Corporate Climate Action Plan & Greenhouse Gas Emissions Reduction Target 2020-2025

Town of New Glasgow

New Glasgow
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ACKNOWLEDGEMENTS

This project was made possible thanks to funding from the Federation of Canadian Municipalities - Municipal Climate Innovation Program.

Support and guidance were provided through ICLEI Canada and the Global Covenant of Mayors - Canadian Showcase Cities Pilot Project.

This report was prepared by Rachel Mitchell, Climate Change Coordinator.

Thank you to the Climate Change Steering Committee, Lisa MacDonald - Chief Administrative Officer, and Earl MacKenzie - Director of Engineering & Public Works, for their oversight in the development of this plan.

FCM FEDERATION OF CANADIAN MUNICIPALITIES FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

ICLEI Local Governments for Sustainability

GLOBAL COVENANT of MAYORS for CLIMATE & ENERGY

New Glasgow flourish

EXECUTIVE SUMMARY

Climate change is a pressing issue and demands urgent and transformational action. Climate change is already happening and having effects on social, natural and economic systems. How we currently operate is no longer sufficient in the context of the global climate crisis. We have the opportunity to harness the disruption of climate change, to move beyond the status quo and shape our Town to be a leader, adopting new thinking and bold action to drive emission reductions and enhance community resilience.

The Corporate Climate Action Plan outlines the Town of New Glasgow's climate and sustainability initiatives to achieve significant emission reductions and support the transition to a low carbon community. The plan details 20 total actions across the five sectors; Buildings, Fleet, Streetlights & Traffic Signals, Water & Wastewater, and Solid Waste. These main actions are accompanied by recommended implementation timelines to ensure continued progress. A high level implementation and monitoring framework is outlined to guide annual reporting, greenhouse gas (GHG) emissions tracking, and review of the plan and actions. This is a living document, as circumstances change, both locally and provincially the Town of New Glasgow Climate Change Steering Committee will assess emerging opportunities and reevaluate actions to further reduce corporate GHG emissions.

The Corporate Climate Action Plan is one piece of the Town of New Glasgow's local action planning to achieve Milestone 3 of the Partners for Climate Protection five-milestone framework. The Corporate Plan will be closely linked to the Community Climate Change Action Plan to be developed in 2021. This community plan will outline initiatives to support community emission reductions for each of the inventory sectors; residential, commercial & industrial, transportation and waste. Achieving ambitious reductions will require action from across the community, and we all have a role to play in promoting a climate resilient, low-carbon future in New Glasgow.

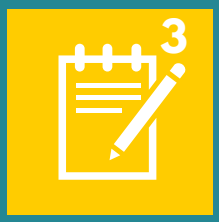
As our response to COVID-19 continues to evolve, it is important that we consider sustainability and climate change. This situation will not be resolved in the short term, and our ongoing response presents opportunities to advance climate action, while supporting community health and wellbeing in the context of COVID-19. Resilience actions to increase energy efficiency and reduce emissions can drive local job creation and support both economic and environmental resilience. This plan recognizes the ongoing challenges facing the Town of New Glasgow, that may impact the implementation schedule, timelines, or scope of actions within the Corporate Plan.

The Town of New Glasgow is committed to ambitious climate action, and recognizes the immediate need to act. This plan is our guide to lower energy use, improve efficiencies, reduce GHG emissions and embed climate considerations into our decision making frameworks.

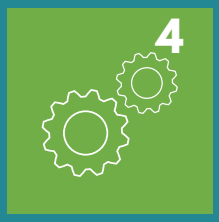
MILESTONE FRAMEWORK

INVENTORY

TARGET



ACTION PLAN



IMPLEMENTATION

MONITOR PROGRESS

Background

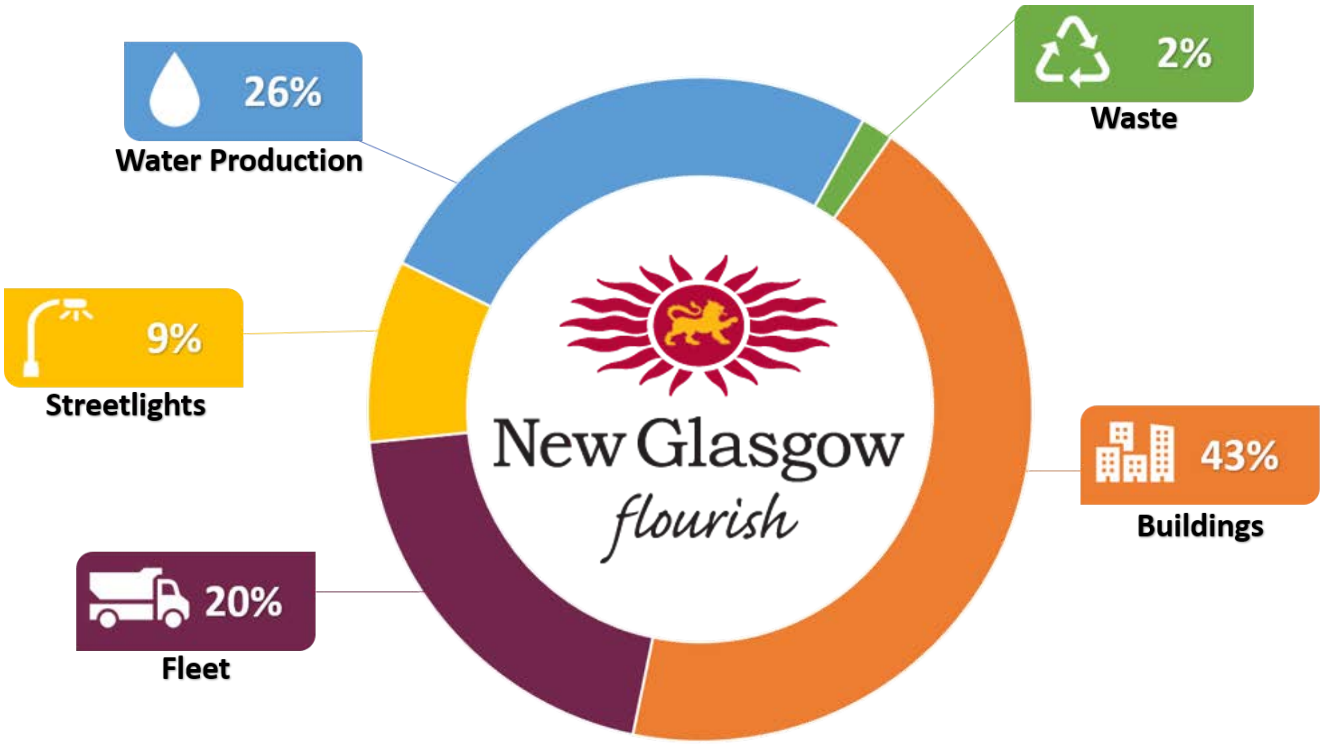
Climate change is a global scale issue but the impacts are happening at the local community level. Fortunately many of the solutions we need to address climate change will take place in our communities. When it comes to sources of greenhouse gas (GHG) emissions in Canada, it is estimated that just over 50% are generated in towns and cities. Municipal governments have influence or control over these emissions through service provision, infrastructure, bylaws, and development.

The Town of New Glasgow is committed to advancing local climate action through ambitious emission reductions. In 1998, the Town of New Glasgow joined the Partners for Climate Protection (PCP) program, a national network of over 350 municipalities working to reduce local GHG emissions while creating economic and social benefits for their communities. The program is a joint effort between the Federation of Canadian Municipalities (FCM) and ICLEI Canada— Local Governments for Sustainability. The PCP program is a five-milestone framework advancing a municipality through planning to implementation of local climate action. Milestone 1 builds a foundation with the creation of a baseline emissions inventory and business as usual forecast. Milestone 2 involves setting an emissions reduction target. Milestone 3 is the development of a local action plan to achieve emission reductions. Milestone 4 is the implementation of the local action plan, and lastly Milestone 5 is the ongoing monitoring of progress and results reporting.

MILESTONE 1: CORPORATE GHG EMISSIONS INVENTORY

The corporate GHG emissions inventory provides baseline data to measure future progress. In order to manage emissions, the first step is to measure. The Corporate Inventory is made up of five sectors; Buildings, Fleet, Streetlights and Traffic Signals, Water and Wastewater, and Solid Waste. The data captures the energy used within each sector, including electricity to power buildings, fuel for vehicles, oil to heat facilities, and the corresponding financial cost and the tonnes of carbon dioxide equivalent (tCO2e). In 18/19 the Town of New Glasgow's corporate operations accounted for 3003.76 tonnes of CO2 equivalent (tCO2e).

Sector	Emissions (tCO2e)	Energy	Cost ($)
Buildings	1307.37	11154	$338,735,82
Fleet	605.81	8880	$285,834.16
Streetlights	266.16	1423	$63,132.53
Water & Wastewater	777.98	4893	$168,798.90
Solid Waste	46.44	-	$24,303.44
Total:	3003.76	26530	$880,804.85

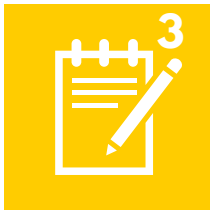


MILESTONE 2: SET AN EMISSIONS REDUCTION TARGET

The corporate GHG emissions reduction target determines the direction for our emission reduction efforts. The corporate target aims to achieve a balance between a realistic goal and ambitious action. The Town of New Glasgow will set two separate reduction targets: one for the community-wide emissions, and the other for municipal operations.

The Town of New Glasgow has completed 5corporate inventories from 1990 to 2018. The newly established target will measure progress against the 2018 baseline emissions. The target year is 2030.

This plan aims to achieve a target for 30% reduction of corporate GHG emissions below 2018 levels by 2030. The Corporate Target was approved by Council in July 2020.



MILESTONE 3: DEVELOP A CORPORATE ACTION PLAN

The corporate action plan outlines the steps and actions the Town of New Glasgow will take to achieve or exceed the corporate reduction target of 30%. The focus of this plan is on the energy and GHG emissions within the municipality's control. A community climate action plan will be developed to guide community wide action to reduce emissions.

The corporate action plan demonstrates the Town of New Glasgow's commitment to being an environmentally progressive and climate action oriented community. The plan aims to reduce energy and emissions from municipal operations and fleet through policies and actions. Embedding climate and sustainability considerations into municipal operations is critical to the long-term success.

The plan is a "living document" and will be reviewed annually to adjust actions and refine targets based on available funding, changes to policy, legislation, available data, technology and/or other changes or opportunities.

Corporate Target

2018 BASELINE

3003.76 tCO2e

The Corporate Inventory is made up of five sectors; Buildings, Fleet, Streetlights and Traffic Signals, Water and Wastewater, and Solid Waste. The inventory captures the energy used within each sector, including electricity to power buildings, fuel for vehicles, oil to heat facilities, and the corresponding financial cost and the carbon dioxide equivalent measured in tonnes (tCO2e). In 18/19 the Town of New Glasgow's corporate operations accounted for 3003.76 tCO2e.

15%

2025 TARGET

2553.2 tCO2e

The target for 2025 is a 15% reduction in tCO2e by 2025. The buildings sector represents the majority of targeted emission reductions. The Energy Savings Performance Contract will yield GHG reductions in the range of 20-30% depending on the building. Ongoing monitoring of GHG emissions will be undertaken annually to ensure progress on the target.

30%

2030 TARGET

2102.632tCO2e

The 10 year target for reductions is 30% lower than 2018 emissions. The Corporate Climate Action Plan outlines initial actions to achieve progress on this target.

SUMMARY OF ACTIONS

Buildings

01 RETROFIT EXISTING BUILDINGS

02 BUILDING HEATING AND COOLING AUTOMATION

03 RENEWABLE ENERGY

04 BUILDING AND RETROFIT UPGRADE STANDARDS

05 GREEN PROCUREMENT

06 TOWN BARN RENOVATION OR RELOCATION PLAN

Fleet

01 FUEL EFFICIENT DRIVER TRAINING

02 FLEET MANAGEMENT STRATEGY

03 ELECTRIC VEHICLE

04 POLICY DEVELOPMENT AND REVIEW

- TRAVEL GUIDELINES
- VEHICLE RIGHT SIZING PROCUREMENT
- ANTI IDLING POLICY

Lighting

01 LED UPGRADES AND TIMER ADJUSTMENTS

02 SOLAR POWERED STREETLIGHTS

Water & Wastewater

01 BUILDING RETROFITS

02 ENERGY SYSTEMS AUTOMATION

03 RENEWABLE ENERGY GENERATION

04 WATER CONSERVATION & STORMWATER MANAGEMENT

Waste

01 ESTABLISH WASTE GUIDELINES

02 DEVELOP AND IMPLEMENT SUSTAINABILITY POLICIES

- SINGLE USE ITEMS
- CONSTRUCTION WASTE

03 CORPORATE WASTE AUDIT

04 WASTE DIVERSION STRATEGY AND TARGET

Organizational and Institutional Policy Change

01 POLICIES, PLANS & PRIORITIZATION

02 HUMAN RESOURCES & GOVERNANCE

03 TECHNICAL CAPACITY

Monitoring Progress

01 GHG EMISSIONS INVENTORY TRACKING

02 ANNUAL REVIEW AND COUNCIL REPORT

03 EVALUATION

04 FIVE YEAR REVIEW

Asset Management

01 ASSET MANAGEMENT POLICY

02 STRATEGIC ASSET MANAGEMENT PLAN

03 CLIMATE CONSIDERATIONS AND NATURAL ASSETS

Buildings

The corporate buildings sector includes all facilities owned or operated by the Town of New Glasgow. The buildings sector is the largest contributor to GHG emissions in the Corporate Inventory, accounting for 43%. Excluded from this category is the Water Treatment Plant and emissions generated through the operation of water and wastewater services, as these are reported in the Water and Wastewater sector. Energy use comes from electricity (kWh) fuel oil and/or propane (L) for heating, and diesel for generators.

The Town currently operates 15 buildings within this sector,

The Town Barn was relocated to the old K-Mart/Central Supplies Store in 2012, with an anticipated occupancy timeline of 2 years. The relocating to a permanent facility or construction of a new facility for the Transportation Department should be a top priority.

In order to better understand the energy demands of each of the town owned buildings it is recommended that energy audits be undertaken for the more energy intensive buildings, starting with the Fire Station. This assessment will ensure a clearer picture of inefficiencies, and energy loss to inform necessary upgrades to the facility in order to reduce energy usage and increase comfort for the staff and patrons.

The recommended actions target existing buildings, procurement practices, and processes to prioritize environmental sustainability, level of service, and reductions in energy usage and GHG emissions in the short and long term.

01 RETROFIT EXISTING BUILDINGS

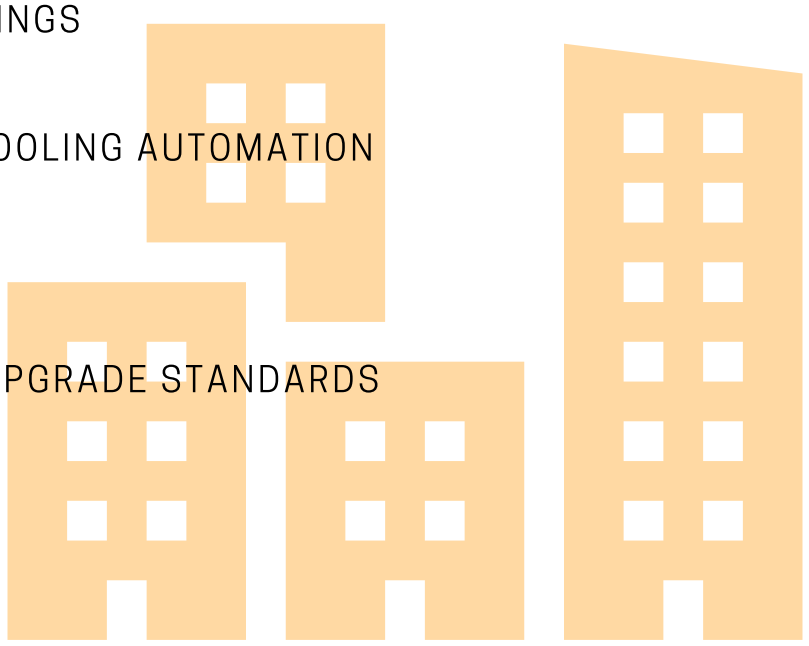
02 BUILDING HEATING AND COOLING AUTOMATION

03 RENEWABLE ENERGY

04 BUILDING AND RETROFIT UPGRADE STANDARDS

05 GREEN PROCUREMENT

06 TOWN BARN PLAN



01 RETROFIT EXISTING BUILDINGS

The Town of New Glasgow currently operates 15 buildings of varying sizes, Retrofits to existing buildings to reduce energy usage and costs are critical to lowering corporate greenhouse gas (GHG) emissions. As energy costs continue to increase, it's imperative that the Town improve the energy efficiency of buildings to lower annual operating costs. Deep energy retrofits will address the whole building envelope to improve insulation, lighting, energy controls, windows, appliances, etc. In terms of Town owned buildings the Fire Station/Library, Police Station, Town Hall, and Glasgow Square have the highest energy usage. These buildings will be the target for deep energy retrofits. Additional town buildings, including the Recreation Centres, Farmers Market, and Engineering & Public Works offices will be the target for energy audits and small scale upgrades to improve efficiency.

The Fire Station/Library accounts for 25% of emissions from the building sector. A lighting audit completed by Efficiency NS and Summerhill in 2020 estimated the following energy savings from lighting upgrades.

65647kWh, 44.23 CO2

Estimated annual kwh savings from lighting replacements and upgrades.

3.4% GHG reduction from buildings sector

RECOMMENDATION

The Town of New Glasgow will pursue an energy savings performance contract to upgrade municipal buildings and reduce energy demand. An Energy Savings Performance Contact (ESPC) supports facility upgrades and reduced energy costs without the need for initial capital expenditure. The savings generated through energy reductions are used to pay the upfront cost of the upgrades over a set period of time. The partner company will pay all costs involved with identifying and executing building upgrades and energy-efficient equipment purchases. The costs will be repaid over a set term from the cost savings recouped from reduced energy usage. After the initial investment is paid, the Town of New Glasgow benefits from the continued savings, and the facility renewals and energy efficiency upgrades. All the equipment will be owned by the Town.

The Town of New Glasgow will select a partner Energy Service Company (ESCO) to identify projects under the ESPC to balance payback term and energy reduction objectives.

02 BUILDING AUTOMATION SYSTEM UPGRADES

The Town of New Glasgow will implement or upgrade building automation systems for heating, cooling and lighting. Through energy audits and re-commissioning, inefficiencies can be identified, and modifications can be made to reflect occupant needs and optimal energy system conditions. Effective operations and maintenance is essential to the efficiency of buildings. To support sustainable energy usage levels and optimal building performance, building automation systems will be installed to assist in the day to day energy management of a facility. The systems can generate data to support efficient energy management and inform a corporate energy management program and strategy.

It is recommended that the Building Automation System Upgrades and Existing Building Commissioning be undertaken through the Energy Savings Performance Contract. The following buildings will be the target for the Installation or upgrade of building automation systems; Town Hall, the Fire Station/Library, Police Station, Glasgow Square and the Water Treatment Plant.

Building Automation can significantly reduce energy costs, and lower ongoing maintenance costs. BAS adjusts lighting and temperature based on occupancy needs, improving comfort. BAS supports reduced energy usage, helping to lower operational costs and support GHG emission reductions.

TIMELINE: ENERGY SAVINGS PERFORMANCE CONTRACT

	DESCRIPTION OF TASKS	START DATE	END DATE
PHASE 1	• Council presentation • Initiate RFP process	July 2020	November 2020
PHASE 2	• Identify projects • Partner contract • Energy audit and assessment	November 2020	March 2021
PHASE 3	• Deep energy retrofit construction • Commissioning and ongoing monitoring	Fall 2021	TBD

03 RENEWABLE ENERGY GENERATION

The Town of New Glasgow will explore on-site renewable energy generation at town owned buildings. Rooftop solar PV prices have decreased in recent years, making solar panels a viable option for on site electricity generation. Installing solar panels on centrally located buildings, or community centres can serve to showcase local renewable energy generation. Furthermore, this is an opportunity to highlight the Town's leadership in local renewables.

In consultation with an energy company, the town will assess the solar PV capacity for onsite electricity generation at a number of Town buildings, including; Glasgow Square, Library/Fire Station, Town Hall, community centres, and the Police Station. The Town will move forward with the optimal solar PV installation based on highest potential electricity generation and cost-benefit analysis.

The Town will continue to apply regularly for funding projects to conduct renewable energy feasibility studies and capital investments in renewable installation.

By 2025, the Town of New Glasgow will offset 10% of building electricity using on site renewable energy generation

Savings: 123,769kWh
89 tCO2e

6.7% reduction from building total
3% reduction from corporate total

The on-site renewable energy generation projects should also be explored through the Energy Savings Performance Contract, and implemented based on payback timelines and feasibility. Further installation of solar PV, biomass, or geothermal will be rolled out over the next 10 years to assist in further emission reductions.

TIMELINE

DESCRIPTION OF TASKS		START DATE	END DATE
FEASIBILITY STUDIES	• Energy Savings Performance Contract • Funding Applications • Installation Strategy - to be appended	Winter 2021	Ongoing

04 NEW BUILDING AND RETROFIT UPGRADE STANDARDS

The Town of New Glasgow aims to ensure any future municipal buildings or capital improvements are carried out in a sustainable manner, to limit any GHG emission increases. The green building policy will ensure the environmental footprint of a building is properly considered throughout the planning, design, construction and operation of the facility. This policy will apply to any capital upgrades or major renovations made to existing buildings to support or enhance improved energy efficiency. Sustainable design principles will be applied to any upgrades or retrofits.

This policy will also establish standards for any new corporate building to optimize both economic and environmental performance of the facility. These standards will account for the efficiency use of both energy and water, to reduce operating costs and minimize GHG emissions and the environmental impact. The construction of new buildings will comply with LEED standards, with the goal of achieving at minimum the equivalent of LEED gold criteria. Net zero will likely be the required standard in the coming years from the province. The use of basic energy modeling will ensure systems are optimized, and life cycle analysis will guide decision making to reduce operating costs.

With our commitment to being a leader in local climate action, this policy demonstrates both short and long term dedication to incorporating sustainability principles into operations. It is important to ensure renovations, upgrades and new buildings meet green standards to reduce operating costs and account for environmental impact. This policy will advance alignment with climate change, asset management and infrastructure decisions.

05 GREEN PROCUREMENT

Similar to the principles of the green building policy, green procurement gives consideration for energy efficient equipment and services with a reduced environmental impact. Whereas goods and services procurement are traditionally scored based on factors such as price, quality and performance, green procurement incorporates environmental considerations. Green procurement supports our commitment to reducing greenhouse gas emissions. This policy will apply to other sectors.

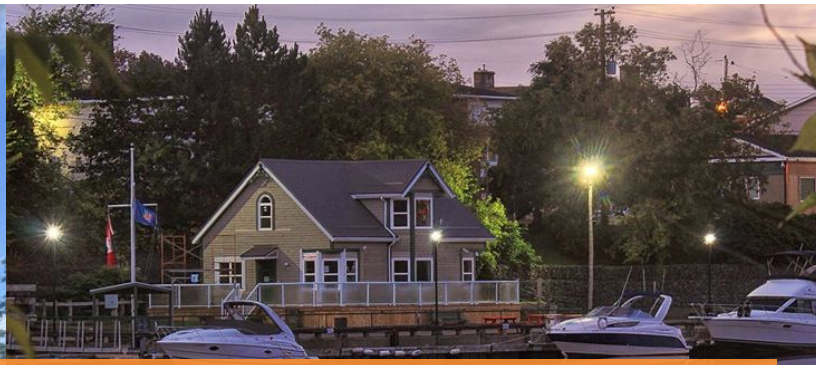
TIMELINE

UPGRADE STANDARDS	• Submit for Council Approval: Spring 2021
GREEN PROCUREMENT	• Update current procurement policy • Submit for Council Approval: Spring 2021

06 TRANSPORTATION DEPARTMENT BUILDING RENOVATION OR RELOCATION PLAN

Summer 2020, the Town of New Glasgow renewed the lease for the Town Barn (Transportation Department Building) located at the Old KMart on East River Road. Given the high energy usage and costs associated with this building, it is paramount that the Town establish a clear plan within the next two years for the facility.

The Town Barn accounts for 13% of total corporate emissions. Without a sustainable solution for this facility, total emission reduction potential for the Town inventory will be hindered. It is recommended that a building plan be completed by Fall 2021 to determine financially viable options, with consideration for energy efficiency under a relocation scenario or a new build. Funding programs should be leveraged to investigate different avenues for energy standards in a new build, including net-zero. Within this plan, there will be consideration for different funding models including Public Private Partnerships (P3), and needs analysis for the facility.



43% of corporate emissions result from building energy consumption. With energy costs increasing, reducing energy usage, improving building efficiency, and transitioning to cleaner energy sources will support emission reductions and improved building operations. The six actions outlined in the building sector are the first steps in ongoing management of building assets to support sustainable service delivery now and into the future, while prioritizing energy efficiency and low carbon solutions.

Fleet

The Fleet sector includes all Town owned and operated vehicles and equipment. Emissions are generated through gasoline, diesel, or propane used to power the vehicles. This sector includes both on and off road vehicles, as well as public transit operated by the Town.

There are seven divisions operating vehicles within the town fleet: Transportation, Police, Environmental Services, Fire, Recreation, Water and General (including IT). The Transportation Department represents the largest contributor to GHG emissions from the Fleet sector, accounting for almost half of all fleet sector emissions. Police is the second largest sector, accounting for 25.5%, followed by Environmental Services at 19.5% of emissions. Fire, Recreation, Water and General together make up the remaining 7%.

This sector accounts for 20% of emissions from the corporate inventory. The recommended actions included in this section aim to address emissions from vehicles through a suite of policy updates to encourage more fuel efficient vehicle procurement, planning for electric vehicle purchases, and environmentally conscious driving practices to reduce fuel use and save money. The actions were informed by the recommendations from the Municipal Fleet Efficiency Initiative Report generated by the Clean Foundation for the Town of New Glasgow. The Municipal Fleet Efficiency Initiative was completed in 2015, the recommendations remain relevant.

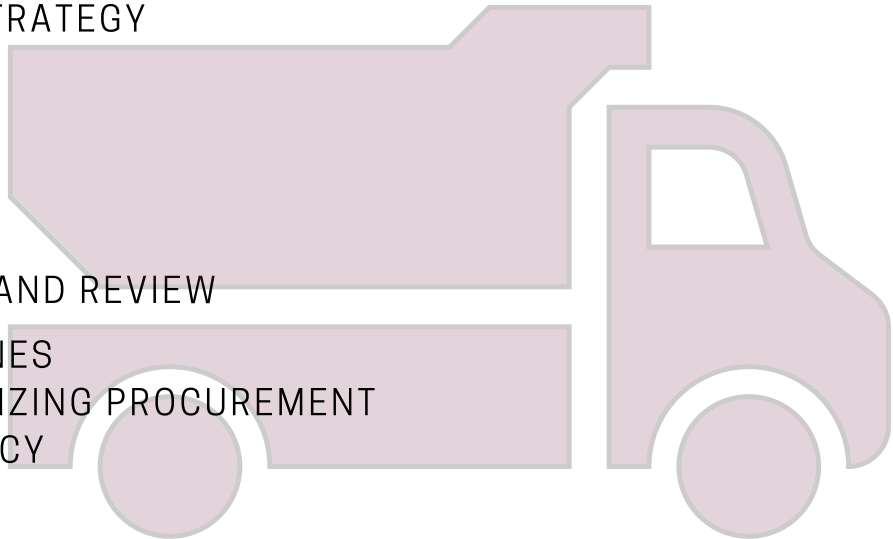
01 FUEL EFFICIENT DRIVER TRAINING

02 FLEET MANAGEMENT STRATEGY

03 ELECTRIC VEHICLE

04 POLICY DEVELOPMENT AND REVIEW

- TRAVEL GUIDELINES
- VEHICLE RIGHT SIZING PROCUREMENT
- ANTI IDLING POLICY



01 FUEL EFFICIENT DRIVER TRAINING

Adjustments to driving can save hundreds of dollars in fuel costs, and lower maintenance costs by reducing the wear on a vehicle. Aggressive acceleration leads to more fuel consumption. Simple measures to accelerate gradually can maximize fuel efficiency. According to Natural Resources Canada rapid acceleration and hard braking only reduce travel time by approximately 4% but increase fuel consumption by upwards of 39%. Maneuvers to anticipate road conditions and traffic can help a driver maintain a steady speed and reduce unnecessary fuel consumption.

Natural Resources Canada operates the SmartDriver in the City program designed for municipal fleets. Participants cover a variety of topics from understanding climate change, to idling, maintenance and fuel efficiency, etc. The course teaches safe driving practices that help to lower fuel consumption in light, medium and heavy-duty vehicles. The program is free and NRCAN estimates the fleet energy-management training can improve fuel efficiency by up to 35 percent.

By improving driver habits and encouraging less aggressive braking and accelerating, staff will be better suited to efficient operation of electric vehicles. Hard accelerating reduces the range of an electric vehicle, and hard braking limits the recharge potential from regenerative braking technology. The Fleet Carma study of Town eco-driving scored the study group below the industry average.

Reference: www.caa.ca/ecodriving/

02 FLEET MANAGEMENT STRATEGY

To better manage the Town fleet, it's important to understand the quality of these assets. The fleet management strategy will set out a long term approach to prioritize the procurement of smaller, more efficient vehicles, understanding alternative options, and managing the full lifespan of the assets to avoid continually replacing vehicles. The strategy will form a baseline for fleet vehicle usage and fuel consumption, with an inventory of assets, mileage, and other relevant fleet data. This strategy will support the transition to a lower-carbon fleet.

As part of this plan, the Town will undertake an in depth needs analysis of assets. This will allow fleet managers to optimize the fleet, with the right amount of vehicles and appropriate sizes for the necessary work, and use of the most efficient assets. This analysis along with an asset inventory will inform a vehicle replacement schedule, and the work necessary to support charging infrastructure for the ongoing transition to greener vehicles. This will allow the Town to dispose of poorly performing assets.

The Town utilizes GPS data to monitor non-productive idle time, this daily data helps to identify areas for improvement. This data tracking should be expanded to show fuel consumption and driving behaviours to further support improvements in vehicle operations. This should be prioritized in the near term, as the greening of the Town fleet will be carried out over time based on vehicle replacement schedules.

This brief overview of Fleet Management Strategy objectives is a high level description of the possible activities. The Greening Government Fleets guide by NRCAN outlines best practices in this field. Funding opportunities should be considered in helping complete this type of strategy. The strategy will apply to all departments.

03 ELECTRIC VEHICLES

The Town will evaluate the use of electric vehicles and equipment. Consideration for electric vehicle purchases, as well as lower carbon fuel sources and prioritizing fuel efficiency will be embedded into policies and procedures including the updates to the procurement policy as well as the development of a fleet management strategy. In tandem with these efforts, the Town will aim to replace a current fleet asset with an electric vehicle by 2023, based on the asset replacement schedule. The purchase of an electric vehicle can serve as a pilot for our efforts to "green the fleet." Incorporating an EV into the fleet will give Town employees the opportunity to become familiar with this type of vehicle and will support the ongoing transition to electrification.

VEHICLE OPERATOR TRAINING AND WORKSHOPS

As part of the transition to electric vehicle purchasing, vehicle operators will be engaged in workshops and in-vehicle training. This will include an overview of EV technology, typical range, battery life and the impact of driving habits. This information will be complemented by in vehicle training to increase familiarity with electric vehicles. This work can be done in collaboration with the Clean Foundation.

The average range on an electric vehicle is 200-250km, with many vehicles exceeding 400km. According to the FleetCarma data generated from light-duty vehicles in the Town of New Glasgow fleet (2015), data identified vehicle usage at less than 40km per day for 44% of days logged, and less than 100km a day for 76% of days logged. The average utilization was 77km per day. This average daily usage is well within the range of an electric vehicle.

CHARGING INFRASTRUCTURE

To support the adoption of electric vehicles in the Town Fleet, along with encouraging the electric vehicle transition in our community, the Town will pursue funding opportunities to increase charging infrastructure. Level II chargers should be installed on Town property including on street parking, at the Library, Farmer's Market, and public works facility. This infrastructure can be used for Town vehicles and be accessible to the public.

04 POLICY DEVELOPMENT AND REVIEW

As part of the Town's efforts to embed environmental sustainability and climate considerations into operational procedures, new policies will be established to advance emission reduction objectives from the fleet sector. The fleet sector represents a significant portion of emissions from the corporate inventory.

VEHICLE RIGHT-SIZING

The premise of the right sizing vehicle policy is two fold; first to ensure the Town is purchasing the appropriate sized vehicle for the work needs, and second that the vehicle is assigned to right task. Using the most suitable and cost effective vehicle to do a job, reduces fleet costs for the Town and avoids unnecessary fuel consumption. This policy should be complemented by vehicle operator engagement to increase awareness of right-sized vehicles to address the long standing culture of pick up trucks or large vehicles being necessary to carry out work.

TRAVEL GUIDELINES

Updating travel guidelines will help to reduce emissions from travel to meetings and conferences. These updates will include tools to better facilitate carpooling and telecommuting options to reduce fuel usage when possible.

ANTI IDLING POLICY

Idling vehicles is costly, inefficient, and contributes to air pollution in our community. Motor vehicle exhaust reduces air quality by releasing particulate matter and volatile organic compounds into the air. Idling results in greenhouse gas emissions, and negatively affects the health and well-being of our community.

The Corporate Anti-Idling Policy defines the responsibilities of the Town of New Glasgow staff to restrict unnecessary idling when operating a vehicle for work purposes. This policy establishes the procedures and exemptions for restricting idling. Eliminating unnecessary idling is a simple, no cost action Town employees can take to save fuel and money, reduce the environmental impact of town operations, and extend the lifespan of our fleet assets.

This policy applies to all Town owned, leased, or rented vehicles or motorized equipment, and privately owned vehicles used for Town related business. This policy applies to all departments and Town of New Glasgow staff and Council, including emergency services and members of law enforcement. The Anti-Idling policy will be presented to Council in October 2020,

To address idling for the operation of truck arrow bars, safety signs, or other vehicle lighting that draws on the battery, the Town will investigate anti-idling technologies and lower power systems to safely operate signage while reducing total idle time.

TIMELINE: FLEET SECTOR ACTIONS

DESCRIPTION OF TASKS		START DATE	END DATE
FUEL EFFICIENT DRIVER TRAINING	• Staff engagement, online and in person training • In vehicle training • Data collection and progress reporting	Fall 2021	Spring 2022
FLEET MANAGEMENT STRATEGY	• Investigate external funding opportunities • Determine goals and objectives • Fleet Asset Registry • Develop Fleet Management Strategy	Spring 2021 Fall 2021 Summer 2022	Ongoing Winter 2022 Winter 2023
ELECTRIC VEHICLE PURCHASE	• Staff engagement • Install additional level two chargers • Incorporate EV prioritization into procurement practices • Purchase EV for the Town Fleet	Fall 2021 Spring 2021 2023	Winter 2022 Ongoing Spring 2021 Ongoing
POLICY DEVELOPMENT & REVIEW VEHICLE RIGHT SIZING TRAVEL GUIDELINES ANTI-IDLING	• Ongoing review of TNG policies to incorporate a climate lens • Development of new policies • Update current guidelines • Present to Council • Update current guidelines • Present to Council • Present to Council	Fall 2020 Summer 2020	Ongoing Spring 2021 Fall 2021 Fall 2020

Streetlights & Traffic Signals

The Town of New Glasgow is responsible for the operation and maintenance of streetlights, traffic signals, trail and park lighting, as well as any decorative lighting within municipal boundaries. The streetlights and traffic signals section accounts for GHG emissions that result from electricity use to power Town lighting infrastructure. This sector accounts for 9% of corporate emissions. Significant LED upgrades have already been completed, resulting in reductions in electricity usage and GHG emissions. These upgrades are close to ten years old, and the Town should complete a full audit of lighting to assess energy performance, and determine opportunities to upgrades to LED lighting and use of automated controls.

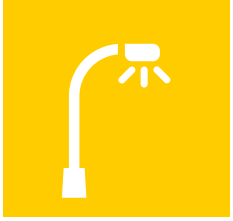
Efforts to manage traffic flow by adjusting signal systems for more efficient movement will be explored. Less frequent stopping can help reduce idling and GHG emissions. For a consistent approach to traffic management, including new street signage, measures will be evaluated in the context of holistic traffic management and calming measures for the safety of vehicles, cyclists and pedestrians. As community actions will be rolled out to increase active transportation infrastructure, lighting will be considered to promote safety on roads and trails. Traffic calming measures will be essential to enhancing safe active transportation corridors.

The recommended actions for this sector can be implemented on an ongoing basis, and will focus on upgrading LED technology to realize new energy savings.

01 LED UPGRADES AND TIMER ADJUSTMENTS

02 SOLAR POWERED STREETLIGHTS

01 UPGRADES AND TIMER ADJUSTMENTS



The Town of New Glasgow has already benefited from LED upgrades to street lighting and traffic signals. Within this sector GHG emissions have decreased, and currently account for 9% of the total corporate inventory. Further upgrades and standardization practices to outdoor lighting with advanced LED technology and controls can further advance efficiencies and functionality of these assets. Potential upgrades will be explored in the near term through the Energy Savings Performance Contract. Over the next several years, the Town will work with Liveable Cities, a division of Roadway Lighting Ltd, to explore smart street lighting products, network technology, software and the most advanced LED streetlights. Features to program lights, including dimming can reduce energy consumption.

02 SOLAR POWERED LIGHTING

The use of solar powered lighting systems will be investigated to determine the feasibility of incorporating this technology into the Streetlights & Traffic Signals infrastructure. This technology could be rolled out for lighting on roadways, parks, and trails to reduce GHG emissions and achieve long term cost savings. Solar lighting is a sustainable and cost effective option to support the Town's climate objectives. Background work will be carried out to determine system size requirements, taking into account many factors such as our location, battery capacity needs, the size of the solar array, among other things to ensure sufficient light.

TIMELINE:

The timeline could move up on the upgrades if a Streetlights and Traffic Signal project fits within the scope of the prospective Energy Savings Performance Contract.

DESCRIPTION OF TASKS	START DATE	END DATE
UPGRADES AND TIMER ADJUSTMENTS • LED upgrades • Light dimming technology • Automation	2022 Fiscal	Ongoing
SOLAR POWERED LIGHTING • LED upgrades • Light dimming technology • Automation	2022 Fiscal	Ongoing

Water & Wastewater

The Water and Wastewater sector includes all infrastructure for water and wastewater related services. This sector includes the water treatment facility, pumping and lift stations, reservoirs and other infrastructure related to the treatment and delivery of water and transport of wastewater. There are a total of four pump stations operating in the conveyance of water, and one lift station and sewage station as part of wastewater management. The Water and Wastewater sector represents 26% of greenhouse gas emissions from the corporate inventory. The Water Treatment Plant at Forbes Lake represents the majority of these emissions, 507.6 tCO2e of the 777.98 total tCO2e resulting from water and wastewater.

The actions identified for water and wastewater aim to reduce the GHG emissions and energy use from the Water Treatment Plant and the associated service infrastructure. The review and implementation of the recommended actions should also consider reducing water usage and water loss. Treating and delivering water to customers requires a large amount of energy. Conservation measures to reduce water usage are an important component of action in this sector. As the Town aims to improve building efficiencies, water conservation will be included as a focus area. Furthermore, water conservation will be incorporated into the community action plan.

The actions outlined below aim to reduce energy usage and improve efficiencies to reduce energy usage and GHG emissions. The Water Treatment Plant Supervisor will be responsible for directing energy planning and plant upgrades for energy efficiency and emission reductions. The Plant has already done extensive work to optimize operations and efficiencies.

01 BUILDING RETROFITS

02 ENERGY SYSTEMS AUTOMATION

03 RENEWABLE ENERGY GENERATION

03 WATER CONSERVATION & STORMWATER MANAGEMENT

01 BUILDING RETROFITS & 02 ENERGY SYSTEMS AUTOMATION

The Water and Wastewater sector buildings including pumping and lift stations, and the Water Treatment Plant will be integrated into the Energy Savings Performance Contract projects. The contract should investigate projects to improve wastewater and water pumping efficiencies, harnessing thermal waste, water recycling opportunities and leak detection to reduce water loss as well as energy usage needed for treatment and conveyance. A deep energy retrofit for the Water Treatment Plant will be a leading priority given the extensive energy input needed to operate the facility. To advance energy reductions and support the corporate target, GHG emission reductions between 10-25% over the next 5 years will be sought through the contract. In addition, renewable energy generation will be examined through this contract to offset energy usage.

WATER TREATMENT PLANT

The Water Treatment Plant is highest energy user in the corporate inventory, representing 16.9% of total emissions across the entire inventory. Improvements to this facility can yield significant reductions to the total GHG emissions across corporate operations.

GOAL: 10-25% GHG emission reductions by 2025 through deep energy retrofits

03 WATER CONSERVATION AND STORMWATER MANAGEMENT

The Town of New Glasgow Water Treatment Plant ensures drinking water quality meets all standards for safe drinking water. The equipment operates 24 hours a day, seven days a week, which results in significant energy use. Actions to reduce both the consumption of water and the amount of stormwater entering the sewer systems helps to lower energy usage. The development of a formal water conservation and stormwater management plan will align with priorities on both the adaptation and mitigation spheres of climate action.

04 RENEWABLE ENERGY GENERATION

The Water Treatment Plant is well suited for on-site renewable energy generation. Preliminary studies will be sought to better understand the technical and economic feasibility of solar, both roof top and ground mount, as well as other renewable energy opportunities. Through these initial feasibility studies, the Town will learn how to navigate current regulatory conditions, budget estimates, and project scope. Furthermore, different financial models will be studied to determine the possibility of launching a community solar initiative whereby the community invests in renewable infrastructure and recoups their investment through water bill savings.

Goal: generate 20% of the Water Treatment Plant's electricity usage by 2025

TIMELINE: WATER ACTIONS

DESCRIPTION OF TASKS		START DATE	END DATE
ESPC	• Follow the timeline outlined in Building Sector	July 2020	Ongoing
MANAGEMENT PLAN	• TBD	TBD	TBD
RENEWABLE ENERGY	• Feasibility studies • Geotechnical analysis, grid integration and design specifications	Winter 2021	Ongoing

Waste

The corporate solid waste sector measures the total tonnage of non-divertable waste from Town buildings, trails, parks, and public receptacles. All waste generated by the Town of New Glasgow is transported to the Mount William Transfer Station before being transferred to Guysborough County Landfill.

Emissions are calculated using the total tonnes of garbage and the composition of this waste (% organic material). Waste that is diverted, including organics and recycling is excluded from the emissions calculation. Organic materials in the garbage end up in landfills where conditions aren't suitable to proper breakdown resulting in the release of Methane, a highly potent greenhouse gas. The GHG emissions from this sector are nominal, representing approximately 2% of the total corporate inventory. As such the actions for this sector are limited, and the majority of corporate efforts are concentrated in other actions.

The recommended actions have been set forth in consultation with Pictou County Solid Waste. The Town of New Glasgow is committed to establishing consistent practices across municipally operated buildings to improve our solid waste diversion efforts and lower total waste from municipal operations.

PICTOU COUNTY SOLID WASTE

01 ESTABLISH WASTE GUIDELINES

02 DEVELOP AND IMPLEMENT SUSTAINABILITY POLICIES

- SINGLE USE ITEMS
- CONSTRUCTION WASTE

03 CORPORATE WASTE AUDIT

04 WASTE DIVERSION STRATEGY AND TARGET

01 ESTABLISH WASTE GUIDELINES

The Town of New Glasgow currently operates 15 buildings of varying sizes and purposes. Waste collection practices are inconsistent across each building, with certain waste diversion practices being followed and others not. It is recommended that the Town establish consistent clear guidelines for waste diversion practices in each building, inclusive of events happening at Glasgow Square and the Recreation Centres. These guidelines will set forth the procedures for waste collection services to address inconsistencies, and ensure diversion and sorting is carried out from the building to the transfer station. Examples of guidelines include implementing organics programs for food waste and compostable materials, and having a singular waste hauling company deal with all corporate buildings to help with consistent and cohesive waste management. These guidelines will help reduce total solid waste with recommendations for printing, single use plastics and construction waste.

02 DEVELOP AND IMPLEMENT SUSTAINABILITY POLICIES

To complement waste guidelines and objectives for waste reduction, the Town of New Glasgow will develop and implement policies to integrate waste reduction practices into operations. Policies will be reviewed and developed on an ongoing basis to reflect changes in waste reduction standards, in consultation with partners at Pictou County Solid Waste. As part of this iteration of the Corporate Climate Action Plan, the following policies are recommended to be developed and implemented by Fall 2021.

SINGLE USE PLASTICS

The Municipal Single-Use Item Reduction Policy defines the responsibilities of the Town of New Glasgow to reduce corporate and community waste. This policy establishes waste reduction standards across Town of New Glasgow operations and buildings.

This policy will provide direction to staff involved in organizing and coordinating town events or activities taking place in Town owned facilities.

CONSTRUCTION WASTE

The Town will review current practices for construction waste disposal. Waste generated through road work and construction is not counted in the corporate inventory, but still represents waste generated through Town operations. Responsible disposal of waste is central to our sustainability efforts in the waste sector and should be reviewed and formalized to reflect industry standards and promote environmental stewardship.

03 CORPORATE WASTE AUDIT

A corporate waste audit can help the Town of New Glasgow measure how much solid waste is generated in town buildings. The corporate inventory measured total tonnes of non-divertible waste, but the data quality was low, as the annual tonnage was calculated using the average weight per pick up multiplied by the pick up frequency rate of the particular building. A proper waste audit will measure waste diversion compliance, and identify which facilities would benefit from solid waste reduction initiatives and supports. The waste audit should be conducted within the next three years to help inform the corporate inventory data collected annually. By establishing a more clear baseline of waste usage, the Town can measure progress and assess current performance in regards to waste diversion and total tonnes.

04 WASTE DIVERSION STRATEGY AND TARGET

The waste audit will assess current waste diversion rates, and measure our performance against the Divert NS Waste Audit Reports and data from Pictou County Solid Waste. The results of the audit will guide the waste diversion strategy and target. In collaboration with Pictou County Solid Waste, the Town of New Glasgow will develop and adopt a Corporate Waste Diversion Strategy and Target.

Organizational & Institutional Policy Change

There are a number of actions identified to build a foundation to support energy efficiency and sustainable practices at the organizational level. These policy measures prioritize environmental considerations, life-cycle costs, energy efficiency and sustainability, rather than simply upfront costs. These actions don't necessarily result in direct GHG emission reductions, but they support the integration of climate considerations into our organization. One of the over-arching objectives is to bring climate change to the forefront of decision-making.

To ensure the timely implementation of the corporate climate action plan, the Town of New Glasgow is committed to dedicating resources, both financial and staff time to oversee the effective coordination of the plan. The implementation will be overseen by the Climate Change Steering Committee.

CLIMATE ACTION PARTICIPATION & LEADERSHIP

The Town of New Glasgow will continue to participate in provincial and national climate initiatives including the Municipal Energy Learning Group, the Partners for Climate Protection, the Canadian Climate Caucus and the Global Covenant of Mayors. We will seek out opportunities to increase our capacity and participate in new programs to advance local climate change action, and improve community resilience.

01 POLICIES, PLANS & PRIORITIZATION

02 HUMAN RESOURCES & GOVERNANCE

03 TECHNICAL CAPACITY

01 POLICIES, PLANS & PRIORITIZATION

A foundation of this plan is to put policies in place that support the implementation of a vision for local GHG emission reductions. With the approval of this plan, the Town commits to embedding climate considerations into operational planning and prioritizing climate change action. The ongoing monitoring of GHG reductions and regular reporting of CO2 inventories will be implemented into operations, to ensure proper monitoring and evaluation.

- Develop a policy for how gas tax funding is distributed across the eligible Town of New Glasgow departments.
- Integrate climate change and GHG reductions into official plans and other relevant policies as needed.
- Progress, reporting and monitoring documents related to climate change action and initiatives.
- Review all corporate policies through a climate and sustainability lens.
- Initiate the process for adopting carbon budgeting.

02 HUMAN RESOURCES & GOVERNANCE

To support the integration of climate change across departments, the Town of New Glasgow will ensure staff and Council are equipped with the knowledge and skills needed to understand climate change and municipal GHG emission reductions. The goal is to build internal capacity to realize reductions and integrate a climate lens into decision making.

- Develop a staff climate change primer for new and existing staff.
- Identify staff and Council climate champions.
- Support staff to adopt sustainable behaviours through incentives and campaigns (carpooling, active transportation, waste reduction, conservation initiatives, etc.).
- Assisting staff in incorporating a climate lens into decision making.

03 TECHNICAL CAPACITY

Technical capacity involves acquiring or adapting the tools needed to reduce emissions and track progress.

- Continuous improvement of GHG emissions reduction in municipal processes.
- Tools, templates, technology and software to assist in the execution of recommendations.
- Work towards adopting carbon budgeting practices.

Monitoring Progress

The Corporate Climate Action Plan is a living document, and will be revised annually as circumstances evolve and new ideas emerge. Ongoing monitoring of initiatives helps determine if we are on track to achieve our targets. The corporate GHG emissions inventory will be updated to ensure accurate annual reporting, and to assist in determining progress in achieving our targets. The activities under each sector feature a corresponding implementation schedule. Reporting on the timeline and progress will be reviewed by the Climate Change Steering Committee and adjusted as necessary. A fulsome report will be presented to Council every year.

01 GHG EMISSIONS INVENTORY TRACKING

The corporate GHG emissions inventory will be updated annually to ensure accurate reporting and the inclusion of new buildings, or the removal of retired facilities. The current state of corporate emissions will be communicated to Council and Town staff annually, in addition to publishing the update on the Town website.

02 ANNUAL REVIEW AND COUNCIL REPORT

The Corporate Climate Action Plan will be reviewed annually by the Climate Change Steering Committee. As circumstances change, both locally and provincially the committee will assess emerging opportunities and reevaluate actions to further reduce corporate GHG emissions. The committee will present results to Council.

03 EVALUATION

Performance indicators will be used to measure changes in greenhouse gas emissions for each of the sectors and across the corporate inventory. As part of the ongoing inventory tracking, these indicators can be measured and reported on. An action can be adjusted based on the results.

04 FIVE YEAR REVIEW

The Corporate Climate Change Action Plan outlines actions for the next five years. Following the end of the five year time period, a new target will be set and additional activities will be identified to continue emission reductions from 2025-2030.

KEY PERFORMANCE INDICATORS

Corporate GHG Emissions	Reductions in GHG Emissions (CO2e)
Buildings	Electricity (kWh), Fuel oil (L), Propane (L)
• Energy Intensity	GJ/m2
• Emissions Intensity	GHG/m2
• Energy Cost Intensity	$/m2
Fleet	Gasoline (L), Diesel (L)
• Fuel efficiency and vehicle classification	Vehicle numbers by class Unit fuel/km
Streetlights	Electricity (kWh)
• Light efficiency	GJ/light
• Solar lights	% of renewable energy lights
Water & Wastewater	Electricity (kWh), Oil (L)
• Energy Intensity	GJ/m2
• Emissions Intensity	GHG/m2
• Energy Cost Intensity	$/m2
• Water Efficiency	GJ/L
Waste	Tonnes of Waste Waste Diversion Rate
Renewable Energy Generation	KW produced

ORGANIZATIONAL & INSTITUTIONAL POLICY CHANGE

Policies, plans and prioritization	• Documented initiatives and projects implemented to reduce GHG emissions • Progress reports, including the GHG inventory or reports to PCP, GCOM, etc.
Human resources and governance	• Internal resources to support climate action (templates, tools, guides, etc.) • Staff engagement
Technical capacity	

Asset Management

Asset management can help the Town of New Glasgow better manage municipal infrastructure assets, reduce risks, and make effective budgetary decisions for sustainable service delivery now and into the future. Asset management allows the Town to realize the value from its assets. This goes beyond the critical assets like roads, bridges, water and waste water. There are five types of assets; physical, human, information, financial and intangible. It is our objective to develop asset management practices to extend the lifespan of our assets, reduce risk, and improve resilience of systems to climate impacts. Over the next five years the Town of New Glasgow will endeavour to develop and implement an Asset Management Policy and Strategic Asset Management Plan (SAMP).

01 ASSET MANAGEMENT POLICY

The Asset Management Policy is the overarching framework, consistent with our organizational plan, it sets the tone for the Strategic Asset Management Plan and corresponding Asset Management Objectives. This is a relatively short document comprised of the principles and mandated requirements for the Town's asset management work.

02 STRATEGIC ASSET MANAGEMENT PLAN

The Strategic Asset Management Plan (SAMP) defines what it is we intend to achieve within a specific timeframe. The objectives of the SAMP will link with our organizational objectives. This plan ensures the implementation of the Asset Management Policy.

03 CLIMATE CONSIDERATIONS AND NATURAL ASSETS

The Town's critical assets are vulnerable to extreme weather, and were not necessarily designed to withstand more frequent and severe extreme weather events, flooding, or prolonged heat waves, associated with a changing climate. Asset management provides a holistic approach to ensure climate considerations, while properly accounting for the operation, maintenance, and replacement of assets for sustainable service delivery. Furthermore, asset management allows us to properly account for the value of our natural assets to stormwater management, shading, and improving water and air quality.

Next Steps

To complete Milestone 2 & 3 of the PCP Framework, the Town of New Glasgow will develop a community GHG emissions reduction target and community climate change action plan. The corporate efforts will be closely linked with the community actions, with many co-benefits, This community plan will outline initiatives to support community emission reductions for each of the inventory sectors; residential, commercial & industrial, transportation and waste. Achieving ambitious reductions will require action from across the community, and we all have a role to play in promoting a climate resilient, low-carbon future in New Glasgow. The plan will include both short and long term actions in each of the sectors, and an implementation schedule to ensure timely adoption of new initiatives, as well as ongoing monitoring and progress reporting. Many of the actions will focus on reducing energy consumption, improving energy efficiency, fuel switching and the implementation of local renewable energy systems, along with reducing car dependency and promoting a healthy, climate resilient New Glasgow.

The target and plan will be developed through extensive community engagement and consultation to properly account for the needs and concerns of New Glasgow residents of all ages. This work will be directed by the Climate Change Community and Stakeholder Engagement Committee. An initial list of high level action areas is presented below, this is a starting point but does not represent the final action list.

RESIDENTIAL	• Clean energy financing • District Energy Systems • Renewable energy generation • Incentive programs
COMMERCIAL & INDUSTRIAL	• District Energy Systems • Renewable energy generation • Energy efficiency • Reduction commitments
TRANSPORTATION	• Trail expansion • Cycling infrastructure • Electric vehicle infrastructure • Anti-idling
WASTE	• Waste diversion practices • ICI waste • Community engagement • Waste reduction practices

Closing Comments

Municipalities are at the forefront of climate action in Nova Scotia and across Canada. Mainstreaming climate action into official plans and policies can ensure climate change considerations are embedded into decision making frameworks and properly planned for and managed. The Corporate Climate Action Plan is our commitment to pursue environmental sustainability, low carbon solutions, and energy efficiencies within our corporate operations. This plan is a guiding document for our actions, but not a complete picture of what's possible. We will endeavour to continue learning, and pushing the boundary on climate action in the Town of New Glasgow. This plan is a part of our Local Action Planning, and will complement the Community Climate Action Plan. The Town of New Glasgow is committed to being a climate leader in Pictou County and Nova Scotia.