to ensure our community can flourish in the years to come. This means seeking out ways to minimize our impact on the environment in all aspects of the work we do.

Our city continues to make great progress by incorporating innovative and transformative projects that pave the way for a greener future for our residents. Together, we can protect our natural environment for future generations.

73.68 km
of cycling facilities per 100,000 population

30%
of cycling infrastructure identified in the Transportation Master Plan has been constructed

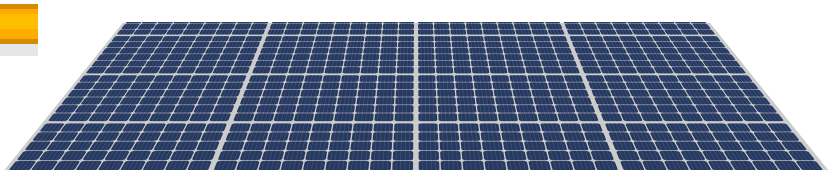
12 electric vehicles in the municipal fleet

47%
increase in transit ridership from 2021 to 2022 (COVID-19 recovery)

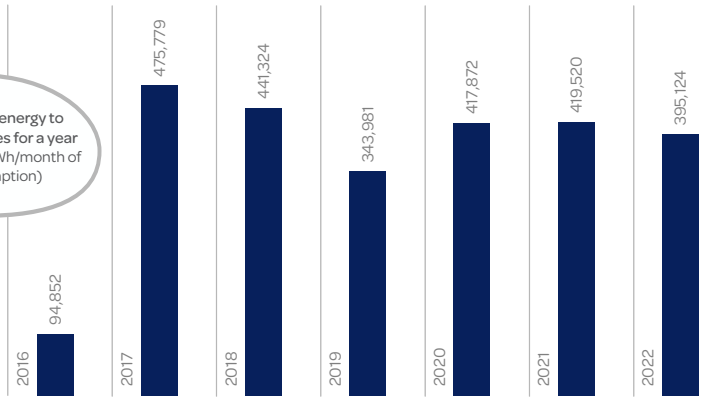
18%
decrease in weather-related by-pass events 2016-2022

13,893,460 kg
of organic materials diverted

4,899,908 kg
of residential green cart collected



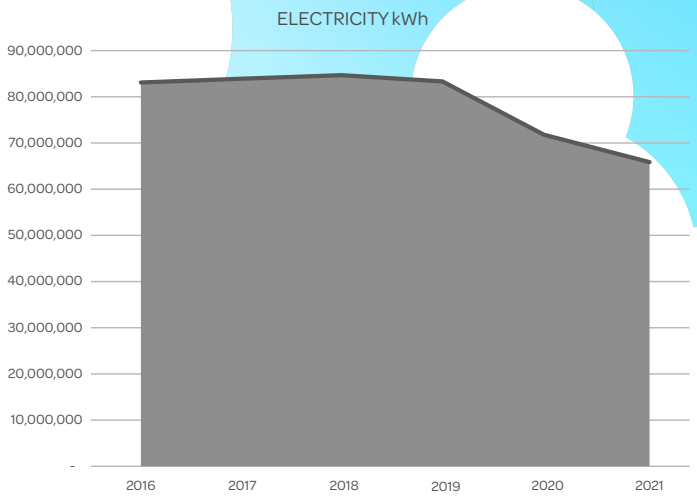
Energy derived from landfill gas



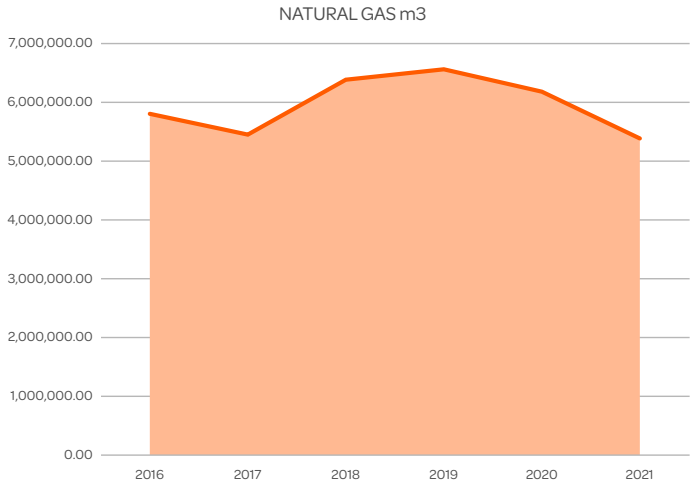
Energy produced by Gerry McCrory Arena and Pioneer Manor solar panels (kwh)

Summary of Municipal Energy Consumption

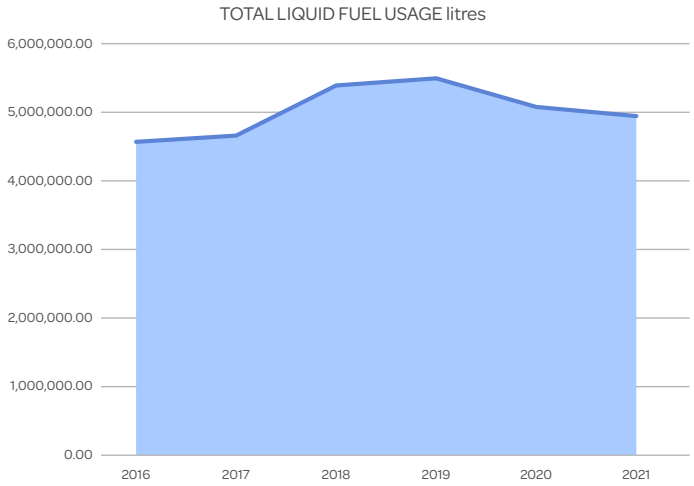
Electricity, natural gas and liquid fuels power the municipal buildings, equipment and vehicles that serve Greater Sudbury. Each of these three forms of energy emits greenhouse gases (GHGs), but the latter two do so to a much greater extent than electricity, most of which in Ontario is generated from sources that emit negligible amounts of GHGs. Every action undertaken to reduce energy and GHGs is reflected in the consumption of one or more of these three energy forms. As such, tracking the amount of each form of energy consumed in a year offers an excellent way of assessing progress in reducing both energy and GHG emissions of municipal infrastructure and operations.



Electricity use has decreased since 2016 due in part to COVID-19 lockdowns that reduced access to some municipal facilities, but also due to municipal initiatives such as the LED streetlight conversion and upgrades to the Sudbury Wastewater Treatment Plant (Kelly Lake Road), Wanapitei Water Treatment Plant and Pioneer Manor. Maintaining this downward trend in electricity use will require continued upgrades and retrofits to the 500+ City-owned buildings and operating equipment.



Natural gas consumption has not consistently decreased since 2016, however, between 2020 and 2021, Pioneer Manor, Carmichael Arena, Gerry McCrory Countryside Sports Complex and the Lorne Street Fleet and Transit Garage have decreased in natural gas consumption due to decreases in heating and cooling demands. A consistent decrease in natural gas use will require dedicated financial support for capital retrofit projects.



Liquid fuel use has increased since 2016 despite the addition of several electric vehicles to the City fleet and having a policy to reduce idling times. Causes include the increase in transportation needs of several divisions, especially emergency services and law enforcement. Liquid fuel use is also affected by weather (e.g., winter control requirements for snow and ice removal on roads, sidewalks and parking lots at municipal facilities).

While upgrades and retrofitting of buildings and equipment will further decrease electricity use, this energy form releases the least amount of GHG. To have a stronger impact on GHGs, the City will need to further natural gas reduction, re-examine vehicle use and idling and find more opportunities for electrification of vehicles, equipment and buildings.

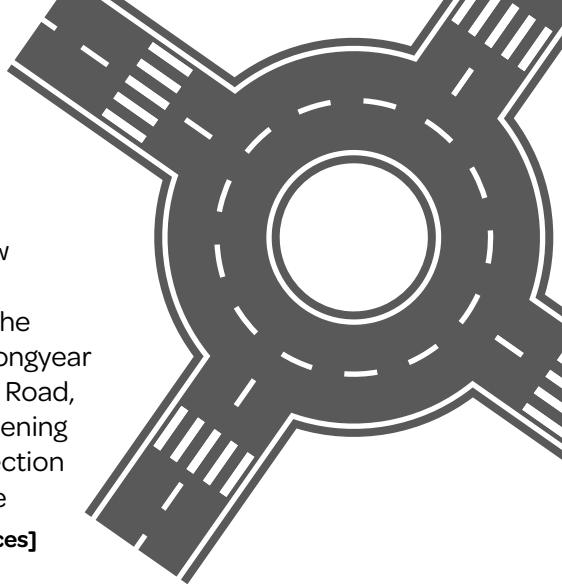
2021-2022 Accomplishment Highlights

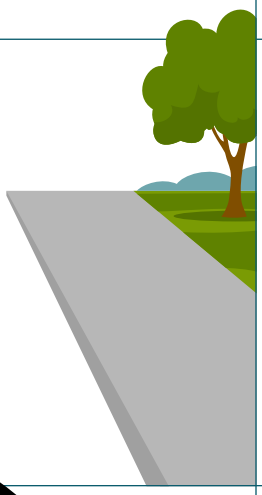
New software to enhance route scheduling for Transit

[Corporate Security and Bylaw Services – Information Technology]

Completed a new roundabout in Falconbridge at the intersection of Longyear Drive and Edison Road, retiring and regreening an 800-metre section of Longyear Drive

[Engineering Services]





1,055 metres

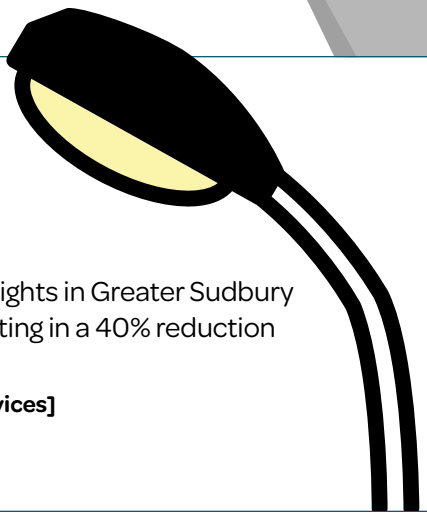
of new sidewalks

[Infrastructure Capital Planning]

13 kilometres

of new cycling infrastructure

[Infrastructure Capital Planning]



11,000 +

switched all streetlights in Greater Sudbury to LED bulbs, resulting in a 40% reduction in electricity use

[Fleet and Asset Services]

410 hectares

of impaired land planted with 145,000 seedlings and crushed limestone applied to four and a half hectares

[Planning Services]

50

public education program interactions delivered across the community to raise awareness and reduce the risk of fires in our community

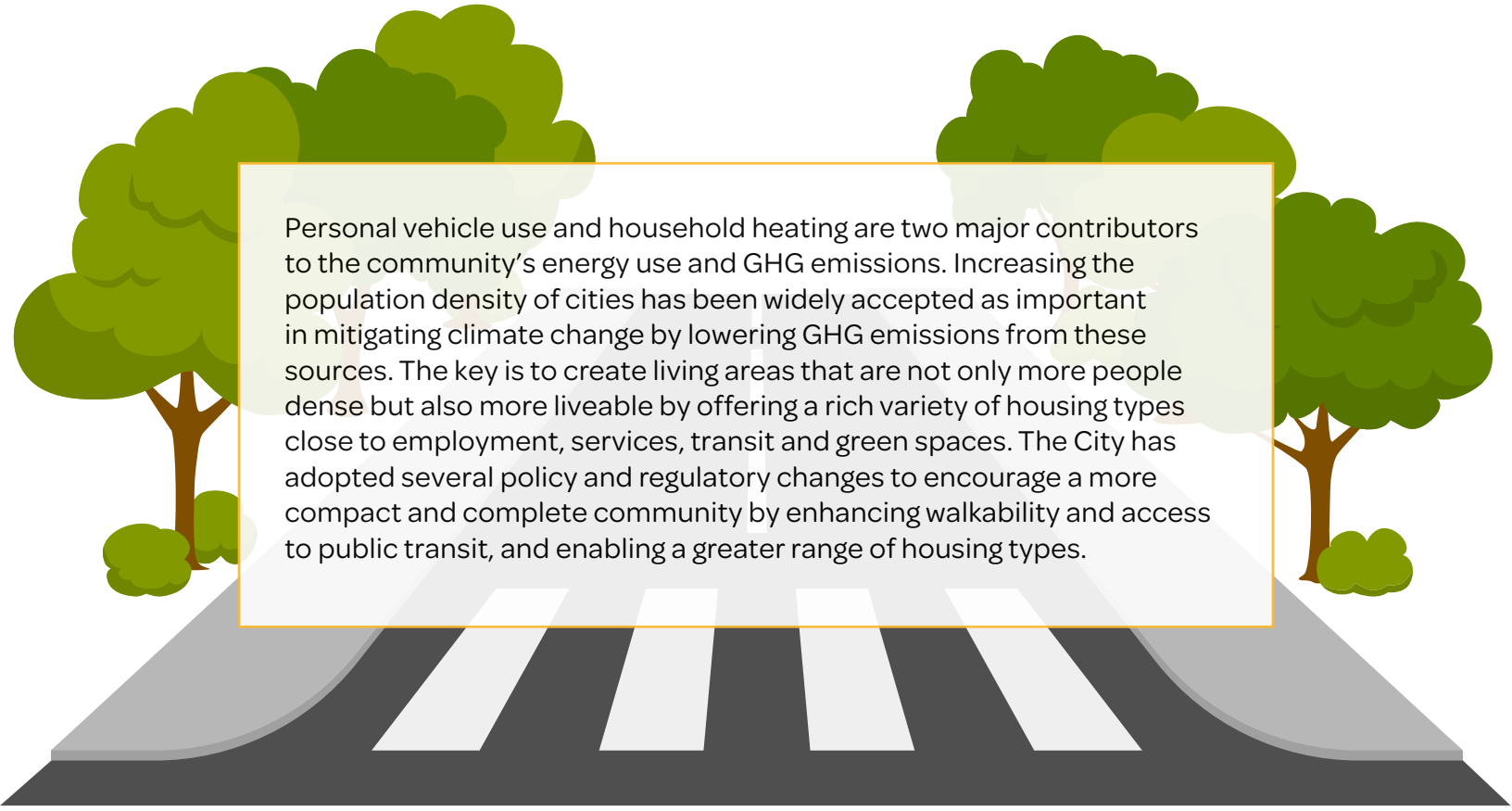
[Fire Services]

10,805 | **11,500** | **12,500**

2021 2022 2023

Total number of residents who have self-registered for Sudbury Alerts

Compact, Complete Communities



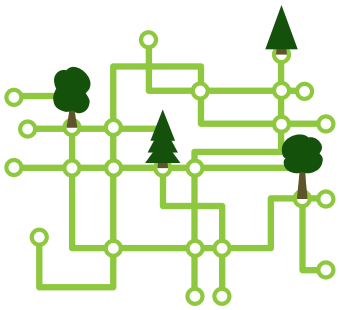
Personal vehicle use and household heating are two major contributors to the community's energy use and GHG emissions. Increasing the population density of cities has been widely accepted as important in mitigating climate change by lowering GHG emissions from these sources. The key is to create living 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.

2021-2022 Accomplishments

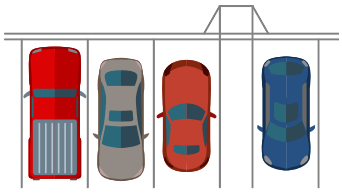
Reviewed policies for accessory guest room accommodation. Undertook a series of housing background studies to facilitate the creation of more housing, including a small and tiny home review.

Began implementation of the Nodes and Corridors Strategy through Official Plan and Zoning By-law Amendments for the Lasalle Corridor.

Adopted amendments to a number of commercial zones to permit a broader range of residential uses, including multi-residential development, retirement homes and long-term care facilities. Reduced parking standards for certain commercial uses. These changes support more compact, complete communities and greater potential for transit use.



Adopted reduced requirements for residential parking standards to facilitate the creation of additional housing units.



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.

2021-2022 Accomplishments

Upgraded several outdoor sports courts, including lighting, as part of the Outdoor Court Revitalization project.

Conducted infrared roof scan at Pioneer Manor.

Converted existing High Pressure Sodium (HPS) lighting with Light Emitting Diode (LED) fixtures at regional parks and pathways.

Conducted Home Energy Retrofit Financing Feasibility Study.

Began installing laser leveling systems for ice resurfacers in arenas.

Finalized the conversion of all 11,000+ streetlights in Greater Sudbury to LED. Outdoor recreational facilities were converted to dark-sky friendly lighting, which reduces light pollution and helps avoid energy waste associated with over-lighting an area.

Continued asset renewal projects including elevator modernizations and extensive roof replacements across a variety of locations.

Completed Delki Dozzi Cycling Track lighting retrofits.

Replaced several boilers of the Greater Sudbury Housing Corporation buildings.

Continued development of new energy efficient affordable housing.

Water, Wastewater, and Solid Wast

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.

2021-2022 Accomplishments

Completed upgrades at several **wastewater lift** stations.

Completed **mobile district metering project**.

Opened a new **Construction and Demolition Material Recycling area** at the Sudbury Landfill.

Implemented garbage and leaf and yard trimmings pickup **every other week**.

Upgraded **Hanmer Landfill Compost Pad**.

Created operational efficiencies in the Logistics section by implementing a **new vehicle wash system** that will reduce time spent washing vehicles by **50%**.

Began work on the **Solid Waste Management Plan**.

Began updating the **Water and Wastewater Master Plan**.

Conducted a participation study to evaluate the changes in residential waste collection and resulting **impacts on waste diversion**.

Partnered with Atikameksheng Anishnawbek to integrate a **new lift station** serving the Chi-Zhiingwaak Business Park into the **Walden Wastewater Treatment Plant**.

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.

2021-2022 Accomplishments

Continued to implement the Fire Services Fleet and Equipment Standardization Project.

Completed a new roundabout that helps reduce GHG emissions from less stops and idling.

Initiated a Transit Electric Bus System Assessment Needs Study and Implementation Plan.

Purchased and installed improved onboard next stop technology on all conventional transit buses and new software to enhance route scheduling for Transit.

Initiated a new Advanced Traffic Management System to enhance the City's ability to proactively manage and optimize the operation of the traffic signal network.

Completed detailed sidewalk condition review, enhanced the sidewalk condition index and prepared a maintenance plan for the sidewalk assets.

Constructed new sidewalks and cycling infrastructure, including along the Paris/ Notre Dame Bikeway.

Initiated a Transit Hub Feasibility Study to consider the most effective location and infrastructure at each of the three Major Mobility Hubs.

Hosted the Battery Electric Vehicle (BEV) – Mines to Mobility Conference to advance BEV economy opportunities in Northern Ontario.

Installed pedestrian and cyclist traffic signals on Ramsey Lake Road.

In 2021, Greater Sudbury became one of the first municipalities in Canada to add electric vehicles to its Paramedic Services fleet with the purchase of four Electric Vehicles (EV). The City now has twelve electric vehicles and charging stations in its fleet.

Carbon Sequestration

2021-2022 Accomplishments

Street Tree Policy
was developed.

10 millionth tree was planted and celebrated by the City's Regreening Program with the Prime Minister of Canada, the Right Honourable Justin Trudeau, and Dr. Jane Goodall.

200,000
planted tree and shrub seedlings.

Urban Forest Master Plan
was initiated.

Compost program and soil remediation project
was continued in our partnership with Vale.

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.

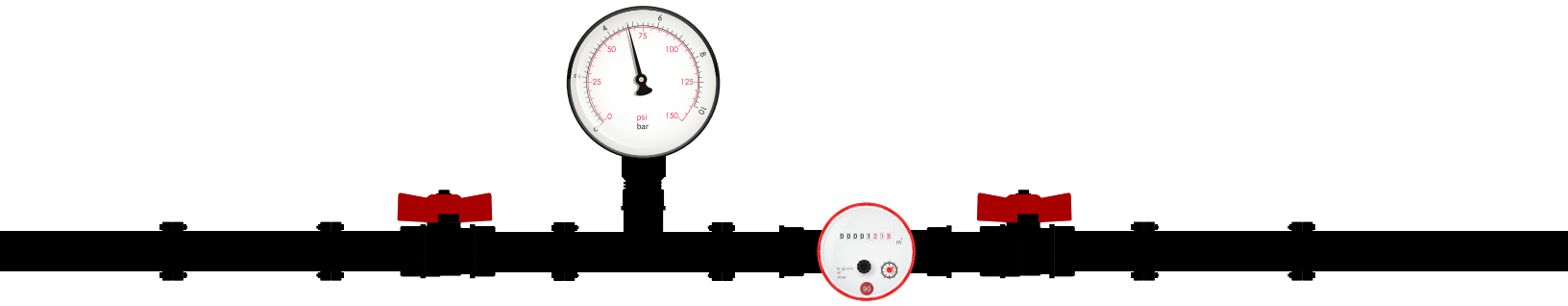
Local Clean Energy Generation

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.

2021-2022 Accomplishment

Completed the **expansion** of the landfill gas collection system at the Sudbury Landfill and Waste Diversion Site.

Continued to maintain two large solar panel roofs: Gerry McCrory Countryside Sports Complex Arena and Pioneer Manor.

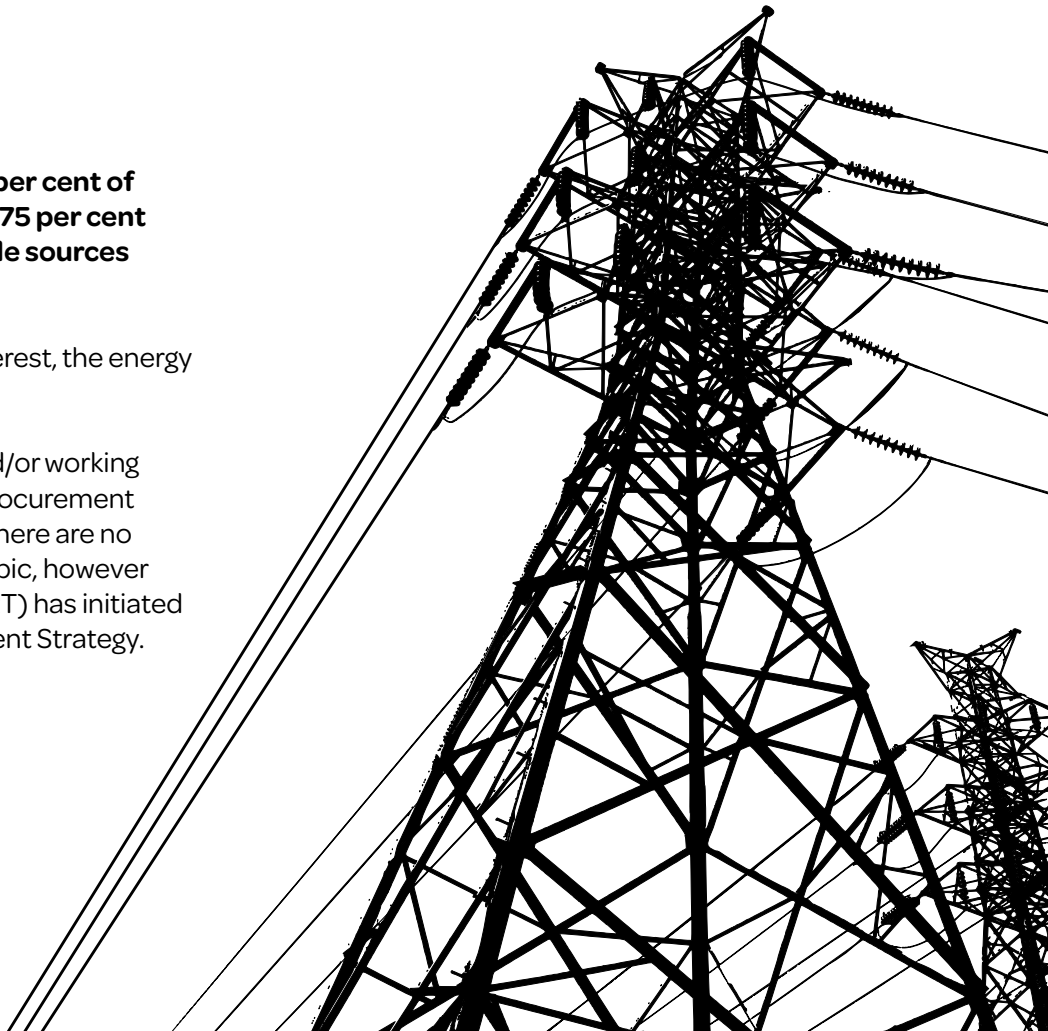


Low-Carbon Energy Procurement

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.

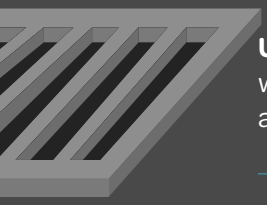


Built Environment

(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.

2021-2022 Accomplishments



Upgraded and/or replaced several culverts, watermains, stormwater treatment facilities, and sanitary sewer linings.

Upgraded various water and wastewater treatments plants, lagoons and wells.

Developed the 2023 to 2027 **Infrastructure Capital Program** for water, wastewater, bridges, drains, roads and transportation.

Completed inflow and infiltration reduction projects, including the Transient Pressure Study (for the water distribution system), mobile district flow monitoring studies, and public education campaigns.

Completed a **capital project** that lined 1.3 kilometres of watermain and 5.3 kilometres of sewer main to reduce the risk of underground failures and extend the life of infrastructure, while minimizing cost impact to traffic during construction.

Completed the **Ramsey Lake Subwatershed Study** and **Stormwater Master Plan**.

Upgraded legacy infrastructure at various wastewater lift stations from radio monitoring to cellular/fibre internet-based solutions.

Natural Environment

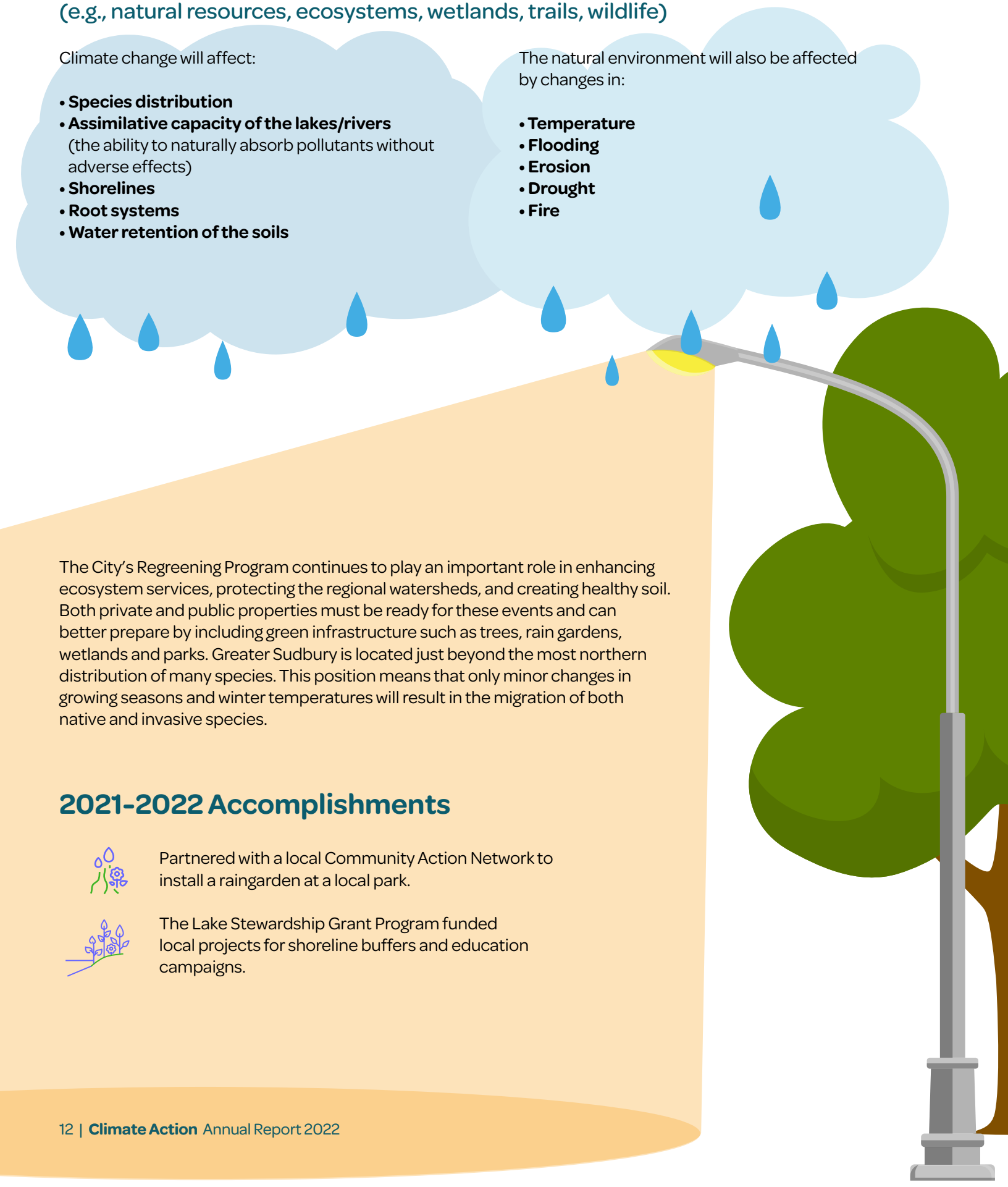
(e.g., natural resources, ecosystems, wetlands, trails, wildlife)

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 better prepare 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.

2021-2022 Accomplishments

Partnered with a local Community Action Network to install a raingarden at a local park.

The Lake Stewardship Grant Program funded local projects for shoreline buffers and education campaigns.

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.

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.

2021-2022 Accomplishment

Approved a Climate Justice Corner at the Main Branch 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, such as 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.

2021-2022 Accomplishments

Developed an enhanced engagement framework with local community partners and Indigenous service providers to develop and 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, including supporting province-wide initiatives celebrating Emergency Preparedness Week in May.

Expanded the Community Paramedic Program through extended funding from Ontario Health for 2022-2023 supporting Alternate Level of Care (ALC) for patients living in the community.

Performed critical preventative maintenance on the Wanapitei Water Treatment Plant clear well and intake to enhance treated water quality.

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.

2021-2022 Accomplishments

Created the Strong Neighbours Climate Change Resilience Project to help local groups implement neighbour-led climate adaptation actions.

Developed a Climate Action Resource Team (CART) for municipal coordination on climate action.

Partnered with Water First Education and Training to provide internship opportunities for Operators-in-Training from First Nations to obtain certification.

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-tern Care Services	Not yet initiated	In progress	Budgetary
Bed redevelopment at Pioneer Manor	Goal 4	Programs and Projects		$$$	Long-tern Care Services	Not yet initiated	In progress	Fully funded
Use of building automation	Goal 4	Programs and Projects		$	Assets and Fleet Services	Not yet initiated	In progress	
LED Light Retrofits at Parks Facilities		Programs and Projects		$	Leisure Services		In progress	
Greater Sudbury Outdoor Court Revitalization Project		Programs and Projects		$$	Leisure Services		In progress	

Lorraine Street Affrodable Housing Project with energy efficient housing	Goal 4	Programs and Projects		$$$	Housing Operations		In progress	Contractor delays
Sparks Street Affrodable Housing Project with energy efficient housing	Goal 2	Programs and Projects		$$$	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		$$	Transit Services		Planned	
Examine alternative energy sources for environmental services heavy duty vehicles		Policies, Guidelines and Standards		$	Environmental Services		Planned	Technological
Development of the Complete Streets Guidelines	Goal 8	Policies, Guidelines and Standards		$$	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 propertie	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 and support applications		Policies, Guidelines and Standards		Work Plan $	Economic Developement		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 Developement		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**