TOWN OF SMITHS FALLS

CLIMATE ACTION PLAN

Draft April 2026

Preparing for Change, Leading with Climate Action!

Letter from Mayor and Council

Dear Smiths Falls residents,

Climate change is already affecting Smiths Falls, altering local weather patterns and creating new challenges for the community. In recent years, the town has experienced more frequent extreme weather events, including heavy rainfall, severe storms, along with unusual seasonal shifts. These changes signal the need for proactive planning to strengthen local resilience. Looking ahead, rising average temperatures and increasingly volatile weather will continue to place pressure on our infrastructure, natural systems, and quality of life, emphasizing the importance of coordinated and sustained local action.

This Plan represents an important step toward advancing the visions and goals outlined in the Town's Strategic Plan. It reflects our ongoing commitment to exploring practical approaches to environmental sustainability while adapting to the challenges posed by a changing climate. Together, we can work toward a more resilient and sustainable future for Smiths Falls.

While the impact of one person or even one town on global greenhouse gas emissions may seem small, the collective actions of many individuals and communities hold the power to drive large-scale, meaningful change. Every effort, whether it's reducing energy use, supporting local sustainability initiatives, or advocating for greener policies, contributes to a broader movement that can shift societal norms and influence decision-makers at every level.

Proactive action needs to be taken toward mitigating GHG emissions and adapting to climate change. Canada has affirmed its commitment to ambitious climate targets, including reducing greenhouse gas emissions by 45 to 50% below 2005 levels by 2035 and achieving net-zero emissions by 2050.

The latest reports from the Intergovernmental Panel on Climate Change (IPCC) make it abundantly clear that we must drastically reduce global greenhouse gas emissions immediately to limit warming to 1.5 degrees Celsius and avoid catastrophic environmental and societal impacts. In an open letter urging immediate action, the IPCC states unequivocally: "NOW is the time for climate action. There is no more time for half-measures or complacency."

By collaborating, sharing knowledge, and supporting one another, we can create a more sustainable and resilient future for everyone. Now is the time to take action, understanding that our collective efforts will shape a healthier, more hopeful world for generations to come.

Sincerely,
Mayor Shawn Pankow

Acknowledgements

We would like to express our appreciation to all the individuals and organizations who participated in the development of the Town of Smiths Falls Climate Action Plan. Your contributions have been instrumental in shaping and improving the final Plan. Thank you for your valuable time and commitment to this endeavour.

Land Acknowledgements

The Town of Smiths Falls acknowledges the traditional, ancestral, and unceded territories of the Algonquin Anishinaabe Nation. We recognize and honour their stewardship of the land and their ongoing presence and contributions to our community.

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Executive Statement

Climate change is no longer a distant concern—it is a present-day reality for Smiths Falls. Our community is already experiencing the effects: more frequent storms, unpredictable seasons, and rising temperatures that threaten our infrastructure, natural environment, and overall quality of life. These challenges demand immediate and coordinated action, which is why the Town has developed the Smiths Falls Climate Action Plan, to confront the crisis head-on and protect our future.

This Plan charts a clear path to a resilient, low-carbon future, engaging all Smiths Falls residents. It equips Town staff and Council to integrate sustainability across municipal decisions, from infrastructure to programs, while urging businesses and residents to contribute actively. By tackling mitigation and adaptation, the Plan cuts GHG emissions and bolsters resilience to climate risks, fostering a healthier community.

At its core, the Climate Action Plan reflects a belief in the power of local action. Through nature-based solutions, energy efficiency, and inclusive community engagement, it channels the urgency of the climate crisis into hopeful, achievable steps. The choices we make today will shape the legacy we leave behind, and this Plan ensures that legacy is one of resilience, sustainability, and shared responsibility.

Guiding Principles

The Climate Action Plan is guided by eight foundational principles designed to establish a climate-conscious framework that directs our efforts to reduce emissions, enhance resilience, and promote the development of ambitious, inclusive, and actionable strategies.

These Guiding Principles serve as a consistent framework for evaluating all current and future proposals and initiatives. They were developed to align community efforts, uphold the Town's commitment to the Partners for Climate Protection framework, and translate complex climate challenges into practical actions that deliver lasting environmental and economic benefits.

The Guiding Principles are as follows:

1. Promote a culture of climate awareness and shared responsibility
2. Promote clean, renewable energy over fossil fuels with the intention of ultimately eliminating the use of fossil fuels
3. Conserve energy by improving the efficiency of both energy and water use
4. Support the development and adoption of renewable energy sources
5. Advance environmental improvement and innovation by prioritizing nature-based solutions
6. Reduce waste through sustainable resource use, reuse, and recycling
7. Engage diverse community partners in inclusive climate planning
8. Ensure funding, accessibility, and education for effective climate action

Community Baseline Emissions

Community baseline emissions represent the total greenhouse gas emissions produced within Smiths Falls before any new climate action is taken. This measurement captures the greenhouse gas emissions generated by residents and businesses within Smiths Falls, excluding emissions from Town-managed operations, to provide a clear picture of the community's environmental carbon footprint. The community emissions baseline offers a vital snapshot of where Smiths Falls currently stands in its climate journey, serving as the foundation for measuring future progress and shaping informed, effective policies.

Using 2021 as the baseline year, Smiths Falls emitted approximately **104,742 tonnes**[1] of CO_2 equivalent, representing the community's Scope 1 and Scope 2 emissions from building energy use, on-road transportation, electricity consumption, solid waste, and wastewater. This PCP-aligned total is used for Milestone 1 and forms the basis for the Town's community emissions-reduction targets.

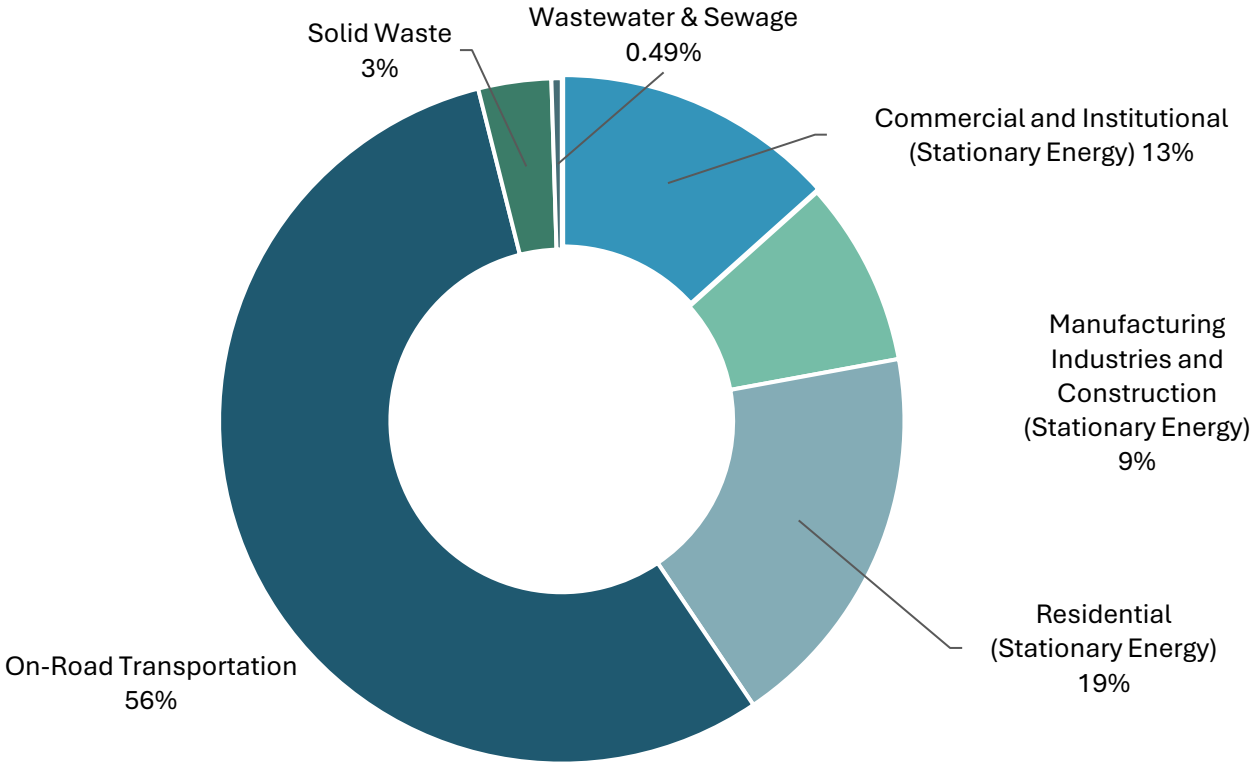


Figure 1 2021 community baseline emissions profile

Most community emissions come from on-road transportation (56%) and stationary energy use in residential, commercial, and institutional buildings (about 40%). The baseline emissions profile in Figure 1 highlights these high-emitting sectors and helps identify where the greatest reductions can be achieved. By focusing on transportation and building energy use—the largest drivers of community emissions—Smiths Falls can pursue measures that deliver the most meaningful climate benefits.

[1] Community emissions total 104,742 tCO_2e; when combined with corporate emissions (1,738 tCO_2e) and supplementary inventory categories, this results in a full-sector total of 106,480 tCO_2e, ensuring comprehensive, PCP-aligned reporting

Community Sustainability Recommendations

The Community Climate Action Plan outlines climate recommendations across five key areas, reflecting our shared commitment to addressing climate change. These climate actions guide the Town's efforts while highlighting opportunities for active community participation.

With the support and involvement of residents, businesses, and organizations, the Plan identifies actions to reduce greenhouse gas emissions and strengthen resilience to the impacts of a changing climate. It focuses on mitigating these impacts wherever possible and advancing adaptation measures that enhance long-term climate resilience.

Transportation

Recommendations in this category focus on reducing transportation emissions by cutting fossil fuel use and encouraging cleaner travel options.

Actions include promoting active transportation such as walking and cycling, supporting the development of public transit infrastructure, and creating opportunities that make sustainable travel easier and more accessible for everyone.

Buildings & Development

Recommendations in this category focus on reducing greenhouse gas emissions from buildings and facilities, improving the climate resilience of our housing stock, and promoting the adoption of green building standards within the development community.

These actions aim to support sustainable construction and renovation practices that reduce environmental impacts while helping homes and buildings better withstand a changing climate.

Waste Management

Recommendations in this category are focused on reducing greenhouse gas emissions from solid waste and wastewater.

Actions include promoting landfill diversion strategies, improving waste management practices, and reducing the environmental impact of waste to help shrink the community's overall carbon footprint.

Natural Asset Management

Recommendations in this category focus on improving and expanding the community's green spaces and creating opportunities to enhance the Town's tree canopy through thoughtful mitigation and adaptation.

These initiatives aim to strengthen the natural environment, increase resilience to climate impacts, and provide valuable benefits to residents by preserving and growing green areas throughout Smiths Falls.

Education & Governance

Recommendations within this category focus on improving the community's access to resources and information to better implement climate change mitigation and adaptation strategies and actions.

By equipping residents with timely, relevant tools and knowledge, the Town strengthens community resilience, empowering individuals and households to make informed decisions, reduce their carbon footprint, and prepare more effectively for climate-related emergencies.

Corporate Baseline Emissions

Within the Corporate Action Plan, the Town has established recommendations divided into five key sections. These sectors**: Municipal Buildings & Facilities, Municipal Fleet & Equipment, Streetlighting, Wastewater, and Water Infrastructure,** form the core of the Town's operational emissions profile, as shown in fig. 2 below.

Their relative size reflects the GHG produced from their services, with the wastewater treatment facility producing the largest shares due to heating, pumping, and treatment demands, while streetlighting remain low following efficiency upgrades. Although corporate emissions represent only 1.63%—1,738 tCO_2e out of Smiths Falls' total community emissions of 106,480 tCO_2e—they fall entirely within municipal control, allowing the Town to model leadership, implement direct reductions, and demonstrate how operational improvements can meaningfully contribute to broader climate goals

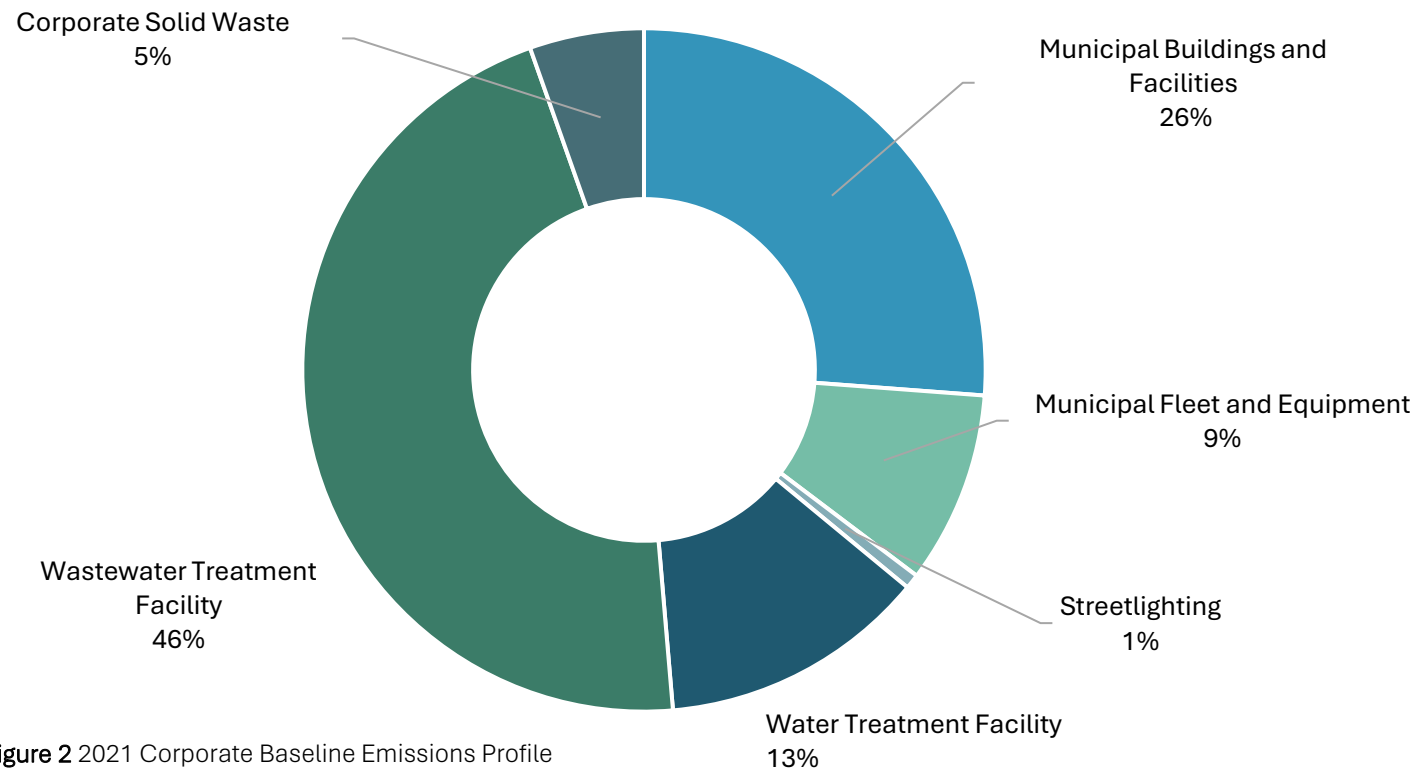


Figure 2 2021 Corporate Baseline Emissions Profile

Corporate Sustainability Recommendations

The Corporate Sustainability Recommendations build on the Town's operational emissions profile by identifying targeted opportunities to modernize municipal services, strengthen resilience, and advance low-carbon performance across Town-owned assets.

These actions focus on practical improvements within municipal facilities, fleet operations, waste practices, natural asset management, and governance systems—areas where the Town has direct authority to influence outcomes. By aligning daily operations with long-term climate objectives, the recommendations ensure that municipal service delivery becomes more efficient, resilient, and responsive to evolving climate conditions.

Municipal Fleet & Equipment

Recommendations in this category focus on reducing greenhouse gas emissions from fossil fuel use by transitioning to electric vehicles and upgrading technology within the Town's fleet.

By adopting vehicle electrification and modernizing equipment, the Town aims to lower its environmental impact and support cleaner, more efficient municipal operations.

Municipal Buildings & Facilities

Recommendations in this category centre on making municipal buildings and facilities more sustainable and energy-efficient. This includes using renewable energy sources and carrying out building retrofits that reduce energy consumption.

By prioritizing sustainable design and operational efficiency, the Town can reduce its environmental impact by integrating green building standards with other climate-conscious practices in the development and management of municipal assets.

Corporate Waste Management

Recommendations in this category focus on adopting green waste management practices and prioritizing sustainable materials. These actions aim to reduce consumption, divert waste from landfills, and shrink the Town's corporate environmental footprint through responsible management and resource use.

Natural Heritage

Recommendations in this category focus on enhancing the natural heritage features found on Town-owned lands and integrating green building standards alongside other climate-conscious practices in the development and management of municipal assets.

These actions support sustainable growth and help ensure that our infrastructure and facilities are designed to meet environmental challenges effectively.

Municipal Leadership & Governance

Recommendations in this category focus on embedding a climate-conscious perspective throughout the Town's leadership and governance. They aim to make environmental stewardship a core part of how decisions are made and how the municipality operates.

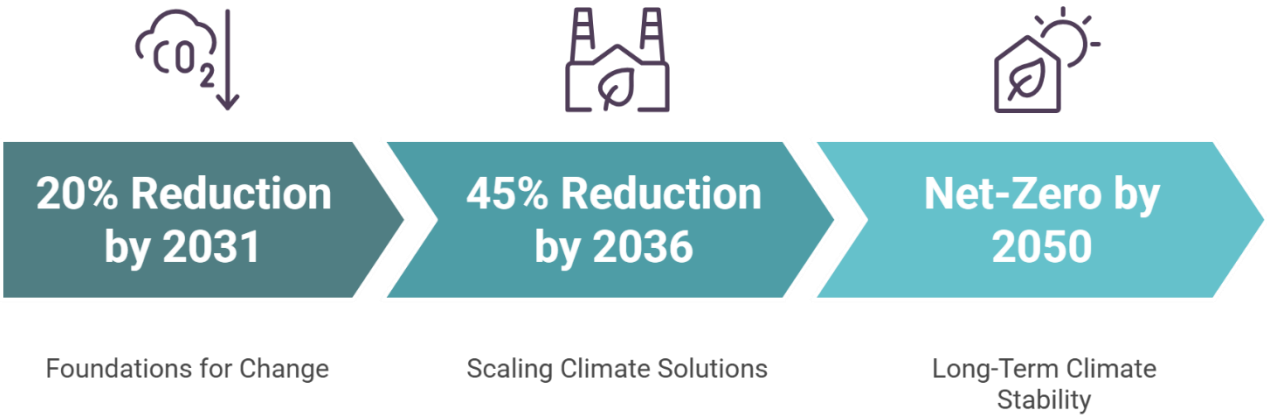
The goal of reducing greenhouse gas emissions and advancing this plan is to guide Smiths Falls toward a low-carbon future while respecting the needs of our community. Achieving this means making reductions in ways that are sustainable and allow our town to adapt thoughtfully to any changes that come from implementing new initiatives.

The corporate recommendations within this plan support the broader community goals by focusing on actions within the Town's own operations. However, the success of the community goals depends on the commitment and participation of all residents, businesses, and organizations alike. Together, through shared effort and buy-in, Smiths Falls can move confidently toward a cleaner, more resilient future.

Emission Reduction Targets

Emission reduction targets are measurable goals that guide how much greenhouse gas emissions Smiths Falls aims to cut over time, forming a core part of climate mitigation efforts focused on reducing emissions from transportation, buildings, and waste. These targets, aligned with the PCP 5-step framework and informed by the community's 2021 baseline emissions inventory, help shape the Town's climate strategy and track progress.

While adaptation recommendations, such as preparing for extreme weather or protecting natural assets, do not directly reduce emissions and aren't reflected in these targets, they are fully integrated into the Climate Action Plan. Together, mitigation and adaptation work hand-in-hand to build a resilient, low-carbon future. Smiths Falls Council has committed to reducing emissions **by 20% from 2021 levels by 2031, 45% by 2036, and reaching net-zero by 2050,** with regular reviews to ensure these goals remain ambitious and achievable as technologies and community capacity evolve.



Implementation

This Climate Action Plan outlines climate actions designed to guide Smiths Falls on a practical path toward a more sustainable future. It balances adaptation strategies, which help the community respond to local climate impacts and risks, with mitigation efforts aimed at lowering greenhouse gas emissions for lasting climate benefits. Working together with community partners, local organizations, and residents, the Town will advance and implement the recommendations outlined in this Plan. The Town will take the lead on corporate initiatives within its own operations while also supporting and helping to coordinate community-led climate actions. Combined with provincial and federal initiatives, this collaborative approach ensures that Smiths Falls can adapt, innovate, and strengthen climate resilience as new opportunities and challenges emerge.

The Plan's implementation represents the Town's next step in reducing community-wide emissions by establishing a clear process for periodic updates every five years, supported by annual emissions reporting and climate budgeting. It emphasizes securing external funding by aligning municipal operations with priority climate actions, while also strengthening partnerships with community groups and building municipal capacity through education and a dedicated environmental coordinator role.

With each new Council term, the Climate Action Plan is revisited in the year following the election to ensure elected officials remain engaged with its goals and informed about evolving climate risks and opportunities. This regular review helps maintain long-term commitment, ensures continuity across political cycles, and allows priorities to be realigned as needed—reinforcing the Town's sustained progress toward climate resilience and emissions-reduction goals

The Climate Action Plan will help guide the Town's efforts to integrate climate considerations into future municipal decisions and actions. Its structured review process will ensure the Plan remains responsive to evolving community needs, emerging funding opportunities, and changing climate conditions.

By working within this framework, alongside other municipal strategies, community partnerships, and local initiatives, the Town will be well positioned to advance climate-resilience efforts, achieve emissions-reduction goals, and strengthen long-term sustainability. Together, these commitments will lay the foundation for a more resilient, innovative, and sustainable future for Smiths Falls, and will affirm the Town's ongoing determination to lead by example as it continues to drive meaningful climate action.

Goal Prioritization

The Climate Action Plan uses a clear Cost/Impact prioritization framework to help the Town focus on the recommendations that deliver the greatest climate benefit for the resources required. By assessing each recommendation's expected impact on emissions reduction and climate resilience alongside its relative cost, the Plan highlights where early action can achieve meaningful progress and where larger, longer-term investments are needed. This ensures decision-making remains transparent, balanced, and aligned with community needs—supporting practical, phased implementation over time.

Monitoring and Reporting

The Climate Action Plan establishes a comprehensive framework to guide the Town's transition toward a resilient, low-carbon future. Through structured monitoring and transparent reporting, the Plan ensures accountability, tracks progress and enables continuous improvement.

The Plan aims to integrate climate actions across municipal operations and community initiatives, fostering cross-departmental collaboration and aligning efforts with evolving local needs. Using a robust system of updated emissions inventories, performance indicators, and governance structures, the Plan supports evidence-based decision-making.

To operationalize this framework, we will use the Plan to institutionalize annual climate data reporting to Council, integrate climate actions into departmental work plans, and promote public engagement through forums and transparent communication. The Climate Protection Working Group will play a central role in outreach and advisory efforts, helping to build trust, broaden support, and encourage meaningful community participation. Together, these measures will ensure that climate action remains inclusive, adaptive, and aligned with the Town's long-term environmental and social objectives.

Photo Credit 1 Alex Brown

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List of Acronyms

AFOLU	Agriculture, Forestry and Other Land Uses
BAU	Business-As-Usual
BESS	Battery Energy Storage System
CAP	Climate Action Plan
CO2e	Carbon Dioxide equivalent
CPWG	Climate Protection Working Group
CHVAA	Climate Change and Health Vulnerability and Adaptation Assessment
EV	Electric Vehicle
FCM	Federation of Canadian Municipalities
GMF	Green Municipal Fund
GHG	Greenhouse Gas
GJ	Gigajoule
ICLEI	International Council for Local Environmental Initiatives
IPPU	Industrial Processes and Product Use
LLCA	Local Leadership for Climate Adaptation
LID	Low Impact Development
OVIN	Ontario Vehicle Innovation Network
PCP	Partners of Climate Protection
RCP	Representative Concentration Pathway
REAL	Rideau Environmental Action League
SSP	Shared Socioeconomic Pathways
TMP	Transportation Master Plan

CHAPTER 1

INTRODUCTION & OVERVIEW

Our Town, Our Climate: Starting the Journey

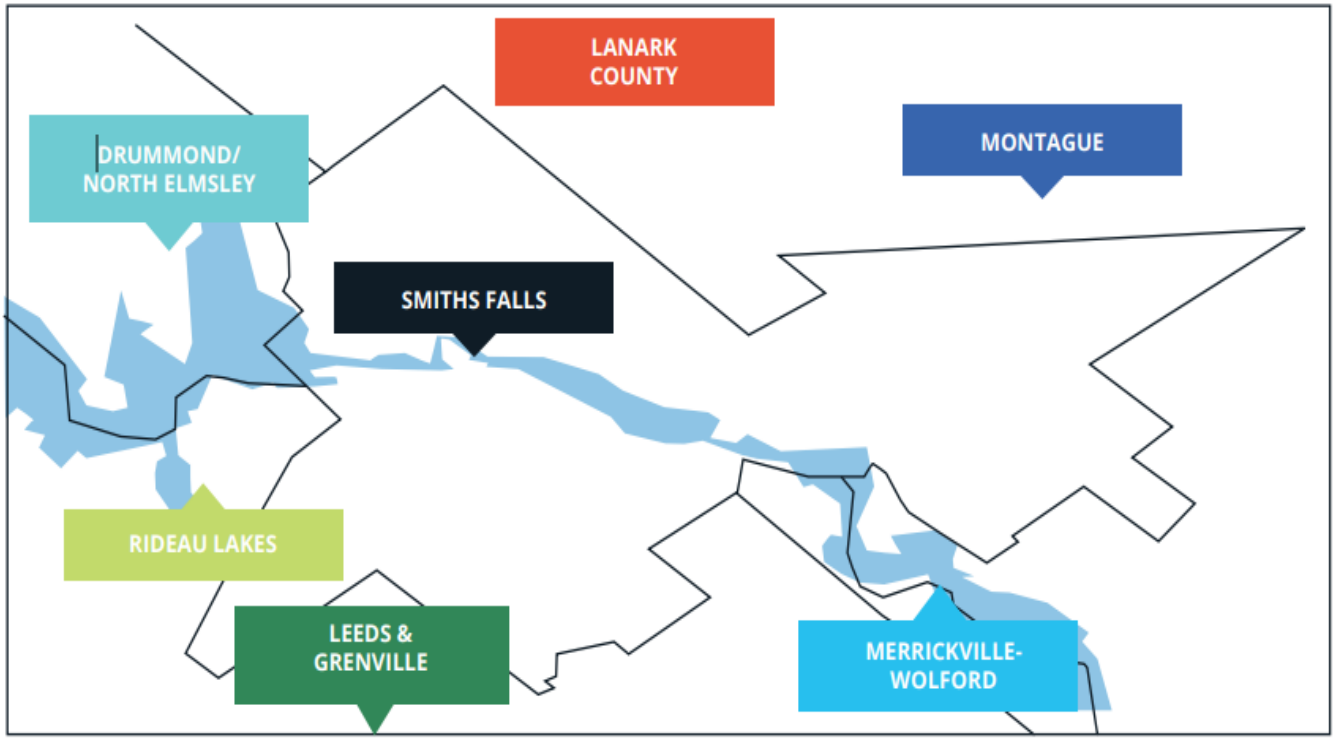
Introduction & Overview

Smiths Falls has a population of 9,254 people, as per the 2021 Census. The town is located between Kingston and Ottawa on the Rideau Canal, which is one of only two UNESCO World Heritage sites in Ontario. As a single-tier municipality, Smiths Falls is situated within, but administratively separate from, the County of Lanark.

Smiths Falls is characterized by its location within the Rideau Canal corridor, which forms the spine of the town's geographical and ecological landscape. Many of the town's parks and open spaces are situated along the Rideau River, a key natural feature that, together with surrounding wetlands and green spaces, supports local biodiversity. This unique setting provides an essential habitat for wildlife and offers abundant opportunities for outdoor recreation, tourism, and water-based activities.

Smiths Falls' growth is closely tied to its strategic location along the Rideau River. When the Rideau Canal was constructed in the 1830s, it connected the town to major trade routes and helped drive its early development. The arrival of railways in the mid-to-late 19th century, including the Canadian Pacific Railway and later Canadian National Railway lines, further established the town as a vital transportation hub in Eastern Ontario.

This transportation advantage supported industrial growth with notable employers such as Frost & Wood, the Canadian Locomotive Company, and Hershey's, shaping Smiths Falls into a resilient industrial and commercial centre. The town's rich heritage and transportation infrastructure continue to play a defining role in its identity and regional importance.

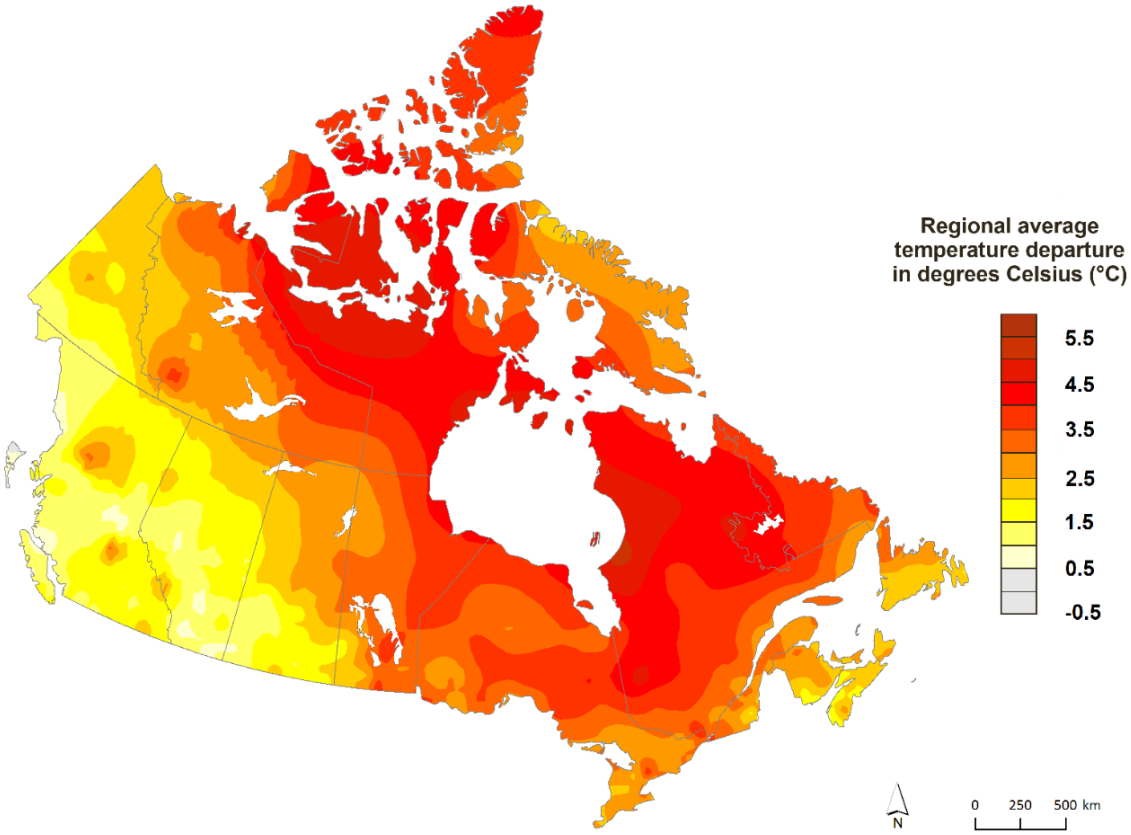


What is Climate Change?

Natural climate change is a global shift in the Earth's climate composition that takes place over a long period of time. It is a natural, gradual process that occurs over thousands, or even millions of years. In contrast, anthropogenic (human-caused) climate change takes place rapidly. This rapid increase in greenhouse gas emissions is driven by the burning fossil fuels through everyday activities such as driving, industrial processes like mining and manufacturing, and the combustion of fossil fuels to produce electricity.

Greenhouse gases, such as carbon dioxide, get their name because they trap heat as a greenhouse does. In this case, they trap heat within the atmosphere. In some cases, as the global temperature increases, more greenhouse gases are released as a result. This, in turn, causes the global temperature to increase. These "positive feedback loops" are dangerous as they can cause the effects of climate change to become unsustainable.

Climate is different from weather, which is the daily changes in temperature, precipitation, and cloud coverage. Climate is the long-term, generalized trend, whereas weather is the specific daily outcome. While the impact on the level of global GHG emissions one person, or even one town, can make is small, collectively there is large-scale change.



(Environment and Climate Change Canada, n.d.)

Figure 3 Canada experienced widespread warmer-than-normal temperatures in 2024, with northern regions—Nunavut, Quebec, and Ontario—exceeding +3°C above the 1961–1990 average. Smiths Falls also saw above-average temperatures in 2024, reflecting the broader warming trend across Ontario.

What Radiative Forcing Tells Us about Climate Change

Radiative forcing refers to the difference between the amount of solar energy the Earth absorbs and the amount it releases back into space. When these amounts are balanced, the planet's temperature remains stable. However, greenhouse gases trap heat in the atmosphere, reducing the energy that escapes and causing the Earth's temperature to rise. Even small changes in radiative forcing can lead to significant warming over time, driving climate change and intensifying its impacts.

To help communities understand what the future might hold, two key climate scenarios, known as Representative Concentration Pathways (RCPs), are commonly used to model different levels of greenhouse gas emissions and their long-term effects. RCP 4.5 represents a future where emissions rise until mid-century and then stabilize, resulting in moderate climate impacts. RCP 8.5, on the other hand, assumes emissions continue to grow unchecked, leading to much higher radiative forcing and severe global warming by 2100. These scenarios illustrate the consequences of our choices: RCP 4.5 reflects meaningful mitigation efforts, whereas RCP 8.5 highlights the risks of inaction.

Currently, scientific evidence and emission trends suggest that RCP4.5 is the more likely scenario, as it accounts for ongoing and planned global efforts to reduce emissions. While RCP 8.5 represents a high-emission future with severe warming, it is increasingly viewed as less probable given advances in clean energy and climate policies. Understanding these pathways empowers communities and decision-makers by highlighting how our actions today can influence which future climate reality we face and the extent of climate impacts to prepare for.

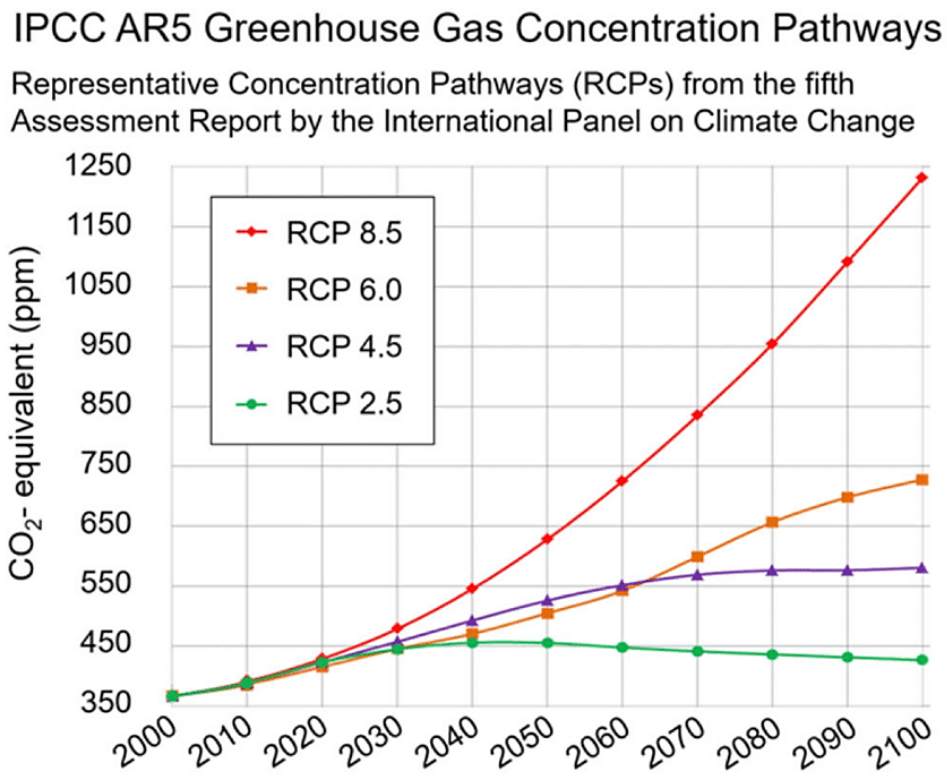


Figure 4. These RCPs represent different greenhouse gas concentration trajectories developed for the IPCC's Fifth Assessment Report (AR5), ranging from strong mitigation (RCP 2.6) to a high-emissions scenario (RCP 8.5), illustrating the wide range of potential climate futures depending on global emission pathways.

(Stewart et al., 2020)

Understanding these pathways is essential for planning. They show how the level of emissions we produce today directly shapes the severity of climate change tomorrow. Radiative forcing provides a clear measure of how our actions affect the climate, reinforcing the urgency of reducing emissions to protect our health, environment, and economy. These scenarios highlight why the Smiths Falls Climate Action Plan must be bold, proactive, and rooted in both mitigation and adaptation strategies to ensure a safe and sustainable future.

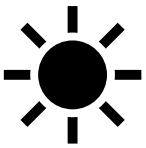
Climate Change in Smiths Falls

Understanding Representative Concentration Pathways (RCPs) also helps set the stage for how Shared Socioeconomic Pathways (SSPs) complement and expand these climate scenarios. While RCPs describe greenhouse gas concentration outcomes (radiative forcing levels), SSPs provide a broader context by outlining different potential futures for society's development, including population growth, economic trends, technology, and policy. Together, they offer a more comprehensive view of how social and economic factors may influence emissions and climate impacts.

The SSP1-2.6 scenario specifically combines a sustainability-focused socioeconomic pathway (SSP1) with an ambitious mitigation target limiting radiative forcing to about 2.6 watts per square meter by 2100, roughly aligning with the goal of keeping global warming below 2°c. It envisions a world where countries prioritize green technologies, equity, and environmental stewardship, leading to significant emission reductions. For Smiths Falls, Climate Data.ca uses this scenario to project outcomes such as warmer temperatures, in-creased frequency of hot days, shifts in precipitation, and longer growing seasons, helping the community plan proactively for a more resilient future.

Under a high-emissions scenario, the town is likely to experience a marked increase in very hot days, with temperatures rising above 30°C more frequently, along with heavier and more intense rainfall events that increase the risk of flooding. Winters are projected to become warmer with fewer cold days, leading to shifts in the seasonal patterns that have long shaped life here.

Based on projections from the Canada Climate Atlas, which compare conditions from the 1976–2005 baseline period to expected changes for 2021–2050 and illustrate how future climate patterns may shift relative to historical norms, Smiths Falls is expected to experience the following:



Heatwaves are projected to last longer—rising from 3.4 to 5.5 days—and occur more often, increasing from 1.7 to 4.4 events. This means future heatwaves will be both longer and more frequent, creating more intense extreme-heat conditions that communities must be ready for.

Freezing Degree Days (FDD) indicate how long and how intensely temperatures stay below 0°C, so a drop in FDD signals shorter, milder winters. Projections show FDD declining from 897.8 to 645.5—a reduction of 252.3—meaning Smiths Falls will see significantly shorter and less severe winter freezing periods in the decades ahead.

The number of heavy-precipitation days (20 mm or more) is projected to rise from 6.0 to 7.1 days—an increase of 1.1 days—indicating a greater likelihood of more frequent heavy rainfall events in the future.

The annual mean temperature is projected to rise from 6.5°C to 8.7°C—a 2.1°C increase—meaning Smiths Falls will experience warmer conditions year-round, with shifted seasonal patterns, milder winters, and a higher risk of heat-related impacts in summer.

Public Health Impacts of Climate Change

Climate change poses a growing range of direct and indirect health risks to Smiths Falls and the surrounding region. The South East Health Unit's *Climate Change and Health Vulnerability and Adaptation Assessment (CCHVAA)* identify several climate-sensitive health pathways that are especially relevant to Eastern Ontario communities, including Smiths Falls.

These pathways include increasing illness, injury, and mortality associated with extreme heat and other extreme weather events; heightened risks of flooding-related injury and contamination; deteriorating outdoor and indoor air quality linked to wildfire smoke and ground-level ozone; increased exposure to ultraviolet radiation; and the expanding spread of vector-borne diseases such as Lyme disease and West Nile virus. The CCHVAA concludes that these risks are already present in the region and are expected to intensify as climate change increases the frequency, intensity, and duration of extreme weather events.

In addition to these direct health impacts, climate change contributes to a range of indirect and longer-term health challenges. The CCHVAA highlights psychosocial and mental-health effects associated with repeated exposure to climate-related hazards, including stress, anxiety, depression, and trauma related to flooding, property damage, service disruptions, and displacement. Climate change also affects the safety, availability, and reliability of local food and water systems through impacts such as extreme precipitation, harmful algal blooms, drought, and well-water contamination, with implications for nutrition, food security, and overall community well-being.

The CCHVAA emphasizes that climate-related health impacts are not experienced equally across the population. Certain groups in the region are disproportionately vulnerable, including older adults, infants and young children, people with chronic health conditions, outdoor workers, rural residents reliant on private wells, low-income households, and individuals facing social or economic barriers

to housing, transportation, and healthcare. Structural inequities can increase exposure to climate hazards while limiting the ability to prepare for, respond to, and recover from climate-related impacts. These compounding vulnerabilities heighten the local health risks associated with extreme heat, poor air quality, flooding, and disease-carrying vectors, underscoring the importance of proactive, equity-focused adaptation planning to protect community health in Smiths Falls.

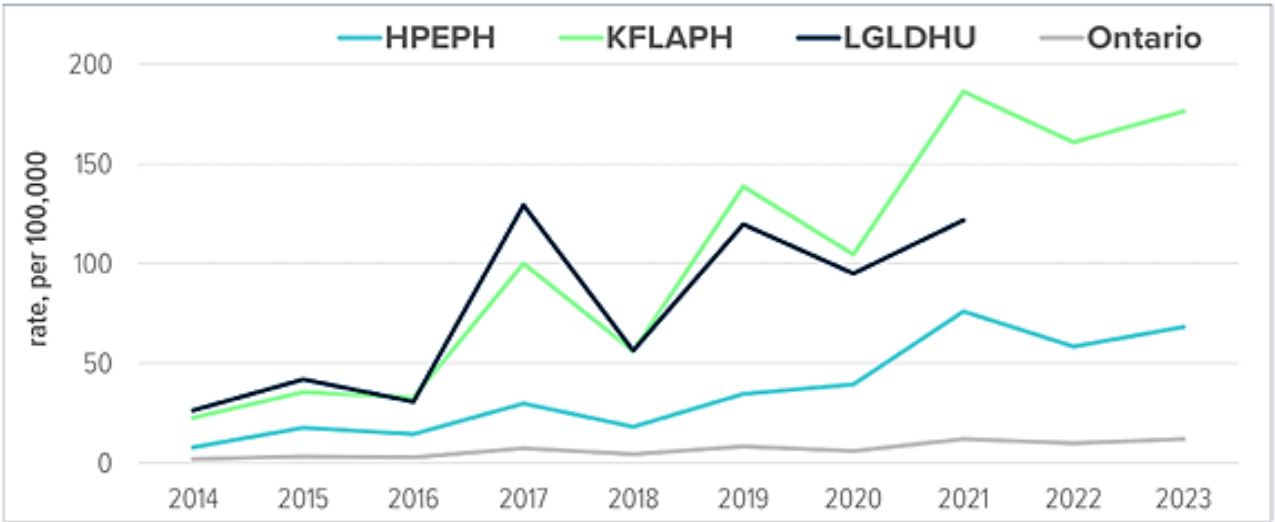


Figure 5 Reported Lyme disease rates for Hastings Prince Edward Public Health (HPEPH) shown in blue, Kingston, Frontenac and Lennox & Addington Public Health (KFLAPH) shown in green, Leeds, Grenville and Lanark District Health Unit (LGLDHU) shown in dark blue, and the Ontario average shown in grey.

Source: South East Health Unit, 2025
Note: Reporting of Lyme disease cases by the Leeds, Grenville and Lanark District Health Unit ended in 2021; rates for 2022 and 2023 are therefore not available.

Big Steps to Reduce Emissions and Adapt to Climate Change

Even with moderate emissions like those in the SSP1-2.6 scenario, Smiths Falls will still face notable climate changes, including more hot days, heavier rainfall, and warmer winters. These changes will develop gradually but present real challenges to health, safety, and the local environment. Understanding these trends equips the community to better prepare and adapt, building resilience in the face of these shifts.

It is crucial for us to (1) **actively reduce emissions**; and (2) **adopt adaptive strategies** to manage these impacts effectively. By doing so, the community can strengthen its ability to cope with upcoming climate risks, protecting both people and the natural environment. Such proactive action helps ensure a healthier, more sustainable future for current and future generations, acknowledging that even modest warming requires urgent attention and climate-conscious planning.

Municipal Responsibility – Commitment to Climate Change

Municipalities like Smiths Falls contribute a significant portion of Canada's greenhouse gas emissions, making local action essential in the broader effort to address climate change. Federation of Canadian Municipalities (FCM)[2] states that municipalities are responsible for nearly 44% of all greenhouse gas emissions in Canada. This means that reducing emissions nationwide requires municipalities to take meaningful action at the local level. By implementing proactive climate policies and action plans, the Town has the direct ability to reduce its own emissions and lead by example.

While federal, provincial, and regional governments have established policies to reduce greenhouse gas emissions, local governments also play a key role. By developing and adopting a Climate Action Plan (CAP), Smiths Falls shows its commitment to corporate responsibility and aligns its goals with higher-level emission reduction targets. The CAP sets out Smiths Falls' plans and commitments to work towards these shared objectives, serving as a positive example for other communities to follow.

Partners for Climate Protection Program

Partners for Climate Protection (PCP) is a program created by the Federation of Canadian Municipalities (FCM) and ICLEI – Local Governments for Sustainability. The PCP program is a five-step framework that is designed to help municipalities reduce their greenhouse gas emissions.

Each of the steps has a relevant milestone that needs to be completed, the five milestones being:

(1) Creating a baseline emissions inventory.
(2) Setting emission reduction targets.
(3) **Developing a climate action plan (we are here).**
(4) Implementing a climate action plan.
(5) Monitoring progress and reporting results towards reducing emissions.

This plan integrates both the Corporate Climate Action Plan and the Community Climate Action Plan into a unified framework. It represents the Town's submission for PCP Milestone Three, setting out how Smiths Falls intends to achieve its greenhouse gas emissions reduction target within a ten-year horizon. The actions outlined are the result of community engagement and collaborative input from community partners gathered throughout the planning process, ensuring that the plan reflects local priorities and shared climate recommendations.

PCP 5 Step Framework Approval Requirements

Milestone 1: Creating a Baseline Emissions Inventory [Completed 2024]

- A summary of community and corporate inventory that follows the PCP Protocol
- Emission intensity values or coefficient values
- Summary of data sources

[2] ICLEI - Local Governments for Sustainability & Federation of Canadian Municipalities. (2018). Partners for Climate Protection: National Measures Report 2018. ICLEI - Local Governments for Sustainability

- Description of methodological assumptions, omissions, and other relevant data
- A 10-year business-as-usual emissions forecast

Milestone 2: Setting Emission Reduction Targets [Completed 2025]

- Description of targets, including baseline year, target year and percentage change from baseline year
- A council resolution that adopts the targets set, including the baseline year, target year and percentage change from baseline year

Milestone 3: Developing a Climate Action Plan [Completed; pending FCM/PCP review]

- Description of the activities that will help us achieve our target reductions
- Description of how the public or internal community partners participated in developing the plan
- Description of the costs and/or funding sources
- Names of the municipal department(s) and/or organization(s) responsible for the plan and the actions outlined in it

Milestone 4: Implementing a Climate Action Plan

- Description of the degree to which measures in our local action plan have been implemented (including implementation partners, financing mechanisms, and variations from the original plan).
- The implementation schedule

Milestone 5: Monitoring Progress, and Reporting Results Towards Reducing Emissions

- An updated corporate or community inventory for the current (or near current) year
- Quantification of the GHG reduction impact of each measure outlined in our local action plan
- Report on how community partners s and decision makers have been included throughout our milestone process

(PCP, 2025).

Methodology

Development of the Climate Action Plan

The Climate Action Plan was developed through consultation with the community, working alongside community partners and supported by expert technical analysis of climate data and greenhouse gas emissions calculations. The Town's Climate Protection Working Group (CPWG) played an essential role in guiding the process, shaping the plan's ambitious goals for both reducing emissions and incorporating adaptation measures. Their leadership ensured that the plan not only sets a clear path to cut emissions but also strengthens the community's resilience to current and future climate impacts.

Milestone 1 – GHG Baseline Emissions Inventory

The GHG baseline emissions inventory developed for PCP Milestone 1 and updated by Greenscale Inc. provides a robust foundation for climate planning in Smiths Falls, capturing both community-wide and corporate emissions across key sectors, including transportation, buildings, and municipal infrastructure. By using direct energy consumption data from fuel providers, including gasoline, diesel, natural gas, and electricity, the inventory ensures accurate, locally grounded estimates that support the evaluation of mitigation-related goals. While adaptation measures are not directly reflected in the emissions baseline, they remain essential to the Town's overall climate strategy, helping build resilience to future impacts and complementing emissions reduction efforts through planning, infrastructure, and community preparedness.

Climate Action Recommendation Development

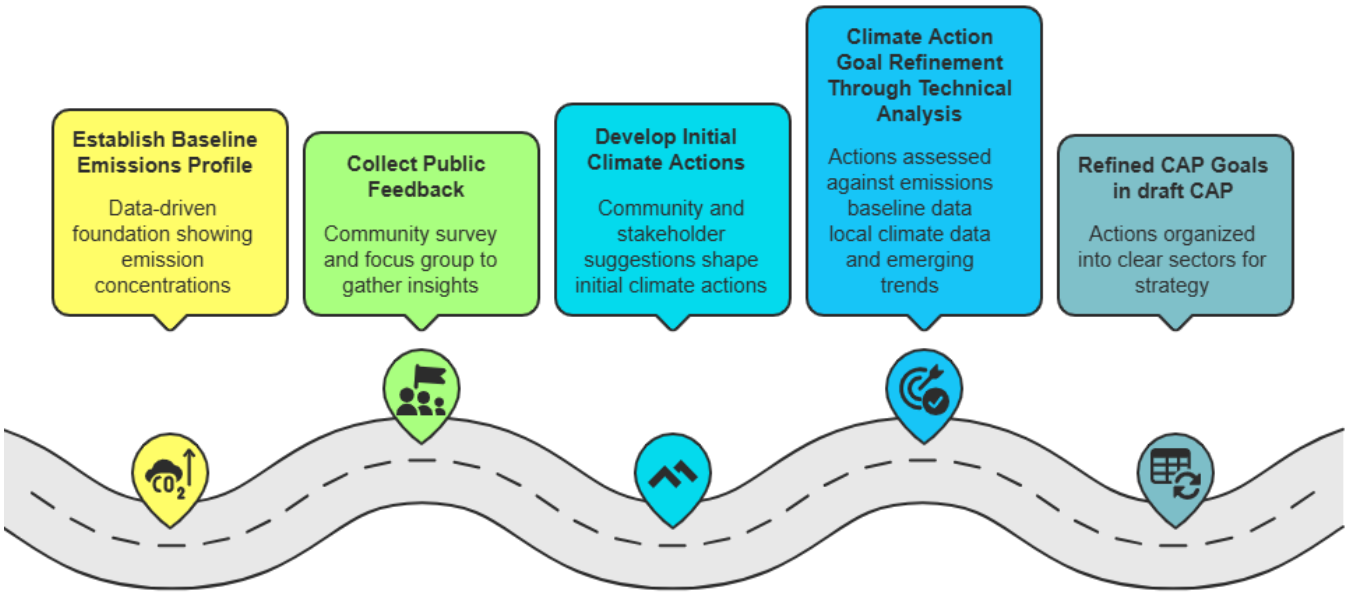
Climate Action Recommendation development for Smiths Falls' Climate Action Plan was informed by a feasibility analysis completed by Greenscale Inc., which focused specifically on mitigation strategies grounded in the Town's updated GHG inventory. This analysis drew on a range of inputs, including the Town's strategic plan and policy framework, climate science projections, and statistical census data, to ensure that proposed targets were both technically sound and locally achievable.

While Greenscale's scope centred on mitigation, adaptation recommendations were also incorporated by Town staff to create a more holistic and resilient approach to climate change, recognizing the importance of preparing for future impacts alongside reducing emissions.

Community Voices – Public Engagement

The emissions baseline data and the participation of community members and community partners played a central role in shaping climate action development for Smiths Falls. The baseline inventory offered a clear, data driven understanding of where emissions are concentrated, particularly in transportation and buildings, allowing the Town to focus on sectors with the greatest potential for meaningful reductions. Complementing this technical foundation, a public engagement survey gathered approximately 100 responses, with community priorities and suggestions directly influencing the selection of climate recommendations. Additional engagement through a focus group in August 2025 and a subsequent visioning session further refined the direction of the plan, ensuring that the emerging actions reflected local values, practical opportunities, and the lived experiences of residents.

Public input also helped identify areas of public interest, and several specific actions that were added for consideration in the early stages of planning. Residents expressed strong interest in a municipal green waste bin program to divert organics from landfill and reduce methane emissions, and many supported exploring on-demand transit options that could expand mobility while lowering transportation emissions. Interest was also voiced in municipal energy retrofit initiatives, reflecting a community desire to see the Town lead by example in improving energy efficiency. While feasibility and implementation considerations will be assessed in later phases, this early input ensured that the proposed climate actions were shaped not only by emissions data but also by the community's aspirations for a more sustainable future.



CHAPTER 2

Climate Action Plan

Community and Corporate Emissions Snapshot

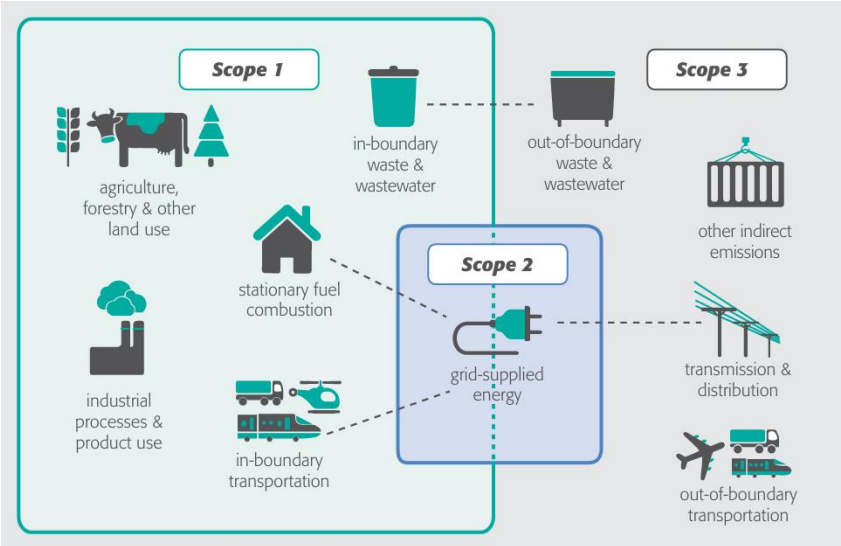
Climate Action Plan Overview

This Climate Action Plan sets a clear direction for how Smiths Falls will reduce greenhouse gas emissions and strengthen resilience to a changing climate. It begins by establishing a shared understanding of our emissions sources, across both the community and municipal operations, and what is projected to occur if no further action is taken. This baseline picture provides the evidence needed to set realistic targets, prioritize the most effective actions, and track progress over time. By bringing community and corporate emissions into one framework, the Plan reflects the shared responsibility of residents, businesses, and the Town to work together toward a low-carbon, climate-ready future for Smiths Falls.

Community Baseline Emissions Profile

The Community Greenhouse Gas (GHG) Inventory is a core building block of the Climate Action Plan and serves as the backbone of the community portion of the CAP. It establishes the community baseline emissions profile by capturing Scope 1 and Scope 2 emissions generated within Smiths Falls' municipal boundary. Scope 1 emissions are direct emissions from sources under the community's control, such as fuel combustion for residential heating and emissions from vehicles travelling on local roads. Scope 2 emissions are indirect emissions associated with purchased electricity or other energy sources used in the community, where the emissions occur off-site but are driven by local consumption (for example, the emissions produced when electricity is generated to power homes and businesses).

Scope 3 emissions are indirect emissions that occur outside the Town's boundaries or direct control, such as those from supply chains and community consumption. Although these emissions are not included in this inventory, the Town recognizes their importance and will continue to support programs that encourage sustainable behaviours and help reduce broader community impacts. Together, this inventory provides a clear and accurate picture of Smiths Falls' community-wide emissions footprint, creating the evidence base needed to set targets, prioritize actions, and track progress over time.



(World Resources Institute, C40 Cities Climate Leadership Group, & ICLEI - Local Governments for Sustainability, 2023)

Figure 6 Scope 1, 2, and 3 emissions collectively reflect direct, energy, and supply-chain impacts

The Community Greenhouse Gas Inventory estimates the total GHG emissions generated within Smiths Falls, providing a comprehensive picture of the community's impact and supporting climate action planning. This baseline inventory provides the foundation for setting future emission-reduction targets and tracking progress, reflecting the entire community's impact and supporting informed decision-making for Smiths Falls' climate action planning. In 2021, the community emitted **104,742 tonnes** of GHGs.

Community Emissions Inventory

The Community GHG Emissions Inventory assessed five activity sectors for the baseline year of 2021:

- Stationary Energy;
- Transportation;
- Waste: Community Solid Waste and Wastewater
- Agriculture, Forestry, and Other Land Uses (AFOLU); and,
- Industrial Processes and Product Use (IPPU).

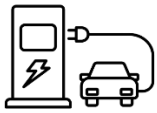
The activity sectors within the community greenhouse gas inventory are further broken down into specific emission sources, providing a detailed understanding of where emissions originate. For instance, stationary energy, which includes emissions from residential, manufacturing, and construction activities, as well as from commercial and institutional buildings, is subdivided into these categories.

This detailed section helps identify the particular areas where targeted actions can be most effective. The inventory also includes other major sectors, such as transportation and waste, each divided into sources such as on-road vehicles, solid waste disposal, and wastewater treatment. This comprehensive breakdown allows the community to pinpoint emission sources accurately, fostering informed planning and action to reduce overall greenhouse gas emissions.

For the community emissions inventory, the relevant sources of emissions are:

- Residential
- Commercial & Institutional
- Manufacturing Industries & Construction,
- On-Road Transportation
- Solid Waste
- Wastewater & Sewage
- Carbon Sequestration for Woodlots (carbon-offset)

Taken together, the sectoral breakdowns provide a clear view of how community greenhouse gas (GHG) emissions are distributed. The chart below shows emissions by source, highlighting the relative contributions of the residential, commercial, industrial, transportation, and waste sectors, alongside carbon sequestration activities. Viewing emissions at the source level helps pinpoint where targeted reduction measures are most likely to deliver the greatest overall impact.

Stationary Energy		Emissions in this sector can be generated directly from the stationary combustion of fuels (e.g., natural gas used in boilers and furnaces) or indirectly from grid-supplied electricity or direct energy sources. Residential, commercial and institutional, manufacturing and industrial buildings are sub-sectors of the Stationary Energy sector
Transportation		Emissions in this sector can be generated directly by fuel use (e.g., gasoline or diesel) or indirectly through grid-supplied electricity (e.g., plug-in electric vehicles).
Wastewater		Emissions in this sector come from wastewater and sewage treatment for homes, businesses, and other community activities in the Town, not from the Town's municipal operations.
Solid Waste		Emissions in this sector are generated from the transportation and processing of solid waste outside the Town of Smiths Falls. Because the Town does not operate its own solid waste processing facility, this sector includes downstream emissions from waste transported to and managed at external landfill or processing sites, as well as the GHG emissions associated with hauling and collection.
Industrial Processes (IPPU)		Emissions from the mineral products, chemical industry, and metal production sectors.
Agriculture, Forestry & Land Use (AFOLU)		Emissions from agriculture, forestry, and other land uses, including managed forests, woodlots and classified wetlands.

Carbon Sequestration for Woodlots

Smiths Falls has no managed forests within its boundaries but does have significant woodlots. These woodlots, while not formally managed under specific programs, represent important local forested areas that contribute to the community's natural landscape and ecological health.

These woodlots are not a source of emissions but instead offer a valuable opportunity for carbon offsetting. Through the natural process of photosynthesis, they capture and store carbon dioxide from the atmosphere, making them vital natural allies in the fight against climate change.

Including carbon sequestration from these forests in the community's emissions baseline recognizes their role in offsetting greenhouse gases released within the Town. This inclusion highlights not only the measurable impact of woodlots in reducing net emissions but also underscores their broader environmental value.

Beyond carbon storage, woodlots provide essential benefits such as clean air, water filtration, and wildlife habitat, adding layers of ecological and community well-being that enrich the Town's sustainability efforts. By valuing these co-benefits, the community embraces a holistic approach to climate action, one that balances emissions reductions with the preservation and enhancement of natural resources.

GHG Emissions by Source		Total GHG (metric tonnes CO2e)	
Commercial & Institutional	The Commercial and Institutional sector includes emissions from energy used for heating, cooling, lighting, and equipment in buildings that serve businesses, schools, healthcare, and public services.	14,061	13.42%
Manufacturing Industries & Construction	Manufacturing and construction emissions mainly come from burning fossil fuels for energy and heat, industrial processing of raw materials, and activities involved in on-site construction, all of which are energy-intensive and contribute significantly to greenhouse gas emissions.	9,185	8.77%
Residential	Residential greenhouse gas emissions and energy use primarily come from burning fossil fuels for space and water heating, as well as electricity consumption for lighting, appliances, and cooling, with emissions influenced by building age, efficiency, and fuel sources.	19,399	18.52%
On-Road Transportation	Greenhouse gas emissions and energy use by on-road transportation come mainly from burning fossil fuels in passenger cars, trucks, and freight vehicles, making it a major contributor to overall community emissions.	58,387	55.74%
Solid waste	GHG emissions from the storage and disposal of solid waste generated community-wide	3,618	3.45%
Wastewater & Sewage	GHG emissions are generated by municipal water and wastewater infrastructure, such as lift and pumping stations, reservoirs and storage tanks, and treatment facilities.	510	0.49%

Carbon Sequestration for Woodlots	GHG emissions are calculated net of the carbon sequestered by local woodlots, where the amount of CO_2 stored in trees and soils is estimated and subtracted from total emissions to reflect their offsetting role. Wetlands were not included at this stage due to an inability to accurately measure such sequestration efforts; staff will explore replicable, methodologically applicable approaches in future emissions inventory baseline assessments as measurement methodology improves.	418	-0.40%
		Total	104,742	100%

Community Business as Usual Forecast

A Community Business-As-Usual (BAU) forecast projects the future greenhouse gas emissions of the entire community, assuming no new climate actions or policies are introduced beyond those already in place. It reflects the expected emissions trajectory if current patterns of energy use, transportation, waste, and development continue unchanged, serving as a baseline to understand the scale of emissions reductions needed to meet climate recommendations.

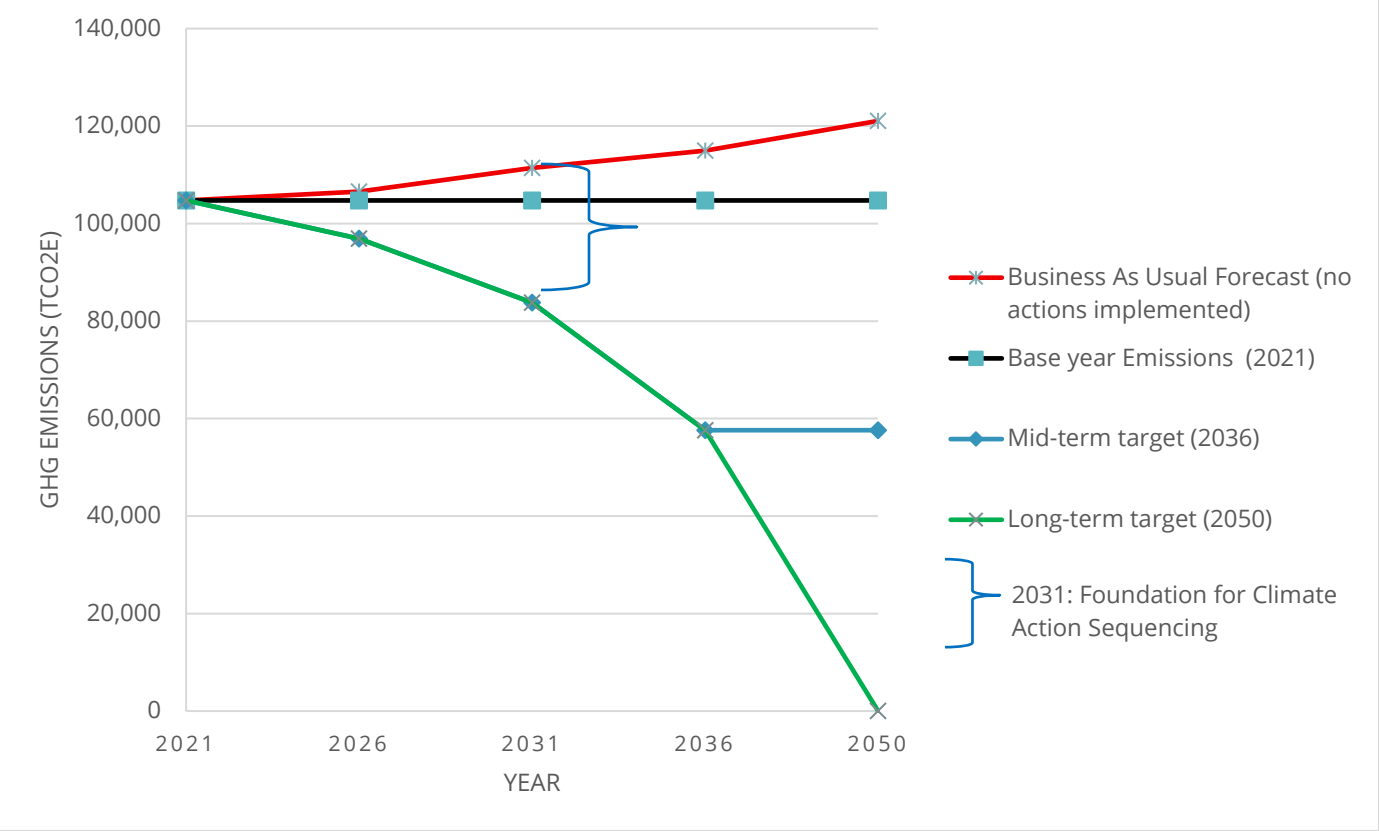


Figure 7 The Community BAU forecast projects rising emissions through 2050 if no climate action is taken.

The community's emissions are expected to rise steadily in the coming decades, increasing by about **1.7% by 2031, 3.7% by 2036, and 15.6% by 2050** compared to 2021 levels. This projection assumes that emissions grow directly with population at a rate of 1.13% annually, without improvements in fuel efficiency, electrification, or waste reduction.

The Community Business-As-Usual (BAU) forecast for Smiths Falls was developed by updating the 2021 baseline greenhouse gas inventory with refined sector allocations and improved transportation data from local vehicle registrations. Emissions were projected to 2031, 2036, and 2050, assuming current energy use, service demand, and operating practices continue without new mitigation measures. Fixed growth rates based on local population forecasts, energy outlooks, and expected local development were applied consistently across key sectors, including residential, commercial, industrial, transportation, waste, and wastewater.

Table 1 This table shows estimated greenhouse gas (GHG) reductions in tonnes of carbon dioxide equivalent (tCO2e) from draft Climate Action Plan initiatives across key sectors by 2031, 2036, and 2050.

Sector	**Draft Action Plans**	**Reduction by 2031 (tCO2e)**	**Reduction by 2036 (tCO2e)**	**Reduction by 2050 (tCO2e)**
Buildings	Moderate-scale deep retrofits for residential and commercial buildings (20- 25% uptake), fuel switching	4500	6000	8000
Transportation	Support for active and public transportation, adoption of EVs in personal vehicles	3000	5000	7100
Waste	Expansion of organics diversion and composting, public education, and reduction of methane from landfills	320	450	600
Industrial /ICI Energy	Targeted fuel switching and efficiency in larger facilities, process optimization	310	500	800
	Total	8130	11950	16500

This chart outlines the emissions reductions expected from the Town's draft community climate actions across buildings, transportation, waste, and industrial energy, showing how each sector contributes to greenhouse gas reductions. Buildings and transportation continue to drive the majority of reductions, reflecting their dominant share of baseline emissions and illustrating where targeted local action can most effectively shift the community away from the business-as-usual forecast.

By 2031, improvements in building efficiency and fuel switching are projected to deliver about 55% of total reductions, with transportation contributing roughly 37%, and by 2050, these two sectors

remain central, accounting for about 50% and 43% of reductions as energy-efficient design, electrification, and cleaner mobility become more widespread.

Waste and industrial actions add smaller but still important contributions, each providing between 4 and 5% of reductions; while limited by current data and near-term feasibility, they remain essential components of a complete and balanced climate response. Altogether, the proposed actions are expected to reduce emissions by 8,130 tCO2e by 2031, 11,950 tCO2e by 2036, and 16,500 tCO2e by 2050, helping narrow the gap between projected BAU growth and the Town's long-term community reduction targets.

Corporate Emissions Inventory Profile

Using 2021 as the baseline year, Town staff compiled the corporate greenhouse gas emissions inventory for Milestone 1, which outlines the emissions generated directly from municipal operations and services.

This inventory serves as a crucial foundation for setting emission reduction targets and tracking progress over time. It captures emissions that the Town, as a corporation, can directly control or influence, covering all major municipal assets and activities, including **buildings and facilities, fleet vehicles, streetlights and traffic signals, wastewater infrastructure, water infrastructure, and solid waste management.** This focused inventory helps guide targeted local actions to reduce emissions from Town operations.

The corporate emissions inventory focuses on greenhouse gases produced directly by Town operations and is a subset of the broader community inventory, analysed separately to prevent overlap. In 2021, Smiths Falls' corporate emissions totalled **1,738 tonnes of CO2e**, with wastewater infrastructure accounting for the largest share at 46%, followed by municipal buildings and facilities at 26%. These two sectors dominate the Town's corporate emissions profile and set the stage for targeted reduction efforts.

Photo Credit 2 Jenna Brown

GHG Emissions by Source		Total GHG (metric tonnes CO2e)	
Municipal Buildings & Facilities	GHG emissions and energy use from municipal buildings & facilities.	455	26.19%
Municipal Fleet & Equipment	GHG emissions and energy use from municipal vehicles & equipment.	158	9.11%
Streetlighting	GHG emissions and energy use from streetlights, traffic signals, and any other public outdoor lighting.	12	0.70%
Wastewater Buildings & Facilities	GHG emissions by municipal wastewater infrastructure.	798	45.91%
Water Treatment Facility & Facilities	GHG emissions by municipal water buildings and water pump stations.	220	12.66%
Corporate Solid Waste	GHG emissions from solid waste generated at corporate facilities, including parks, recreation centres, and public receptacles.	94	5.43%
	Total	1,738	100%

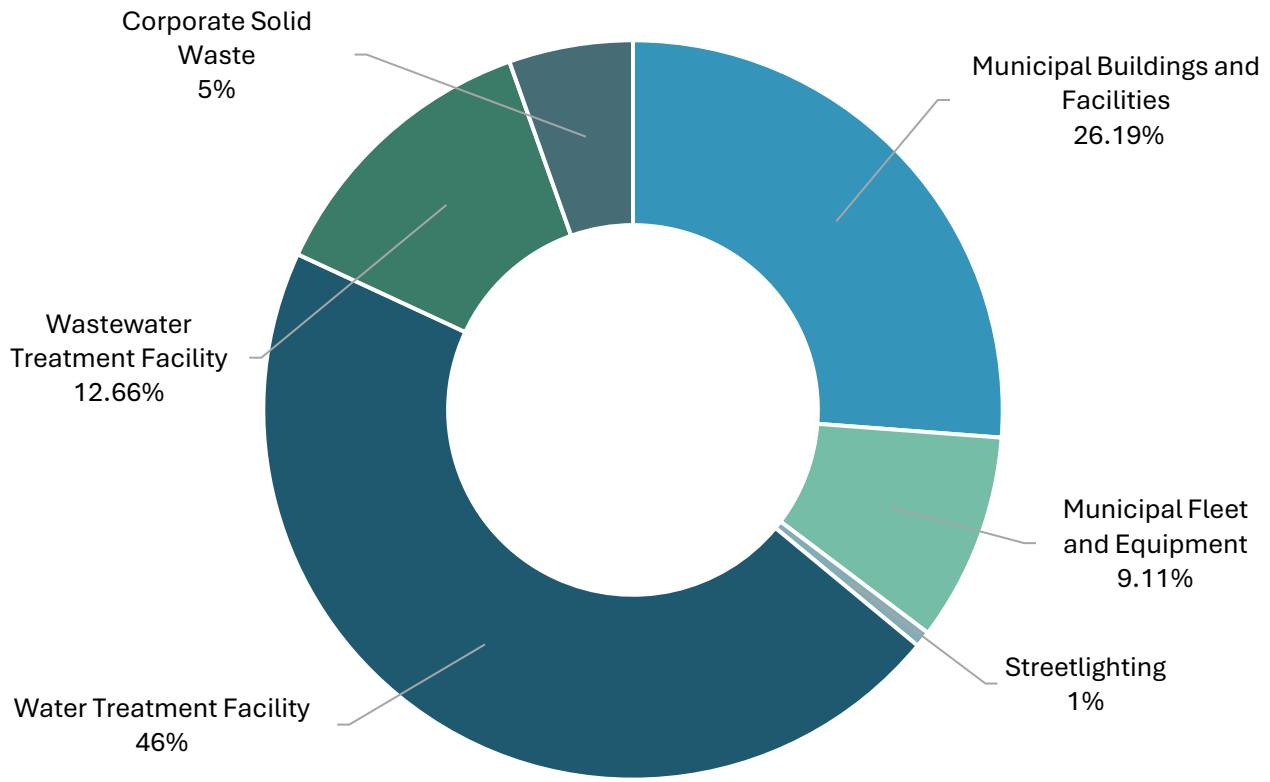
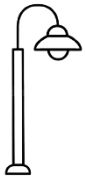
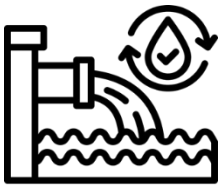


Figure 8 2021 Corporate Emissions Baseline

Municipal Buildings & Facilities		Municipal buildings and facilities are a key source of emissions, generated either directly through the burning of fuels like natural gas in boilers and furnaces, or indirectly from electricity supplied through the grid or district energy systems.
Municipal Fleet		Municipal fleet emissions result from fuel combustion in town-owned vehicles. Emissions from electric vehicles are accounted for under the Municipal Buildings and Facilities sector due to their reliance on grid electricity.
Streetlights & Traffic lights		Emissions produced from the powering of municipal streetlights & traffic lights. With recent upgrades to energy-efficient LED lighting, the Town has reduced emissions in this sector, which now accounts for a small portion of the overall municipal greenhouse gas profile.
Sewage Treatment		Emissions produced by municipal sewage infrastructure. This includes the Smiths Falls wastewater treatment facility and lift and pumping stations, which also serve the Atironto subdivision in Montague Township. These emissions come from both direct biological processes, such as methane and nitrous oxide produced during the breakdown of organic matter in wastewater and sludge, and indirect sources, like carbon dioxide generated from the electricity used to power treatment operations.
Water Treatment		Emissions are produced by municipal water infrastructure, which includes the Smiths Falls water treatment facility and lift and pumping stations. These emissions result primarily from the electricity used to power the treatment processes and the mechanical systems that ensure clean water delivery to the community.
Corporate Solid Waste		Emissions linked to solid waste in Smiths Falls come from the generation and disposal of waste produced by municipal operations. This includes waste collected from Town-owned facilities and buildings.

Corporate Business as Usual Forecast

A Corporate Business-As-Usual (BAU) scenario projects future greenhouse gas emissions from the Town's baseline operations under a no-action assumption. It extrapolates current patterns in energy consumption, fleet operations, buildings, and municipal services without new climate initiatives, establishing a reference trajectory to quantify the impact of emissions-reduction measures and monitor progress longitudinally.

The corporate BAU scenario for Smiths Falls extrapolates emissions from existing municipal operations absent new climate measures. From the adjusted 2021 baseline of 1,738 tCO2e, projections show a rise of ~2% by 2031, 3.5% by 2036, and 6% by 2050.

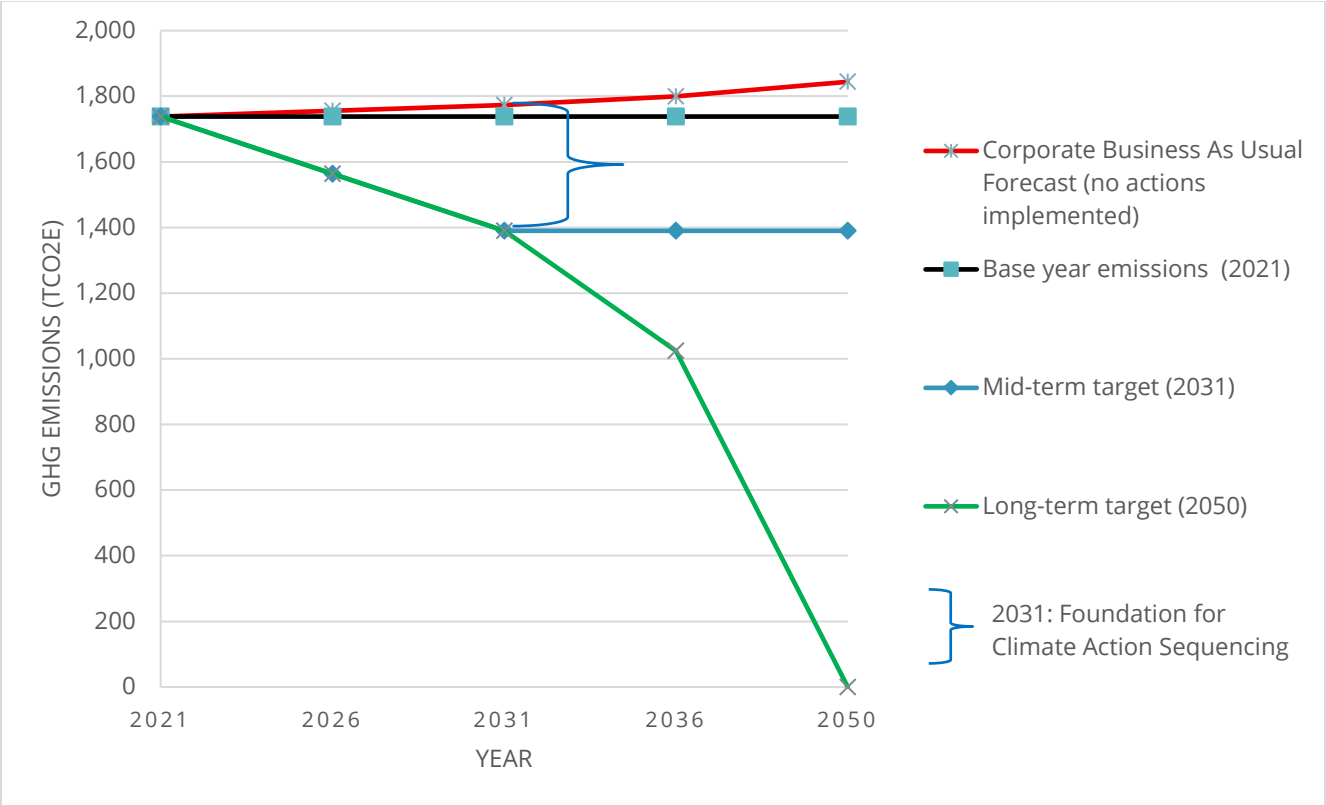


Figure 9 The Corporate BAU forecasts that emissions will continue to rise through 2050, increasing by 6% in no climate action or efficiency measures are implemented.

The Corporate Business-As-Usual (BAU) forecast for Smiths Falls projects that municipal emissions will rise in proportion to increasing demands on facilities and services, driven largely by population growth and without assuming any improvements in efficiency or policy-driven reductions. Electricity emission factors are held constant, and water and wastewater emissions are assumed to remain stable; however, the wastewater treatment plant continues to rely on natural gas for building and process heating, creating a steady, ongoing source of Scope 1 emissions.

In the absence of efficiency upgrades or fuel-switching measures, these natural-gas-related emissions persist as a fixed portion of the Town's corporate carbon footprint, even though they appear unchanged in the BAU scenario. Meanwhile, solid waste-related emissions are expected to rise gradually in line with staffing levels and facility usage. Taken together, these assumptions create a conservative and transparent baseline that illustrates how municipal emissions would evolve without intervention and provides a clear benchmark for measuring the impact of future corporate climate actions.

Emission Reduction Targets

Emission reduction targets are measurable goals that define how much greenhouse gas emissions a community or municipality aims to cut within a specific timeframe. These targets are a core part of climate mitigation efforts, helping guide actions that directly reduce emissions from sources like transportation, buildings, and waste. In Smiths Falls, these targets are informed by the 2021 emissions inventory and are aligned with the PCP 5-step framework, which ensures a structured approach to climate planning and accountability.

While adaptation recommendations, such as preparing for extreme weather or protecting natural assets, do not directly reduce emissions and therefore aren't reflected in these targets, they are fully integrated into the Climate Action Plan. Adaptation strengthens the Town's ability to cope with climate-related risks and disruptions, ensuring that infrastructure, ecosystems, and residents are better prepared for the impacts of a changing climate.

Together, mitigation and adaptation form a complementary strategy. They are not mutually exclusive; rather, they work in tandem to build a resilient, low-carbon future for Smiths Falls, one that reduces environmental harm while safeguarding the community against future climate threats.

Setting and updating these targets is a central element of the Climate Action Plan. The Town aims to achieve **a 20% reduction from 2021 levels by 2031, a 45% reduction by 2036, and net-zero by 2050.** These targets will be regularly reviewed to ensure they remain ambitious yet practical, allowing for adjustments as new technologies emerge and community capacity grows.

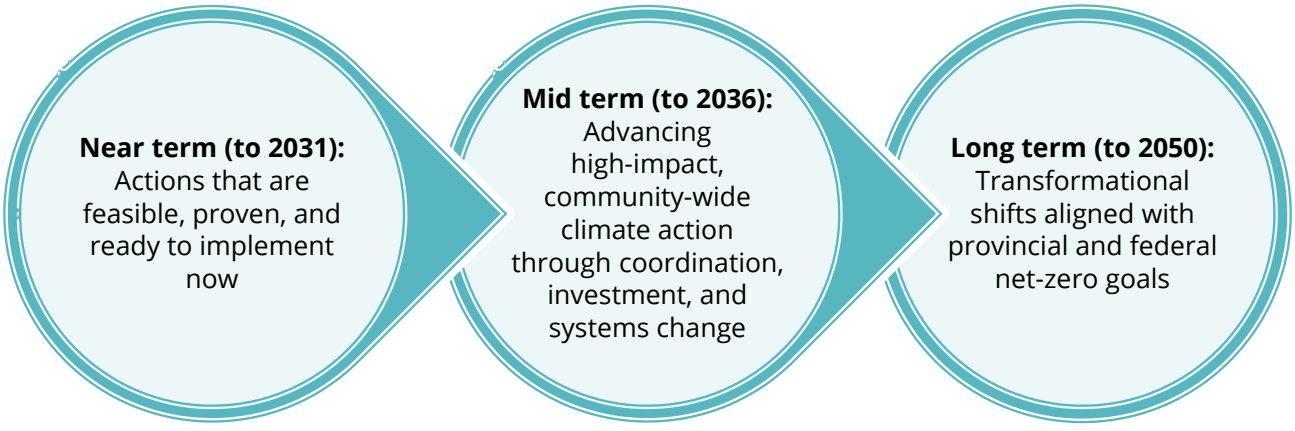


Figure 10 Emission reduction targets show how climate action builds over time, from near-term implementation to long-term transformation.

CHAPTER 3

Sustainability Goals

Mitigation & Adaptation Framework

The Sustainability Table

To provide clarity and structure, the climate recommendations in this Climate Action Plan are organized according to their primary purpose: adaptation, mitigation, or in many cases a blend of both. Adaptation recommendations focus on preparing the community for climate-related impacts and reducing vulnerability, while mitigation recommendations aim to reduce greenhouse gas emissions. Because many initiatives support both objectives (for example, improving building efficiency can also improve comfort during heat events), these classifications are not absolute or mutually exclusive; they indicate the predominant intent of each recommendation rather than a strict binary definition.

The accompanying sustainability tables capture the essence of both adaptation- and mitigation-oriented recommendations by summarizing each action's expected climate benefit (emissions reduction and/or resilience improvement), cost considerations, lead department(s), key performance indicators, co-benefits, and resourcing opportunities. This format supports transparency and helps partners understand not only the environmental and resilience benefits of each recommendation, but also the practical implications, implementation needs, and added community value.

- **Recommendations:** Climate actions in this Plan, presented as recommendations in the CAP tables, outline the measures the Town will take to reduce emissions and strengthen climate resilience. Each recommendation includes a **bold** label indicating whether it is primarily mitigation, adaptation, or a mix of both. These labels are only approximate, not strict or binary, as many actions support multiple climate objectives. Together, the recommendations form a flexible roadmap that can evolve with new technologies, information, and community priorities while remaining aligned with the Town's long-term sustainability goals.

- **Cost:** Cost refers to the estimated resources needed to implement each recommendation. These figures are included to provide a general sense of feasibility but represent a moment-in-time estimate that may change as technologies, funding opportunities, and local conditions evolve. While not capturing all long-term or ongoing expenses, the cost categories offer an initial guide to support planning, prioritization, and transparent decision-making.

    - **Low:** < $50,000
    - **Medium**: $50,000 - $150,000
    - **High**: > $150,000

- **Resourcing:** Resourcing identifies the provincial, federal, and partner funding opportunities that can support each recommendation, including programs such as the Federation of Canadian Municipalities' Green Municipal Fund. These sources help reduce municipal costs, strengthen implementation capacity, and enable collaboration with utilities and community partners, ensuring recommendations can be advanced efficiently and integrated into broader financial planning.

- **Estimated GHG Reduction Impact:** Estimated GHG Reduction Impact indicates the expected emissions-reduction potential of each recommendation by 2031, categorized as nominal, low, medium, or high. These values offer a conservative, sector-specific estimate to help compare the relative effectiveness of climate actions and guide prioritization. The categories express reduction potential as a percentage of total community emissions

    - **Nomina**l: 0-0.1% - *Tiny reductions; education or enablers*
    - **Low**: 0.1-1% - *Small cuts from targeted initiatives*
    - **Medium**:1-10% - *Meaningful reductions from major actions*
    - **High:** 10%+ - *Large, transformative community-wide impact*

- **Project Horizon:** The project horizon identifies when meaningful progress can reasonably be expected, grouping climate actions into short-term (0–5 years), medium-term (5–10 years), and long-term (10+ years) timelines. These horizons reflect the scale, complexity, and expected impact of each recommendation and help the Town sequence work in a realistic and coordinated way. Key Performance Indicators (KPI's) support this process by clarifying what measurable progress looks like within each timeframe - whether early indicators such as participation rates, or longer-term outcomes such as emissions reductions or resilience improvements.

  Each recommendation also includes conservative early-uptake assumptions informed by comparable programs and community feedback. As implementation advances and annual KPI data becomes available, these assumptions will be refined, allowing the Town to track performance more accurately and adjust timelines as technologies, funding, and community capacity evolve.

    - **Short Term**: 0- 5 yrs
    - **Medium Term:** 5-10 yrs
    - **Long Term:** 10+ yrs

- **Lead Department and/or Community Partners:** The Lead Department identifies the municipal team primarily responsible for advancing each recommendation. In addition, many climate actions will require collaboration with community partners, including local organizations, service providers, institutions, community members to support shared learning, leverage complementary expertise, and ensure that implementation reflects community needs and strengthens overall resilience

- **Key Performance Indicators (KPI):** Key Performance Indicators provide measurable signals of progress for each recommendation, ranging from early participation metrics to longer-term outcomes such as emissions reductions or resilience improvements, supporting transparent tracking over time.

- **Co-benefits**: Co-benefits highlight additional advantages created by a recommendation, such as improved health, cost savings, equity, or ecosystem benefits. to help illustrate the broader community value beyond emissions reduction or resilience outcomes.

- **Cost/Impact Score**: The Cost/Impact Matrix is a prioritization tool that compares the approximate resources required to implement each recommendation with its expected emissions-reduction and/or resilience benefit. The Cost reflects the CAP's Low/Medium/High categories defined earlier in the chapter and indicates the approximate level of financial, operational, and staff effort required to advance each recommendation.

  Mitigation and Adaptation are each evaluated on a 0–5 sliding scale, which measures the strength of the climate benefits described for every recommendation. The Mitigation score assesses the recommendation's expected ability to reduce greenhouse gas emissions, ranging from nominal (education or enabling actions) to transformative (significant reductions in a major sector). The Adaptation score measures the degree to which a recommendation reduces climate-related risks such as heat, flooding, stormwater impacts, or system vulnerability, with higher scores assigned to actions that provide broader, more durable resilience outcomes.

  Each recommendation was assessed individually using the climate benefits described in the CAP. Staff reviewed its dominant purpose, pathway of impact, scale of influence, and alignment with known climate risks in Smiths Falls. Because many recommendations provide value in both mitigation and adaptation, these labels serve as approximate, non-binary indicators to support interpretation—they do not require an action to fall exclusively into one category.

  To avoid inflating hybrid actions and to treat strong mitigation-only and strong adaptation-only recommendations equally, the overall Impact Score is calculated as:
    - **Impact Score = 2 × max(Mitigation Score, Adaptation Score)**

  This scoring system supports transparent prioritization by allowing the Town to compare recommendations based on their climate benefit relative to their expected cost. Actions with High impact and Low or Medium cost emerge as strong early-action priorities, while high-impact but high-cost actions are recognized as strategic capital investments. Similarly, recommendations with lower scores remain important as enabling or foundational measures.

  Assign a Mitigation Score (e.g., 1–5 for GHG/emissions-reduction potential) and an Adaptation Score (1–5 for resilience gaps such as flooding or heat). Take the highest of the two scores (e.g., max(3,4)=4), multiply by 2 (e.g., 2 × 4 = 8), and compare this result to the threshold ranges (e.g., scores ≥8 indicate high priority). As a result, the scoring framework offers a clear, structured way to organize implementation sequencing while remaining flexible as technologies, capacity, and community priorities evolve.

Community Sustainability Recommendations

The Community Climate Action Plan is guided by five key categories of sustainability goals, each rooted in the plan's core principles. These categories include **Buildings & Development, Transportation, Waste Management, Natural Asset Management, and Education & Governance.** Together, they form a comprehensive framework to reduce greenhouse gas emissions, enhance resilience, and foster environmental stewardship across the town. By focusing on these interconnected areas, the plan aims to create a sustainable future that supports both the environment and the well-being of the community.

Building & Development

The Buildings and Development category covers the commercial, institutional, manufacturing, construction, and residential sectors, which together account for about 40% of Smiths Falls' community emissions—roughly 42,000 tonnes of CO_2e in 2021. Most emissions arise from heating and cooling buildings, particularly those using natural gas, with electricity contributing the remainder. The recommendations in this category focus on improving energy efficiency, encouraging green building standards, and enhancing the resilience of homes and facilities to future climate impacts.

Recommendation #1 – Municipal Retrofit Program	**Mitigation /** Adaptation
Support community-based programs that provide homeowners and tenants with education, guidance, and access to funding for residential energy retrofits, including initiatives such as Climate Network Lanark's Neighbourhood Climate Concierge program. In partnership, develop a municipal residential retrofit program offering low-interest, property-tax–repayable loans, targeted grants, and service-delivery support for deep energy retrofits, with pathways tailored for heritage-designated properties. The program will enable a broad suite of upgrades, including building-envelope improvements, mechanical system upgrades, renewable energy installations, water-efficiency measures, and climate-resilience enhancements, with a focus on supporting older homes and households facing high energy-cost burdens.	
Estimated GHG Reduction Impact (CO2e)	Low-Medium
Lead Department &/or Community Partner(s)	Lead: Development Services, Finance, Support: Public Works & Utilities Partners: Community organization (e.g., Climate Network Lanark)
Key Performance Indicators	(1) # of residential energy retrofits completed (tracked through application approvals)

	(2) Total program GHG reductions (tCO_2e) funding projects (aggregated annually) (3) Distribution of retrofit types (heat pumps, insulation, windows, water-efficiency, resiliency upgrades)
Co-benefits	(1) Lower residential energy costs (2) Enhanced building comfort and health (3) Improved resilience and reduced damage risk
Cost	Low (when delivered by community partners), Medium (multi-year loan fund capital requirements & administrative capacity, and homeowner support services)
Resourcing Opportunities	Federation of Canadian Municipalities – Community Efficiency Financing (CEF) program (GMF)
Project Horizon	Short to Long Term (15+ yrs)
Cost/Impact Score	Cost: Medium Impact: Medium Impact Score: 6/10

Recommendation #2 – LID & Green Building Standards CIP program	Mitigation **/ Adaptation**
Develop and implement a Community Improvement Plan (CIP) program that provides financial incentives to encourage mixed-use and commercial property owners in the Downtown Core to incorporate low-impact development (LID) techniques and green building standards into new developments, redevelopments, and major renovations The CIP program will support sustainable site-design and high-performance building upgrades that reduce stormwater runoff, expand the urban tree canopy, enhance energy efficiency, and strengthen climate resilience. Incentives may include fee rebates for eligible measures such as permeable paving, rain gardens, bioswales, green roofs, soil-cells systems, enhanced building-envelope upgrades, reflective roofing, heat pumps, and renewable-energy installations.	

Lead Department and/or Community Partner(s)	Lead: Development Services; Finance Support: Public Works & Utilities
Key Performance Indicators	(1) # of CIP-supported projects incorporating LID or green-building measures (2) # estimated annual GHG reductions from supported energy-efficiency upgrades

	(3) Square metre of permeable or green-infrastructure surfaces installed through supported projects
Co-benefits	(1) Improved stormwater management and reduced flood risk (2) Enhanced downtown vibrancy and aesthetic value (3) Urban cooling and improved air quality
Cost	Medium
Resourcing	Municipal CIP budget, Community Efficiency Financing (CEF) program by GMF
Project Horizon	Medium Term (5-10 years)
Cost/Impact Score	Cost: Medium Impact: High Impact Score: 8/10

Recommendation #3 –Rain Barrel Program Mitigation **/ Adaptation**

Support delivery of a Rain Barrel Program by community partners such as the Rideau Environmental Action League (REAL), to encourage and support residents in installing and maintaining rain barrels on their properties.

The program promotes residential rainwater collection to reduce demand on municipal stormwater systems, increase household water resilience, and support low-cost climate adaptation. It will include outreach, demonstrations, incentives, training resources, and annual distribution or bulk-purchase opportunities in partnership with community organizations. The program will emphasize proper installation, safe water use, and year-round maintenance.

Lead Department and/or Community Partner(s)	Lead: Development Services Support: Public Works & Utilities Partners: Community Organization e.g., REAL
Key Performance Indicators	(1) # of rain barrels distributed or subsidized annually (2) Participation rate by neighbourhood or household type (3) Estimated stormwater runoff diverted (litres/year)
Co-benefits	(1) Reduced stormwater runoff and localised flooding risk (2) Lower household water use (3) Increased climate literacy and community engagement
Cost	Low (depending on incentive size and number of barrels)
Resourcing	REAL, Local Leadership for Climate Action (LLCA) program by GMF
Project Horizon	Short-Term

Cost/Impact Score	Cost: Low Impact: Medium Impact Score: 6/10

Recommendation #4 –Solar Roof Mapping for Renewable Energy Installations	**Mitigation /** Adaptation
Explore using solar mapping tools, in collaboration with community partners, to identify suitable opportunities for renewable energy installations on privately owned buildings and community assets. This initiative will evaluate and, if appropriate, deploy rooftop solar-mapping tools, similar to those developed for the City of London's MyHEAT program, and similar to the ecoPerth mapping of Perth, to identify where solar photovoltaic (PV) installations are most feasible across the community. The program will help property owners understand solar potential, shading constraints, financial viability, and expected energy production. Mapping outputs will support broader renewable-energy planning, guide municipal policy, and enable targeted outreach to areas with strong solar capacity. **Connect eligible properties with funding programs delivered by such organizations as Climate Network Lanark's Neighbourhood Climate Concierge program for funding, education and assistance with connecting with suppliers.**	

Estimated GHG Reduction Impact (CO2e)	Low-Medium
Lead Department &/or Community Partner(s)	Development Services, Public Works & Utilities, Finance (support), IT & GIS support, Climate Network Lanark
Key Performance Indicators	(1) # of rooftop installation projects (2) Completion of a solar suitability map for the entire community (3) # of solar feasibility reports generated for residents/businesses
Co-benefits	(1) Increased local renewable-energy generation (2) Reduced energy costs for property owners (3) enhanced climate literacy
Cost	Medium (depending on platform selection and analysis depth).
Resourcing	Net-Zero Transformation program by GMF
Project Horizon	Short-Medium Term (5-10 yrs)

Cost/Impact Score	Cost: Medium/ Impact: Medium Impact Score: 6/10

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Transportation

The Transportation category represents the largest share of community-wide emissions in Smiths Falls, accounting for about 50% of total emissions (roughly 58,000 tonnes of CO_2e) driven primarily by fossil-fuel use in personal vehicles, with commercial fleets and service travel contributing as well.

Recommendations in this category focus on reducing transportation-related emissions by supporting a shift toward lower-carbon mobility—including electric and hybrid vehicles, improved access to active transportation, and expanded mobility options that reduce reliance on single-occupant vehicles. Together, these recommendations aim to lower fossil-fuel consumption while improving community accessibility and resilience.

Recommendation #5 – On-Demand Transit Options	**Mitigation /** Adaptation
Work with community nonprofits, such as Lanark Transportation, to expand on-demand transit options in Smiths Falls and improve residents' mobility. Expand local mobility options by partnering with community transportation providers, such as Lanark Transportation, to improve access to affordable, reliable on-demand transit for residents, especially seniors, people with disabilities, youth, and households without access to a vehicle. The program may include expanded service hours, additional service zones, improved booking methods (phone/web/app), and better integration with medical, employment, and community destinations.	

Estimated GHG Reduction Impact (CO2e)	Low
Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities, Finance, Support: Communications Partners: Community Organization e.g., Lanark Transportation
Key Performance Indicators	(1) # of riders registered and/or # of unique riders served per year (2) Total trips provided and trips per service hour (3) Estimated GHG reduction proxy (mode shift indicator)
Co-benefits	(1) Improved accessibility and social inclusion (2) Reduced transportation cost burden for households (3) Community resilience and safety
Cost	Medium (depending on service expansion level (hours, fleet capacity, subsidies))
Resourcing	Canada Public Trust Fund (federal funding), Rural Transit Solutions (federal funding)
Project Horizon	Short- Medium Term (5-10 yrs)

Cost/Impact Score	Cost: Medium Impact: Medium Impact Score 6/10

Recommendation #6 – Publicly Accessible EV Charging Stations **Mitigation** / Adaptation

Facilitate the adoption of electric or hybrid vehicles by installing publicly accessible charging stations, supported through community partnerships.

Install and expand publicly accessible EV charging stations at priority locations to reduce "range anxiety," support residents and visitors without home charging, and encourage the transition to lower-emission vehicles. This climate action will prioritize locations that support downtown activity, municipal destinations, multi-unit residential areas, commuter corridors, and tourism nodes. Charging infrastructure will be delivered through partnerships (network providers, utilities, and businesses), using a phased approach based on utilization data and community needs.

Estimated GHG Reduction Impact (CO2e)	Low
Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities, Development Services, Support: Finance, and Communications Partner: Community Organization e.g., Canadian Tire
Key Performance Indicators	(1) # of public charging ports installed (Level 2 and DCFC tracked separately) (2) Charger utilization rate (sessions/day or % time in use) (3) GHG reduction proxy (kWh delivered × grid emissions factor; reported as indicative)
Co-benefits	(1) Supports low-carbon transportation adoption (2) Economic development & tourism support (3) Improved equity and accessibility
Cost	Medium (depending on the number of sites, electrical upgrades required, and whether DC fast chargers are included)
Resourcing	Canada Public Trust Fund (federal funding), Rural Transit Solutions (federal funding); EV ChargeON Program by the Ontario Government
Project Horizon	Short- Medium Term (5-10 yrs)
Cost/Impact Score	Cost: Medium Impact: Low Impact Score: 4/10

Recommendation #7 – Climate-Responsive Maintenance Budget Update	Mitigation **/ Adaptation**
Revise the municipal road maintenance budget to explicitly account for climate-related cost drivers, such as flood damage, to ensure the road network remains safe, reliable, and financially sustainable under changing weather conditions. This goal focuses on establishing a climate-adjusted budget grounded in a formal vulnerability assessment that pinpoints high-risk segments, such as flood-prone sections, pavements susceptible to heat stress, and areas experiencing accelerated freeze-thaw damage. By shifting from reactive repairs to predictive, climate-resilient asset management informed by engineering models and climate projections, the Town will be better positioned to prioritize investments and reduce long-term road maintenance costs.	
Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities, Support: Development Services, Engineering Consultants/Climate Experts
Key Performance Indicators	(1) Completion of a road network climate-vulnerability assessment (2) % of the annual road maintenance budget is aligned with climate-related cost drivers (3) Reduction in per-km lifecycle cost of road segments after adaptation measures
Co-benefits	(1) Reduced long-term maintenance and capital costs (2) Improved safety and reality (3) Enhanced resilience and community connectivity
Cost	Medium to High (depending on scale of upgrades and required materials)
Resourcing	Municipal capital and operating road budget, Local Leadership for Climate Action (LLCA) program by GMF
Project Horizon	Short-Medium Term
Cost/Impact Score	Cost: Medium to High Impact: High Impact Score: 8/10

Did You Know? More frequent freeze–thaw cycles, heavier rainfall, and extreme heat are accelerating wear on roads, sidewalks, and active transportation infrastructure. Research shows that adapting maintenance budgets to account for climate conditions can reduce long-term repair costs, prevent service disruptions, and extend the lifespan of transportation assets (Canadian Council of Ministers of Transportation, 2021; Transportation Research Board, 2016).

Recommendation #8 – Climate Lens Integration for Roads Needs Study	Mitigation **/ Adaptation**
Incorporate a climate-lens perspective into the proposed Roads Needs Study to systematically assess and address climate-related infrastructure impacts, including greenhouse gas emissions and vulnerability to climate disruptions. This project integrates climate-risk considerations into the Roads Needs Study to ensure the Town proactively identifies where roads, culverts, and drainage systems are most vulnerable to flooding, heat stress, erosion, and freeze-thaw cycles. Embedding a climate lens will allow the Public Works & Utilities department and asset-management team to rank road segments by climate exposure, refine maintenance priorities, and choose materials and design standards that extend road lifespan. The enhanced study will also evaluate the GHG implications of road-rehabilitation methods and help align long-term transportation planning with municipal climate-adaptation and emissions-reduction goals.	

Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities, Support: Asset Management, Development Services, & Engineering Consults/Climate Experts
Key Performance Indicators	(1) Completion of climate-integrated Roads Needs Study (2) % of road network assigned climate-risk scores (3) Incorporation of GHG-aware materials/practices into road rehabilitation
Co-benefits	(1) Reduced long-term maintenance and capital costs (2) Improved public safety and travel reliability (3) stronger alignment with municipal climate recommendations
Cost	Medium to High (depending on scale of upgrades and required materials)
Resourcing	Annual Budget Allocation
Project Horizon	Short-Medium Term
Cost/Impact Score	Cost: Medium to High Impact: High Impact Score: 8/10

Recommendation #9 – Climate Lens integration into the Transportation Master Plan	**Mitigation / Adaptation**
Integrate a “Climate Lens” into the Transportation Master Plan (TMP) so that transportation decisions explicitly (1) reduce community transportation GHG	

emissions and (2) identify and address climate risks (e.g., flooding, heat, freeze-thaw) that threaten road and mobility infrastructure and service reliability. Integrating a climate lens into the Transportation Master Plan (TMP) means evaluating major transportation actions through two linked filters: how they reduce greenhouse gas emissions and how they withstand future climate risks (e.g., flooding, heat, freeze-thaw). The TMP will use this approach to prioritize projects and policies that are both low-carbon and resilient, protecting critical corridors and maintaining reliable service as extreme weather increases.	
Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities, Support: Development Services and Asset Management, External specialists
Key Performance Indicators	(1) Completion of climate-Lens TMP completed (2) % of annual transportation capital program that addresses a documented climate vulnerability (3) # of climate-related road closures / critical corridor disruptions (baseline vs. 3-year rolling average)
Co-benefits	(1) Lower lifecycle infrastructure costs (2) Improved safety & reliability (3) Better equity and access outcomes
Cost	Medium (climate-lens scope will be an incremental add-on to the draft TMP)
Resourcing	Local Leadership for Climate Action (LLCA): Climate-Ready Plans and Processes program by GMF
Project Horizon	Short-Term
Cost/Impact Score	Cost: Medium Impact: High Impact Score: 8/10

Did You Know? In communities the size of Smiths Falls, many everyday trips are under five kilometres and can be made by walking, cycling, or mobility supports when safe and convenient options are available. Improving sidewalks, crossings, cycling routes, and access to transit helps reduce greenhouse gas emissions while supporting health, affordability, and accessibility for residents of all ages (Housing, Infrastructure and Communities Canada, 2021).

Waste Management

Waste-related emissions account for less than 4% of community-wide emissions in Smiths Falls, totalling roughly 4,100 tonnes of CO_2e, generated through both solid-waste decomposition and wastewater processes. Within this framework, recommendations in the waste sector focus on strengthening waste-diversion practices, such as expanding organics collection. and exploring opportunities to reduce emissions from wastewater infrastructure through improved efficiency and facility upgrades.

Greenhouse gas emissions in this category are measured across two components: solid waste, which includes methane from landfill decomposition and emissions from incineration, and wastewater/sewage, which reflects the energy consumption and treatment-related emissions of municipal systems. The wastewater component covers lift and pumping stations, reservoirs, storage tanks, and treatment facilities operated by the Town and captured within the Corporate Climate Action Plan, while the solid-waste component monitors methane, nitrous oxide, and associated carbon dioxide emissions resulting from community disposal practices.

Recommendation #10 – Municipal Organic Waste Reduction Program	Mitigation **/ Adaptation**
Explore developing a municipal organic waste diversion and reduction program ("Green Bin" program) that would collect residential organics and transport them to an approved composting or anaerobic digestion facility outside Town limits, helping reduce landfill-related methane emissions and advance CAP waste-sector targets. As part of this exploration, the Town will continue providing backyard compost bins to all residents to support at-home organics diversion and reduce overall waste generation. A Green Bin program would divert food scraps and other organics from landfill by collecting them locally and transporting them to an approved processing facility, helping reduce methane emissions and supporting CAP waste-sector targets while improving overall waste-system resilience. **In the meantime, support other community-based organics diversion programs such as Just Good Compost, and leaf and yard waste composting programs.**	
Estimated GHG Reduction Impact (CO2e)	Low
Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities, Support: Development Services and Asset Management, External specialists
Key Performance Indicators	(1) Organics captures (tonnes/year) (2) Participation / set-out rate (low-rise curb-side carts) (3) Contamination rate (% by weight)

Co-benefits	(1) Reduced landfill dependency (2) Soil health and greening support via compost benefits (3) Stronger climate literacy and community engagement
Cost	High (program rollout and ongoing operations/contracts: carts/bins, collection/hauling, processing fees, education)
Resourcing	Annual Budget Allocation
Project Horizon	Short-Term
Cost/Impact Score	Cost: High Impact: Medium Impact Score: 6/10

Recommendation #11 – Green Waste Program Training Sessions	Mitigation **/ Adaptation**
Provide recurring training sessions for residents and community leaders on best practices for recycling and composting to increase knowledge, reduce contamination, and improve community-wide waste-diversion behaviours (paired with simple take-home/online user guides for ongoing reference). Delivering hands-on, practical training (with Q&A) will support residents and local leaders in sorting waste correctly, reducing recycling contamination, and increasing organics diversion. These sessions will complement written user guides by addressing locally relevant "problem items," building participant confidence, and developing community champions who can reinforce correct practices in neighbourhoods, schools, and multi-residential buildings.	
Estimated GHG Reduction Impact (CO2e)	Nominal-Low
Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities, Development Services, Support: Communication
Key Performance Indicators	(1) # of training sessions delivered per year (2) Knowledge gain measured via a quick pre/post survey (3) Decrease in the top contamination items in audits per year
Co-benefits	(1) Lower program costs and better service outcomes (2) Stronger community engagement and shared responsibility (3) Equity and accessibility benefits
Cost	Low (basic program using staff time, free venues, and digital materials)

Resourcing	Annual Budget Allocation
Project Horizon	Short-Term
Cost/Impact Score	Cost: Low Impact: Low Impact Score: 2/10

Recommendation #12 – Community Garden Development	Mitigation **/ Adaptation**
Support community-based community gardens such as those managed by the Rideau Environmental Action League (REAL), schools and others and dedicate suitable land within the community to establish a community garden that fosters local food production, environmental sustainability, and social engagement. Establishing and developing community gardens create shared spaces where residents and local organizations can grow food locally, strengthen community connections, and support sustainability objectives. The garden can also be designed to improve local resilience, using water-wise practices, shade/greening, and soil-building methods that help manage heat and rainfall, while providing a practical venue for education and stewardship**.**	

Lead Department and/or Community Partner(s)	Lead: Community Services Support: Development Services
Key Performance Indicators	(1) # of active community garden plots and participating households/ organizations per season (2) Quantity of the annual harvest (3) # of community garden events/workshops delivered per year
Co-benefits	(1) Improves local food security and access to fresh food (2) Enhances community wellbeing (3) Supports local climate resilience
Cost	Medium
Resourcing	Edible Tree Grant by Tree Canada, REAL, Schools and others
Project Horizon	Short-Term
Cost/Impact Score	Cost: Medium Impact: Medium Impact Score: 6/10

Recommendation #13 – Community Waste Reuse and Exchange Initiatives Mitigation **/ Adaptation**

Continue support of REAL's REAL Deal Reuse store, others in town and support and promote community-based waste exchange initiatives (e.g., swap events, reuse hubs, "take-it-or-leave-it" days, online exchange pages) that enable residents to trade reusable items locally, reducing demand for new products and minimizing waste generation.

Community reuse stores and community waste exchange programs help residents keep usable items in circulation by making it easy to share, trade, or rehome goods locally (e.g., furniture, household items, tools, children's items). By prioritizing reuse over disposal, the Town can reduce waste generation and disposal pressures, strengthen community connections, and improve access to affordable goods for households in need.

Lead Department and/or Community Partner(s)	Lead: Community Services; Communications; Support: Development Services
Key Performance Indicators	(1) # of exchange events hosted per year and/or # of active drop-off days (2) # of participants/households engaged per event and annually (3) weight of goods put into reuse (diversion rate)
Co-benefits	(1) waste prevention and diversion (2) Affordability and equity (3) Community connection and engagement
Cost	Low
Resourcing	Annual Budget Allocation
Project Horizon	Short-Medium Term
Cost/Impact Score	Cost: Low Impact: Medium Impact Score: 4/10

Did You Know? While recycling reduces emissions compared to disposal, reuse avoids the need to manufacture new products altogether. Research shows that extending the life of goods through reuse, repair, and sharing reduces greenhouse gas emissions and material demand more effectively, and often at lower cost, than recycling alone (Canadian Climate Institute, 2023; Smart Prosperity Institute, 2018).

Natural Asset Management

Goals in the Natural Asset Management category in Smiths Falls centre on enhancing the town's natural green spaces while harnessing the many environmental benefits they provide, such as cooling shade and stormwater management.

These natural areas are vital for their carbon sequestration potential, helping to offset emissions while strengthening the community's resilience to climate change and enriching residents' quality of life. The town's goals include expanding the tree canopy and protecting existing natural features through thoughtful mitigation and adaptation, ensuring these green assets continue to thrive for generations.

Recommendation #14 – Municipal Tree Planting Program	Mitigation **/ Adaptation**
Establish a municipal tree-planting program that provides free or subsidized trees to property owners and renters, paired with an education component that promotes best practices in tree selection, planting, and maintenance. A municipal tree-planting program will expand the Town's canopy by making trees more affordable and accessible to residents, while providing practical guidance to ensure trees are planted in the right place and maintained successfully. By increasing shade and improving stormwater performance through added vegetation, this program supports community resilience to climate impacts and reinforces the Climate Action Plan's emphasis on strengthening green assets and nature-based solutions.	

Lead Department and/or Community Partner(s)	Lead: Community Services; Communications; Support: Development Services
Key Performance Indicators	(1) Trees distributed/planted (# per year; cumulative) (2) Survival rate (% surviving after Year 1 and Year 3 (3) Estimated canopy area added (m^2) or projected canopy coverage increase in priority neighbourhoods
Co-benefits	(1) Reduced heat impacts (2) Improved stormwater performance (3) Enhanced biodiversity and neighbourhood liveability
Cost	Medium
Resourcing	Growing Canada's Community Canopy by GMF, RVCA
Project Horizon	Short to Medium Term
Cost/Impact Score	Cost: Medium Impact: High Impact Score: 8/10

Recommendation #15 – Urban Tree Canopy Expansion Plan	Mitigation / Adaptation
Develop a phased Urban Tree Canopy Expansion Plan that begins with a detailed review of the 2024 DRAPE imagery for Smiths Falls to assess current canopy coverage. The plan will include a feasibility study, an evaluation of canopy-expansion targets, and alignment with the Town's Tree Canopy Policy, including the minimum 30% canopy requirement. Conduct a comprehensive analysis of the Town's current tree canopy using 2024 DRAPE data, followed by a feasibility study to determine achievable tree-canopy expansion targets. Review and update the Town's tree-canopy goals, including the 30% minimum set out in the Tree Canopy Policy, and develop a phased implementation strategy that expands the canopy through planting, protection, partnerships, and long-term maintenance planning. This expanded canopy will support climate mitigation by increasing carbon sequestration across the community, lowering net greenhouse gas emissions over time, while also delivering critical adaptation and resilience benefits.	

Estimated GHG Reduction Impact (CO2e)	Low
Lead Department and/or Community Partner(s)	Lead: Community Services; Development Services, Support: GIS/IT support
Key Performance Indicators	(1) Completion of canopy analysis using 2024 DRAPE imagery (2) Updated tree canopy target (3) m^2 of new canopy area added (modelled)
Co-benefits	(1) Urban cooling & heat-island reduction (2) Improved biodiversity & neighbourhood liveability (3) Stormwater infiltration & flood mitigation
Cost	Medium
Resourcing	Growing Canada's Community Canopy by GMF
Project Horizon	Short-Medium Term
Cost/Impact Score	Cost: Medium Impact: Medium Impact Score: 8/10

Recommendation #16 – Mini-Forest Establishment program	**Mitigation / Adaptation**
Support REAL's Mini-Forest project(s) and identify and allocate suitable land for establishing other mini forests, prioritizing small or underutilized parcels where	

feasible, and strengthen these initiatives through collaboration with community partners. Mini forests are a preferred approach because they maximize biodiversity, restore ecological functions in small spaces, and increase carbon sequestration capacity, supporting both climate mitigation and adaptation recommendations. A mini forest, sometimes called a micro-forest, is a small, densely planted patch of native trees and shrubs designed to mimic natural forest succession. This project will establish mini-forests across the community through high-density, multi-layered planting to create fast-growing, high-biodiversity habitats. Mini forests provide meaningful GHG-mitigation benefits by sequestering carbon at higher rates per square metre than conventional tree planting, while simultaneously improving local resilience, ecological health, and community engagement.	
Estimated GHG Reduction Impact (CO2e)	Low
Lead Department and/or Community Partner(s)	Lead: Community Services, Support: Development Services Partner: Community Organization e.g., REAL
Key Performance Indicators	(1) m² of land converted to naturalized mini-forest habitat (2) Estimated carbon sequestration potential per planting area. (3) Observed biodiversity indicators (pollinators, bird species, soil quality improvements).
Co-benefits	(1) Climate mitigation through carbon sequestration (2) Biodiversity gains and ecological restoration (3) Stormwater infiltration and heat-island reduction
Cost	Medium (depending on site size, plant diversity/size/variety, and volunteer involvement)
Resourcing	REAL, Growing Canada's Community Canopy by GMF, Treemendous program by Tree Canada
Project Horizon	Short-Medium Term
Cost/Impact Score	Cost: Medium Impact: Medium Impact Score: 6/10

Did You Know? Urban trees and natural areas function as community assets, providing services similar to built infrastructure. Research shows that urban forests help manage stormwater, reduce heat stress, improve air quality, and extend the lifespan of grey infrastructure by lowering peak runoff and temperature extremes (Canadian Forest Service, 2013; Nowak et al., 2014).

Did You Know? Loss of tree cover, permeable ground, and natural drainage increases the risk of flooding, erosion, and extreme heat. Managing natural assets alongside roads and pipes can help reduce climate risks before they become costly emergencies (Municipal Natural Assets Initiative, 2020; Natural Resources Canada, 2013).

Recommendation #17 – Exploratory Tree-Protection Framework	Mitigation **/ Adaptation**
Explore regulatory tree-protection policy options, including private tree bylaws, clear-cut bylaws, forest conservation regulations, and site-alteration permit controls, to strengthen the Town's ability to protect and enhance the urban tree canopy, preserve natural habitats, improve aesthetic and property-standards outcomes, and support broader climate and biodiversity objectives. Undertake a phased policy review to explore regulatory approaches for protecting trees on private and public property. This exploratory work will assess whether tools such as private-tree bylaws, restricted clear-cutting policies, and improved site-alteration permitting would help the Town maintain and expand canopy coverage, preserve mature trees, safeguard ecological functions, and reinforce natural-heritage policies. The project may result in one or more policy instruments, based on feasibility, community input, and alignment with municipal goals.	

Lead Department and/or Community Partner(s)	Lead: Development Services, Community Services, Support: Bylaw Services
Key Performance Indicators	(1) Completion of a Tree-Protection Policy Options Report. (2) Development of a recommended policy pathway (3) Change in annual net tree loss/gain (post-policy implementation)
Co-benefits	(1) Canopy preservation & climate mitigation: (2) Biodiversity & habitat protection (3) Enhanced neighbourhood character & property standards
Cost	Medium (policy research, staff time, consultation, drafting, legal review)
Resourcing	Growing Canada's Community Canopy by GMF
Project Horizon	Short to Medium Term
Cost/Impact Score	Cost: Medium Impact: Medium Impact Score: 6/10

Education & Governance

Building a community capable of effectively responding to climate change requires improving access to clear, practical resources and information. Recommendations within the Education & Governance category focus on strengthening that access so residents, businesses, and local organizations are better equipped to understand climate impacts and take meaningful mitigation and resilience actions.

By fostering awareness, collaboration, and education, Smiths Falls aims to build a more informed, engaged community that is empowered to participate in local climate solutions and prepared to act as conditions continue to change.

Recommendation #18 – Public Climate-Risk Information and Education Program	Mitigation **/ Adaptation**
To improve public access to clear, reliable information on flooding, extreme heat, and other severe weather events so residents can understand local climate risks and take steps to protect their health, homes, and property. To achieve this, the Town will make climate-risk information easily accessible through its newly updated municipal website, as well as through printed and in-person resources at community hubs such as the Smiths Falls Memorial Community Centre and the Smiths Falls Public Library and through partnerships with community organizations such as REAL and Climate Network Lanark. The Town will also provide more detailed information on heating and cooling locations, including those publicized by the Southeast Public Health Unit (formerly the Leeds, Grenville & Lanark District Health Unit), ensuring residents, especially vulnerable individuals, know where to go during extreme weather events. Examples of actions include creating easy-to-read fact sheets on heat safety and basement flood prevention, offering seasonal preparedness workshops with community partners, sharing real-time advisories through Town communication channels, and distributing preparedness checklists and guides at well-used community facilities.	

Lead Department and/or Community Partner(s)	Lead: Communications; Community Services Support: Development Services
Key Performance Indicators	(1) Attendance at workshops or information sessions (2) % of residents reporting increased preparedness (survey) (3) # of partner-supported outreach events
Co-benefits	(1) Increased public safety (2) Stronger community resilience (3) Support for vulnerable populations
Cost	Low to Medium (communications materials + workshop facilitation)

Resourcing	Annual Budget Allocation
Project Horizon	Short-Term
Cost/Impact Score	Cost: Low- Medium Impact: Medium Impact Score: 6/10

Recommendation #19 – Hydro-Powered Renewable Energy Feasibility Study (Rideau Canal)	**Mitigation /** Adaptation
Explore the feasibility of developing a small-scale hydroelectric generation facility at the former hydro site on the Rideau Canal, recognizing that the site is currently defunct and lacks existing infrastructure, to assess whether a new, modern structure could harness renewable hydro energy to support municipal electricity needs and improve long-term climate resilience. Conduct a comprehensive feasibility study to determine whether the former hydro site on the Rideau Canal could support a modern, small-scale hydroelectric generation system. Since no building or functional water-control infrastructure remains, the study will examine engineering, hydrological, environmental, regulatory, and electrical-grid integration requirements for constructing a new facility. The study will also assess climate-resilient design options, community benefits, potential renewable-energy yield, and cost-benefit considerations.	

Estimated GHG Reduction Impact (CO2e)	Low- Medium
Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities, Support: Development Services and Engineering Consultants
Key Performance Indicators	(1) Completion of feasibility study within defined scope and timeline (2) Projection of renewable-energy output (kW/MW and annual MWh (3) Identification of environmental, heritage, and regulatory constraints.
Co-benefits	(1) Climate-mitigation opportunity (2) Local climate resilience (3) Community identity & education
Cost	Medium (feasibility study), High (if constructed)
Resourcing	Net-Zero Transformation program by GMF
Project Horizon	Short- Medium Term (5-10 yrs)

Cost/Impact Score	Cost: Medium Impact: Medium Impact Score: 6/10

Corporate Sustainability Recommendations

The corporate Climate Action Plan identifies five key categories of sustainability recommendations, grounded in the Plan's guiding principles: **Municipal Buildings & Facilities, Municipal Fleet & Equipment, Corporate Waste Management, Land Use Planning & Natural Asset Management, and Municipal Leadership & Governance.** Together, these categories form a focused framework that guides the Town's efforts to reduce greenhouse gas emissions, enhance operational efficiency, and demonstrate leadership in climate action across municipal operations.

Municipal Buildings & Facilities

Municipal buildings and facilities account for about 26% of Smiths Falls' corporate emissions, driven largely by natural gas for heating and electricity for daily operations. This category includes all Town-owned buildings and facilities where emissions arise either directly from the combustion of fuels in boilers and furnaces or indirectly from the use of grid-supplied electricity.

Energy consumption and emissions associated with water and wastewater infrastructure, including lift stations, pumping stations, reservoirs, storage tanks, and treatment facilities, are accounted for separately within the Water and Wastewater sectors. This separation ensures accurate measurement and enables targeted mitigation planning across municipal operations.

Recommendation #20 – 100% Renewable Electricity for Municipal Buildings & Facilities Consider transitioning municipal buildings and facilities to 100% renewable energy for their electricity needs by installing on-site solar PV (where feasible), and other suitable renewable energy systems, supported by complementary procurement approaches (e.g., renewable electricity supply/attributes) where on-site generation cannot meet full demand. Advancing municipal facilities to 100% renewable electricity will reduce operational emissions, demonstrate municipal leadership, and support the CAP's guiding principles of prioritizing clean, renewable energy and improving energy efficiency. The Town will assess which facilities are best suited for on-site renewable generation (particularly solar PV), develop a phased implementation plan, and combine on-site projects with renewable electricity procurement options where necessary to meet remaining electricity needs.	**Mitigation /** Adaptation
Estimated GHG Reduction Impact (CO2e)	Medium

Lead Department and/or Community Partner(s)	Lead: Community Services Support: Asset Management and Finance
Key Performance Indicators	(1) % of municipal electricity matched with renewables (on-site generation + renewable procurement) (2) # of installed renewable capacity (kW) and # of facilities with on-site systems (3) GHG reduction proxy (kWh generated × grid emissions factor; reported as indicative)
Co-benefits	(1) Lower long-term operating costs and price stability (2) Improved resilience at priority facilities (3) Improved energy security
Cost	High (capital costs for PV systems, electrical upgrades, structural/roof considerations, design/permits, monitoring)
Resourcing	Net-Zero Transformation program by GMF
Project Horizon	Short- Medium Term (5-10 yrs)
Cost/Impact Score	Cost: High Impact: High Impact Score: 8/ 10

Recommendation #21 – Deep Retrofit Readiness for Municipal Buildings

Mitigation / Adaptation

Undertake updated energy/decarbonization feasibility assessments for all municipal buildings and facilities (building on the 2017 Honeywell audits) to confirm current performance, identify "deep retrofit" packages where necessary, and develop a phased retrofit plan that improves energy efficiency and resilience (e.g., high-performance insulation, LED lighting, and smart energy management controls).

Building on the Town's existing (2017) facility audits, the Town will complete targeted feasibility work to determine which municipal buildings require deeper retrofits to reduce emissions, lower operating costs, and improve resilience to extreme weather. The outcome will be a prioritized, fundable retrofit roadmap that bundles measures such as building-envelope improvements, LED lighting, and smart energy management into phased projects aligned with capital planning and CAP reporting.

Estimated GHG Reduction Impact (CO2e)	Medium
Lead Department and/or Community Partner(s)	Lead: Community Services; Support: Asset Management and Finance

Key Performance Indicators	(1) # and % of municipal facilities assessed/updated (2) Retrofit plan completed and approved by Council (3) Estimated tCO_2e reductions (by facility and portfolio) and annual tracking of realized savings post-implementation.
Co-benefits	(1) Lower operating costs and improved budget predictability (2) Improved occupant comfort and health (3) Greater operational resilience
Cost	High (if a portfolio-wide deep retrofit feasibility study is completed across multiple facilities with detailed modelling and site investigations)
Resourcing	Net-Zero Transformation program by GMF
Project Horizon	Short- Medium Term (5-10 yrs)
Cost/Impact Score	Cost: High Impact: High Impact Score: 8/ 10

Recommendation #22 – Municipal Battery Energy Storage Systems (BESS) **Mitigation /** Adaptation

Explore the feasibility of municipal-scale Battery Energy Storage Systems (BESS) to improve energy resilience and grid support, recognizing that BESS can be deployed in both urban and rural contexts in Ontario, and evaluate the most suitable scale and siting approach for Smiths Falls (e.g., behind-the-meter municipal facilities, distribution-connected "community-scale," or partnership-delivered projects)

A Battery Energy Storage System (BESS) is a set of large batteries and supporting equipment that stores electricity (typically from the grid or renewable generation) when supply is plentiful, or demand is low, and then discharges it when demand is higher or when power is needed for reliability and resilience. This project will assess whether a municipal-scale BESS could help Smiths Falls improve energy resilience at critical facilities, reduce peak electricity demand, and support local grid stability, either as a Town-owned system at municipal sites or through a partnership-delivered installation, while ensuring siting, safety, approvals, and lifecycle responsibilities are clearly addressed.

Estimated GHG Reduction Impact (CO2e)	Medium
Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities. Development Services, Support: Hydro One Inc.

Key Performance Indicators	(1) Completion of a BESS feasibility study (site + sizing + operating model) (2) Identification of priority municipal facilities for resilience/backup benefits. (3) Estimated peak demand reduction at participating municipal sites (kW)
Co-benefits	(1) Energy resilience for residents (2) Grid stability and potential cost control (3) Supports clean-energy integration
Cost	Medium (study) → High (Development), depending on size and interconnection
Resourcing	Net-Zero Transformation program by GMF
Project Horizon	Short- Medium Term (5-10 yrs)
Cost/Impact Score	Cost: Medium (study) → High (if constructed) Impact: Medium Impact Score: 6/10

Recommendation #23 – Municipal Energy Benchmarking Program (ENERGY STAR Portfolio Manager)

Mitigation / Adaptation

Implement energy benchmarking for all Town-owned buildings using the (free) ENERGY STAR® Portfolio Manager® tool to track energy use consistently, spot underperforming buildings, and guide practical upgrades that cut operating costs and reduce greenhouse gas (GHG) emissions over time.

The Town is taking a practical "measure-then-improve" step by benchmarking all Town-owned buildings in ENERGY STAR® Portfolio Manager®, a free, secure, web-based tool that turns monthly utility bills into clear performance metrics (like Energy Use Intensity—EUI) so we can track energy use consistently, compare buildings, and quickly spot underperformers. Because it uses whole-building utility meters, it captures energy across major systems—heating/cooling & ventilation, lighting, water heating, controls, and plug loads/equipment—without needing device-by-device monitoring.

Portfolio Manager can track common municipal energy sources (e.g., electricity and natural gas, plus other fuels/district energy where relevant) and calculate/track building-related GHG emissions (CO_2e) tied to energy use, supporting better data management, consistent stewardship, and transparent reporting as efficiency projects are implemented.

Estimated GHG Reduction Impact (CO2e)	Low
Lead Department and/or Community Partner(s)	Community Services; Public Works and Utilities
Key Performance Indicators	(1) % of Town buildings benchmarked in ENERGY STAR Portfolio Manager (2) Energy-use intensity (EUI) year-over-year change (3) Annual GHG emissions reductions attributable to efficiency measures
Co-benefits	(1) Improved financial performance (2) More effective capital planning (3) Enhanced climate accountability
Cost	Low (Portfolio Manager is free).
Resourcing	Annual Budget Allocation
Project Horizon	Short- Term
Cost/Impact Score	Cost: Low Impact: Low Impact Score: 2/10

Municipal Fleet and Equipment

Municipal fleet and equipment account for just under 10% of overall corporate emissions in Smiths Falls, encompassing all Town-owned and operated vehicles. The inventory excludes indirect emissions from electricity used by plug-in electric vehicles to avoid double-counting, as these emissions are reported within the Municipal Buildings & Facilities sector.

Recommendations in this category focus on transitioning the municipal fleet toward lower-emission technologies, expanding EV charging capacity, and promoting the use of energy-efficient equipment. These efforts aim to reduce fuel consumption and emissions while modernizing fleet operations in alignment with the Town's broader sustainability and climate goals

Recommendation #24 – Municipal Hybrid Fleet Transition **Mitigation /** Adaptation

Develop a policy to guide the transition of large municipal vehicles to hybrid technologies, recognizing that global EV availability remains uncertain amid shifting geopolitical conditions. The Town will closely monitor the evolution of Zero-Emission Vehicle (ZEV) markets and adjust its fleet strategy accordingly, while improving systems for collecting operational emissions and lifecycle data to support evidence-based decision-making.

To support a practical, flexible, and climate-aligned approach to municipal fleet modernization, the Town will focus on transitioning large fleet vehicles (e.g., plow

trucks, fire apparatus, heavy equipment, utility trucks) to hybrid technologies where feasible, while monitoring EV market developments to determine when full electrification may become viable. The policy will also strengthen the Town's internal systems for tracking fuel use, emissions, maintenance patterns, and lifecycle costs, enabling informed decision-making as technologies and markets evolve.	
Estimated GHG Reduction Impact (CO2e)	Medium
Lead Department and/or Community Partner(s)	Lead: Public Works & Utilities, Community Services, Fire, Support: Asset Management and Finance
Key Performance Indicators	(1) % of the large municipal vehicle fleet evaluated for hybrid readiness (2) Number of hybrid heavy-duty vehicles procured (3) Annual GHG reductions associated with hybrid adoption.
Co-benefits	(1) Reduced operating emissions and fuel consumption in high-impact fleet categories. (2) Improved service reliability (3) Smart, future-proof planning: the Town.
Cost	High (low vehicle duty cycle; limited gains from hybrid or data-system pilots)
Resourcing	Net-Zero Transformation program by GMF
Project Horizon	Short- Medium Term
Cost/Impact Score	Cost**:** Medium Impact**:** Medium Impact Score: 6 /10

Recommendation #25 – End-of-Life Equipment Management program	Mitigation **/ Adaptation**
Develop an End-of-Life (EOL) Management Plan for equipment across Public Works, Utilities, Fire and Community Services to standardize asset retirement, maximize recycling and circularity opportunities, reduce waste, and ensure compliance with provincial waste-diversion and material-management directives. To create a consistent, transparent, and cost-effective system for managing the retirement, recycling, reuse, and final disposal of municipal equipment, the Town will develop a cross-departmental EOL Management Plan. This plan will inventory all equipment categories; identify safe, sustainable EOL pathways; outline reuse and refurbishment options; and establish procurement practices that consider end-of-life impacts. The initiative supports circularity, reduces waste, improves	

material recovery, and ensures alignment with provincial waste-reduction requirements.	
Lead Department and/or Community Partner(s)	Lead: Community Services; Public Works & Utilities, Fire; Support: Asset Management
Key Performance Indicators	(1) % of equipment retired using the standardized EOL process, (2) % of equipment diverted from landfill. (3) Annual reporting on recovered materials (type and tonnage).
Co-benefits	(1) Reduced operational inefficiencies: less time spent managing ad-hoc disposal. (2) Increased sustainability and waste diversion (3) Better asset planning and transparency
Cost	Medium
Resourcing	Annual Budget Allocation
Project Horizon	Short-Term
Cost/Impact Score	Cost: Low-Medium Impact: Medium Impact Score: 4/10

Corporate Waste Management

Corporate Waste Management refers to the Town's efforts to reduce greenhouse gas emissions and environmental impact by responsibly managing the waste generated through municipal operations. While water and wastewater treatment facilities are corporate assets, their community-wide scale and function place the associated sustainability goals within the Community Climate Action Plan; however, the emissions produced by these facilities are included in the Corporate Climate Action Plan because they are owned and operated by the Town.

Recommendations in this sector focus on adopting green waste-management practices, prioritizing sustainable materials, reducing consumption, and diverting waste from landfills to help shrink the Town's corporate environmental footprint.

Recommendation #26 – Municipal Water Refilling Stations	Mitigation **/ Adaptation**
Continue installing water refill stations across municipal buildings and facilities, building on existing work, to encourage the use of reusable water bottles and reduce single-use bottled water consumption. Installing water refill stations in municipal buildings makes it easier for staff and the public to choose reusable bottles by providing convenient, reliable access to drinking water in high-traffic locations. This action supports waste reduction and	

sustainable resource use by reducing single-use plastic-bottle consumption and normalizing low-waste practices across municipal facilities.	
Lead Department and/or Community Partner(s)	Lead: Community Services; Support: Communications
Key Performance Indicators	(1) # of refill stations installed (cumulative, by facility type (2) Estimated usage (where units have counters: refills/month and litres dispensed (3) reduction in bottle waste observed in facility waste audits
Co-benefits	(1) Reduced waste and litter from single-use bottles (2) Lower operating costs over time (3) Public health and comfort benefits
Cost	Medium (incremental expansion across multiple sites; per-unit costs vary based on plumbing/electrical modifications and fixture type)
Resourcing	Annual Budget Allocation
Project Horizon	Short- Term
Cost/Impact Score	Cost: Medium Impact: Low Impact Score: 2/10

Natural Asset Management

Natural asset management plays an essential role in supporting sustainable growth by protecting green spaces, strengthening ecosystem health, and integrating climate-adaptation strategies across Town-managed natural assets. Recommendations in this category focus on enhancing natural features, expanding and protecting the urban tree canopy, and advancing nature-based solutions that help reduce greenhouse gas emissions while building long-term community resilience. These efforts ensure that municipal assets contribute positively to environmental health and climate readiness by restoring natural systems, improving biodiversity, and reducing heat, flooding, and other climate-related risks.

Recommendation #27 – Conversion of Town-owned open space/green fields to pollinator food habitats Explore and implement the conversion of municipally-owned open space/green fields (where appropriate) into pollinator habitat and/or community food-production space, using site-specific design and maintenance practices that improve biodiversity, resilience, and community wellbeing.	Mitigation **/ Adaptation**

Converting select municipally-owned open spaces from conventional turf/green field conditions to pollinator habitat and/or food-production areas can provide measurable ecological and community benefits while supporting the Climate Action Plan's emphasis on nature-based solutions. This approach can enhance local biodiversity, improve stormwater absorption and heat mitigation through added vegetation and healthier soils, and create opportunities for community stewardship and education.

Lead Department and/or Community Partner(s)	Lead: Community Services; Asset Management; Support: Development Services
Key Performance Indicators	(1) Area converted (m^2 or hectares) and # of sites converted (pollinator habitat and/or food production). (2) Reduction in mowing frequency/area (where appropriate) while actively managing the risk of increased invasive species associated with naturalization. (3) # of plots/participants and estimated harvest or participation day
Co-benefits	(1) Biodiversity gains (pollinator support) and stronger ecosystem health (2) Reduced heat and improved stormwater performance (3) Community wellbeing and education through
Cost	Medium (site prep, seed/plant material, signage, minor infrastructure)
Resourcing	Growing Canada's Community Canopy by GMF
Project Horizon	Short- Medium Term (5-10 yrs)
Cost/Impact Score	Cost: Medium Impact: Medium Impact Score: 6/10

Recommendation #28 – Natural Asset Master Plan (NAMP) Mitigation **/ Adaptation**

Develop a Natural Asset Master Plan (NAMP) to integrate nature-based solutions into municipal asset management by identifying vulnerabilities in natural assets and outlining adaptation strategies that reduce environmental and financial risk.

A Natural Asset Master Plan will provide the Town with a structured, evidence-based approach to manage natural assets (e.g., trees, woodlots, wetlands, riparian areas, and other green infrastructure) as part of its overall asset management practice. By identifying where natural assets are most vulnerable to climate hazards and clarifying their role in delivering services (e.g., stormwater

retention, erosion control, and cooling shade), the Plan will support better investment decisions that reduce long-term risk and strengthen community resilience through nature-based solutions.	
Lead Department and/or Community Partner(s)	Lead: Development Services; Support: Asset Management; Community Services and Public Works & Utilities
Key Performance Indicators	(1) NAMP completed and adopted (2) % of Town-managed natural assets mapped and categorized (3) % of priority natural assets with vulnerability/risk ratings and identified adaptation responses
Co-benefits	(1) Reduced flood/erosion and heat risks (2) Lower lifecycle costs (3) Improved biodiversity and community wellbeing
Cost	Low- Medium (plan development covering inventory consolidation, mapping, risk screening, and integration recommendations)
Resourcing	Local Leadership for Climate Adaptation– Climate Ready Plans and Processes by GMF
Project Horizon	Short-Term
Cost/Impact Matrix	Cost: Medium Impact: High Impact Score: 8/10

Municipal Leadership & Governance

Effective climate governance is crucial for embedding sustainability throughout municipal operations. Recommendations in this category focus on instilling a climate-conscious perspective across Town leadership and governance. They aim to make environmental stewardship a core part of decision-making and municipal operations, ensuring that climate considerations guide policies, planning, and daily management. This approach strengthens Smiths Falls' commitment to sustainability and resilience at every level of government.

Recommendation #29 – Climate-lens Section Council Report Integration Modify the Council report template to include a standardized '*Climate Lens*' section supported by a simple and reliable assessment model. This will enable staff to evaluate environmental impacts, climate risks, and sustainability implications consistently, reducing the risk of misinformed decisions and preventing delays in the approval process.	Mitigation **/ Adaptation**

Adding a *Climate Lens* section to Council reports will ensure that climate considerations, greenhouse gas implications, climate risks, and resilience opportunities are consistently assessed and documented as part of municipal decision-making. This standardizes how climate factors are considered across departments and helps Council compare options transparently, supporting the Plan's intent to embed climate action into policies, projects, and purchasing decisions.

Lead Department and/or Community Partner(s)	Lead: Development Services; Corporate Services; Support: Communications
Key Performance Indicators	(1) Template adoption: *Climate Lens* section approved and implemented (2) % of Council reports including a completed *Climate Lens* section (3) # and % of reports where the *Climate Lens* section led to a documented design change, mitigation measure, or resilience enhancement (tracked annually)
Co-benefits	(1) More consistent and transparent decision-making across departments (2) Reduced long-term costs and risks (3) Stronger accountability and public trust
Cost	Low
Resourcing	Annual Budget Allocation
Project Horizon	Short-Term
Cost/Impact Score	Cost: Low Impact: Medium Impact Score: 4/10

Recommendation #30 – Climate Integrated Municipal Emergency Plan Update

Mitigation **/ Adaptation**

Update the Municipal Emergency Plan to integrate a comprehensive Climate Risk Assessment and establish protocols specifically designed for major natural disasters and extreme weather events.

A Municipal Emergency Plan outlines how the Town prepares for, responds to, and recovers from emergencies, providing clear roles, procedures, and coordination mechanisms during disasters. Updating the Plan with a climate-focused lens is essential as extreme weather events, such as flooding, heatwaves, severe storms, and prolonged power outages, become more frequent and severe. This update will ensure the Town's emergency framework is

climate-resilient, meaning it reflects current climate projections, identifies climate-related risks, and incorporates protocols that protect residents, infrastructure, and essential services under future climate conditions.	
Lead Department and/or Community Partner(s)	Lead: Fire, Communications, Support: Development Services and Community Services
Key Performance Indicators	(1) Completion of an updated Municipal Emergency Plan with climate-risk integration. (2) Completion of a Climate Risk Assessment. (3) Number of new or revised hazard-specific response protocols.
Co-benefits	(1) Improved public safety (2) More resilient infrastructure and services (3) Stronger inter-agency coordination: unified response between Town, Public Health, first responders, and utilities.
Cost	Medium (depending on the scope of risk analysis and required consultant support)
Resourcing	Annual Budget Allocation
Project Horizon	Short-Term
Cost/Impact Score	Cost: Medium Impact: High Impact Score: 8/10

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CHAPTER 4

Implementation

Implementing our Climate Action Plan

Implementation

This Climate Action Plan outlines several recommendations designed to guide Smiths Falls on a practical path toward a more sustainable future. At its heart are both adaptation and mitigation strategies, actions to help our community respond to local climate impacts and risk, and efforts that lower greenhouse gas emissions for lasting climate benefits.

The Town will implement these strategies in conjunction with provincial, and federal initiatives, adapting and innovating as new solutions emerge and the climate challenge evolves. Through collective effort, the Town aims to make real progress for both the environment and the people who call Smiths Falls home.

Implementation Strategy

The successful implementation of this Climate Action Plan hinges on a clear, coordinated strategy that aligns municipal efforts with community needs and resources. This approach embraces collaboration, innovation, and continuous learning to address both emissions reduction and climate resilience. By setting measurable targets, fostering partnerships, and ensuring transparent progress tracking, Smiths Falls will actively work toward a sustainable and resilient future. The following measures are recommended to support the implementation and ongoing evolution of the Climate Action Plan:

1. **Leveraging Funding**

    a. The Town will establish clear links between municipal operations and climate recommendations to maximize funding opportunities. This active integration will enhance the Town's ability to secure external funding and drive impactful climate action. By embedding climate considerations into daily operations, Smiths Falls will lead by example and strengthen its sustainability efforts.

    b. The Town will develop an internal database of available funding packages to support the timely identification and pursuit of funding opportunities that align with Smiths Falls' climate priorities. Additionally, the Town will utilize external funding databases, such as those offered by the Federation of Canadian Municipalities (FCM), to access a wide range of grants, loans, and capacity-building programs designed to advance municipal climate action and resilience.

2. **Building Community Partnerships**

    a. The Town will continue building and nurturing strong partnerships with local community groups, businesses, and organizations to advance climate action. By leveraging the resources, manpower and local expertise from our existing networks like Climate Network Lanark and the Rideau Environmental Action League, Smiths Falls will deepen community connections, foster collaboration, and amplify support

for sustainability initiatives. These partnerships will be vital in creating a unified and inclusive approach to achieving the Town's climate recommendations.

3. Municipal Capacity Building

a. The Development Services Department, working with the Human Resources Department, will develop and offer learning opportunities, such as workshops and webinars, to help staff and members of Council build their understanding of environmental issues and climate change. HR will provide support to ensure the training aligns with the Town's existing training processes and accessibility standards. These efforts will help bring climate considerations into day-to-day municipal operations and decision-making.

b. Create an Environmental Coordinator position to support the Climate Action Plan by coordinating climate work, helping departments and community partners stay connected, and managing grants for sustainability projects. The position will start as a part-time, one-year pilot, with a review at the end of the year to determine whether it becomes permanent and at what level. Adding this role will help build the Town's internal capacity, improve teamwork on climate initiatives, and keep efforts aligned with the Town's long-term goals.

c. The Climate Protection Working Group (CPWG), in its advisory role to Council, will continue to support the development and implementation of the Climate Action Plan by working collaboratively with Town staff. Within its Council-approved mandate, the CPWG will provide advice and recommendations, help identify partnerships, support community engagement, and assist with research and grant opportunities. While staff remain responsible for municipal operations, the CPWG's participation will strengthen the Town's capacity by expanding community involvement, sharing technical expertise, and helping advance climate initiatives across the municipality.

4. Institutionalizing Climate Action

a. Develop a Climate Lens policy, which is a tool to assess a project's greenhouse gas emissions and climate resilience. Developing and implementing a climate lens policy will institutionalize a consistent approach to assessing the climate impacts of capital works and policies. This policy will ensure that all projects systematically evaluate greenhouse gas emissions, climate risks, and resilience opportunities, helping the Town make informed decisions that align with its sustainability goals and long-term climate commitments.

b. Updating the Council Report template to include a "climate lens" section. Incorporating a "climate lens" reporting section in Council reports is important because it ensures that all municipal decisions systematically consider their impact

on greenhouse gas emissions and community resilience. This practice embeds environmental stewardship into the Town's governance, helping to institutionalize climate action and support long-term sustainability goals.

c. To ensure the Climate Action Plan remains a living, relevant, and effective document, its goals and progress are formally revisited with each new term of council. In the year following a municipal election, the incoming Council undertakes a comprehensive review of the CAP to reaffirm, reinvest in, and actively engage in its implementation. This structured transition process creates a clear succession framework, ensuring that climate action continues seamlessly even as municipal leadership changes. Each new Council is equipped with an updated understanding of current climate risks, progress achieved to date, and evolving community needs, enabling elected officials to realign priorities, renew commitments, and refine actions as conditions change.

5. Community Engagement & Education

a. Staff, working in consultation with the CPWG and local community partners, will build capacity by creating and expanding opportunities for community engagement and by providing accessible educational resources. This work may include hosting public workshops and information sessions, partnering with local organizations on climate-focused events, developing clear guidance materials for residents, and offering online tools that make sustainability information easy to find and use. These efforts will help residents and community partners take part in climate initiatives and strengthen overall community resilience.

b. Staff will develop an online environmental hub on the Town's website to make climate information easy for residents to access. The hub may include clear guidance materials, local project updates, interactive maps, links to grants and programs, and other practical tools that support residents in taking climate action. This centralized resource will help people stay informed and make it easier for the community to participate in the Town's climate initiatives.

6. Plan Review and Updates

a. To keep the Climate Action Plan practical and responsive, the Town will review progress regularly and update priorities as needed. Annual reporting will help track implementation and results, and the Plan will be updated on a five-year cycle to reflect new data, funding opportunities, technology changes, and community priorities. Any proposed changes to CAP targets or major actions will be brought forward through the appropriate staff process and presented to Council for consideration as part of the Town's normal decision-making and budget cycle.

Climate Goal Prioritizing

The prioritization of actions is expected to evolve over time in response to the emerging needs of the community and the shifting landscape of climate change, adaptive responses, and solutions that facilitate greenhouse gas reduction.

These priorities will be assessed and updated based on the following criteria:

- Alignment and integration of departmental work and priorities with this Plan.
- Availability of external resources and funding opportunities.
- Level of impact to enhance resilience to climate change.
- Level of impact in reducing greenhouse gas emissions from corporate operations.
- Ability to improve outcomes for equity-deserving groups.

People with lower incomes, existing health conditions, or facing social discrimination are often more vulnerable to climate change impacts because they have fewer resources to protect themselves and recover from extreme weather events. Therefore, this Plan prioritizes equity, fairness, and affordability to ensure that climate actions address the needs of the most vulnerable in the community.

Cost/Impact Matrix

The Cost/Impact Matrix helps the Town make clear, consistent decisions during implementation by showing, at a glance, which recommendations deliver the greatest climate benefit for the effort and investment required, while recognizing that priorities will evolve as community needs, climate risks, and solutions change over time. It supports transparent trade-offs across departments (e.g., "quick wins" with low cost and strong impact versus "strategic investments" that require higher resources but provide major long-term benefits) and creates a repeatable way to compare very different projects on a common footing.

The matrix is updated using the Plan's stated criteria—alignment with departmental priorities, availability of external funding, expected resilience benefit, expected corporate GHG-reduction benefit, and the ability to improve outcomes for equity-deserving groups—so that actions that best protect vulnerable residents (including those with lower incomes, existing health conditions, or facing discrimination) can be prioritized when impacts and recovery capacity are unequal. This ensures implementation decisions remain responsive to evolving risks, funding opportunities, and community needs, while still anchored in a consistent and transparent evaluation framework.

Heat Map: Prioritization Matrix (Cost vs. Impact)

The Prioritization Matrix helps the Town compare recommendations by plotting their Impact Score, calculated as 2 × max(Mitigation, Adaptation), against their relative Cost to guide sequencing during implementation.

Colour shading highlights priority levels at a glance, with **light green** showing high-impact, low/medium-cost actions, **dark green** identifying high-impact strategic investments, **yellow**

indicating medium-impact programmatic items, and **red** signalling lower-impact actions with higher cost. Together, this visual tool helps illuminate where early efforts can deliver the strongest climate benefits and where more complex actions may require longer-term planning or dedicated funding, making implementation decisions clearer, more strategic, and easier to communicate.

	Impact: High (8–10)	**Impact: Low/Medium (0–6)**
Cost: Low/Medium	• #2 – LID & Green Building Standards CIP (Impact 8) • #9 – Climate Lens in Transportation Master Plan (Impact 8) • #14 – Municipal Tree Planting Program (Impact 8) • #15 – Urban Tree Canopy Expansion (Impact 8) • #16 – Mini-Forest Program (Impact 8) • #28 – Natural Asset Master Plan (Impact 8) • #30 – Climate-Integrated Municipal Emergency Plan Update (Impact 8)	• #1 – Municipal Retrofit Program (Impact 6) • #3 – Rain Barrel Program (Impact 6) • #5 – On-Demand Transit Options (Impact 6) • #6 – EV Charging Stations (Low Impact 4) • #11 – Green Waste Training Sessions (Impact 2) • #12 – Community Garden Development (Impact 6) • #13 – Community Waste Reuse/Exchange (Impact 4) • #18 – Public Climate-Risk Info Program (Impact 6) • #19 – Hydro Feasibility Study (Impact 6) • #23 – Municipal Energy Benchmarking (Impact 2) • #26 – Municipal Water Refilling Stations (Impact 2) • #27 – Pollinator/Food Habitat Conversion (Medium Impact 6) • #29 – Climate-Lens Section in Council Reports (Impact 4) • #22 – BESS (Medium Impact (6)
Cost: High	• #7 – Climate-Responsive Maintenance Budget Update (Impact 8) • #8 – Climate Lens Integration for Roads Needs Study (Impact 8) • #20 – 100% Renewable Electricity for Municipal Buildings (Impact 8) • #21 – Deep Retrofit Readiness for Municipal Buildings (Impact 8)	• (#10) Municipal Organic Waste Reduction Program (Green Bin): (Impact 6)

CHAPTER 5

Reporting & Monitoring

Monitoring our Climate Commitments

Reporting and Monitoring

Monitoring and reporting are central to the Climate Action Plan. They provide the structure needed to track progress, evaluate what is working, and support informed decision-making. Clear and regular reporting also strengthens accountability, keeps community partners engaged, and helps ensure that climate commitments remain aligned with community needs and municipal objectives.

Oversight of the Plan rests with staff in the Development Services Department, supported by a designated Environmental Coordinator and informed by the Climate Protection Working Group (CPWG), the Town's environmental advisory body. Reports will be brought to Council as needed. Actions will be assigned across departments and carried out by staff or the Environmental Coordinator, ensuring coordinated input from all service areas and maintaining consistency in how climate initiatives are implemented. This collaborative, organization-wide approach reinforces internal cooperation, deepens partnerships with residents and community groups, and integrates climate considerations into everyday municipal operations and decision-making.

The CAP's monitoring and reporting system brings together several core components: updated emissions inventories, Plan-specific performance indicators, and clearly defined governance roles. Together, these elements create a structured process through which staff and the Environmental Coordinator collect and evaluate climate-related data, measure progress toward targets, and prepare annual updates for Council and the community. Ongoing engagement with residents, community partners, and the CPWG, combined with scheduled reviews of priorities, helps ensure the Plan stays aligned with evolving local needs and remains effective in addressing long-term environmental and social challenges.

Reporting Structure

The following measures support the effective implementation and reporting of the Climate Action Plan by strengthening coordination across departments, enhancing community partnerships, improving data and performance tracking, and ensuring transparent, consistent progress reporting to Council and the public:

- **Environmental Coordinator:** An Environmental Coordinator will support implementation and reporting for the Climate Action Plan by compiling emissions data, tracking PCP milestones and performance indicators, and coordinating cross-departmental input (e.g., Public Works, Community Services) in consultation with community partners. The Coordinator will work with staff to develop and refine climate action recommendations, which will be brought forward to Council through the appropriate staff channels. The Coordinator will prepare the annual CAP report and help ensure consistent project implementation across the organization. The appropriate departmental placement for this role has not yet been determined.

- **Annual CAP Report:** Each year, staff or the designated Environmental Coordinator will prepare a Climate Action Plan progress report for CPWG review and Council consideration.

The report will summarize progress on actions, key performance indicators, emissions tracking, funding secured, and priority activities planned for the next year. A public-facing summary will be published online to support transparency and community engagement.

- **Community Engagement and Public Transparency:** Staff or the Environmental Coordinator, working with the CPWG and community partners, will support climate-related outreach by posting annual reports, maintaining online dashboards, preparing clear program materials, and using surveys where appropriate. These efforts help build trust, broaden participation, and ensure residents have easy access to climate information.

- **Mid-Cycle Review and CAP Updates:** Staff or the Environmental Coordinator, working with the CPWG and community partners, will support climate-related outreach by posting annual reports, maintaining online dashboards, preparing clear program materials, and using surveys where appropriate. These efforts help build trust, broaden participation, and ensure residents have easy access to climate information.

- **Performance Indicators and Data Management:** To support consistent and reliable reporting, the Environmental Coordinator will maintain a centralized set of CAP performance indicators and supporting datasets. These indicators will be updated annually and used to guide departmental planning, resource allocation, and implementation sequencing. Standardized templates and methods will be applied to track project status, assumptions, and results, ensuring consistency and comparability over time.

Photo Credit 5 Brooke Hutton

CHAPTER 6

Glossary and References

Climate Glossary and Bibliography

Glossary

Active Transportation: Modes of travel that involve physical activity, such as walking, cycling, or using mobility devices, reducing reliance on motor vehicles.
Adaptation: Actions taken to prepare for and respond to the impacts of climate change, reducing risks and increasing community resilience.
Baseline Emissions: The total greenhouse gas emissions measured at a specific time, serving as a reference for tracking reductions.
Business-As-Usual (BAU): A forecast of future emissions assuming no additional climate actions beyond current policies.

Carbon Sequestration: The process of capturing and storing atmospheric carbon dioxide in natural sinks like forests, soils, and wetlands to offset emissions.
Climate Lens: A decision-making tool used to assess projects for greenhouse gas emissions and climate resilience.
Emission Reduction Targets: Specific goals set to decrease greenhouse gas emissions within a defined timeframe.
Greenhouse Gas (GHG); Gases such as carbon dioxide and methane that trap heat in the atmosphere, driving global warming.
Green Infrastructure: Natural or engineered systems such as wetlands, urban forests, or green roofs used to manage stormwater and enhance resilience.

Mitigation: Efforts to reduce or prevent greenhouse gas emissions to limit climate change.
Natural Heritage: Protected natural areas and ecosystems that support biodiversity and provide environmental benefits.
Net-Zero: Achieving a balance where greenhouse gas emissions released are equal to emissions removed from the atmosphere.

Renewable Energy: Energy sourced from naturally replenishing resources, including solar, wind, and hydroelectric power.
Resilience: The capacity of a community or system to cope with, recover from, and adapt to climate-related stresses.
Scope 1 Emissions: Direct greenhouse gas emissions from sources owned or controlled by the municipality or organization.
Scope 2 Emissions: Indirect emissions from purchased electricity consumed by the municipality or organization.
Scope 3 Emissions: All other indirect emissions occurring in the value chain outside municipal control, such as supply chain activities.
Sustainability: Meeting the needs of the present without compromising the ability of future generations to meet theirs.
Waste Diversion: The process of redirecting waste from landfill through reuse, recycling, or composting to reduce environmental impact.

Waste Management: Practices to reduce, reuse, recycle, and dispose of waste in an environmentally responsible way.
Water Infrastructure: Systems and facilities that provide clean water supply and manage wastewater for community health.
Zero-Emission Vehicles: Vehicles that emit no greenhouse gases from their operation, typically powered by electricity or hydrogen.

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