DRAFT

Government Operations Climate Action Plan for the Town of North East and Village of Millerton, New York

August 2022

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List of Acronyms

AR5 - Intergovernmental Panel on Climate Change's Fifth Assessment Report
CAGR – Compound Annual Growth Rate
CH_4 - methane
CO_2 – carbon dioxide
CO_2e - Carbon Dioxide Equivalents
CSC – New York State Climate Smart Communities
EF – GHG Emission Factor
eGRID – US EPA Emissions & Generation Resource Integrated Database
EPA – Environmental Protection Agency
GHG – greenhouse gas
GWP – global warming potential
HFC - hydrofluorocarbon
IMP – Inventory Management Plan
IPCC - Intergovernmental Panel on Climate Change
LPG – liquid petroleum gas (propane)
t – metric tonnes
MSW – municipal solid waste
MWh – Mega Watt hour
N_2O – Nitrous Oxide
NYS – New York State
NYSEG - New York State Electric and Gas Corporation
NYSERDA – New York State Energy Research and Development Authority
PE – Pledge Element
PFC - perfluorocarbon
SF_6 – sulfur hexafluoride
TCR – The Climate Registry
US EPA - United States Environmental Protection Agency
UNFCCC – United Nations Framework Convention on Climate Change

Acknowledgments

We are pleased to present this 2022 Town of North East and Village of Millerton Government Operations Greenhouse Gas Inventory, Target Reduction Plan, and Climate Action Plan. It is our hope that future generations of elected officials and residents will continue to inspire awareness and activism about the undeniable threats of climate change upon our Town's and Village's resplendent natural resources and the planet that we and all humankind lovingly call "Home."

The Town of North East's Town Board and Administration

Town Supervisor: Christopher Kennan

Deputy Supervisor: Lana Morrison

Bookkeeper/Budget Officer: Lorna Sherman

Council members: Griffin Cooper, Ralph Fedele, John Midwood

Village of Millerton's Village Board and Administration

Village Mayor: Jennifer Najdek

Deputy Mayor: Alicia Sartori

Trustees: Matthew Hartzog; Laurie Kerr; David Sherman

The Town and Village Boards wish to thank the following agencies, officials, and individuals for their assistance with the development of this Government Operations Greenhouse Gas (GHG) Inventory, GHG Target Reduction Plan, and Government Operations Climate Action Plan:

- NYS DEC's Office of Climate Change
- New York State Energy Research and Development Authority (NYSERDA)
- Local Organizations: Housatonic Valley Association, Cary Institute, and Cornell Cooperative Extension
- First Environment, Inc. – Ms. Lindsey Shanks and Dr. Phil Ludvigsen
- Millerton/North East Climate Smart Task Force:
  - Members: Chris Kennan, Town of North East Supervisor; Griffin Cooper, Town of North East Councilman; Matthew Hartzog, Village of Millerton Trustee; Laurie Kerr, Village of Millerton Trustee; CAC Chair, Rich Stalzer, Kathy Chow, Task Force Coordinator; Jennifer Dowley, Rhiannon Leo-Jameson, Deborah Maier, Tom Parrett, Andrew Stayman, Chris Virtuoso, and Carrissa Whitehead.

Executive Summary

The Town of North East and Village of Millerton (NY) are focused on providing leadership in addressing the causes and local impacts of climate change through actions at both the community and government operations levels. The Town and Village governments are committed to reducing greenhouse gas (GHG) emissions from their operations by implementing climate mitigation best practices that are both practical and cost-effective. To assist in meeting this objective, as lead Municipality on the joint Town / Village project, the Town received a 2018 NYS DEC-OCC grant award toward becoming a certified Climate Smart Community (CSC). This grant matched municipal funding for the development of separate government operations GHG inventories for the Town and the Village (see Appendix A and B), as well as this combined government operations climate action plan.

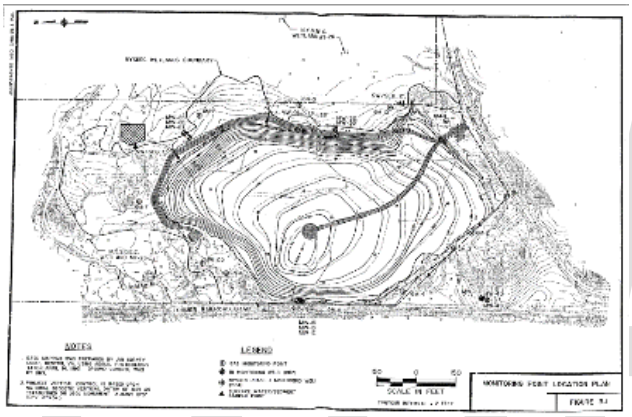
In July 2022, the Town was awarded Climate Smart Bronze Certification earning 142 points of the required 120 point threshold. The Town is also a NYSERDA Clean Energy Community. The Village has completed many CSC actions and is poised to submit for Bronze certification in 2022 / 2023 as well as NYSERDA CEC. Many of these climate actions are joint initiatives between the Town and the Village. Some have been, or will be, funded through NYSERDA and CSC grants. Additional sources of funding or guidance have been identified and can be found in Section 5.4.

The purpose of a local government climate action plan is to reduce GHG emissions from Town and Village operations by prioritizing actions and to gather support for short- and long-term investments. This includes identifying and implementing climate actions that lead to tangible benefits for the local communities. Implementation of these actions also results in CSC certification points, moving the Town of North East/Village of Millerton closer to their goal of having both municipalities become Bronze Certified Climate Smart Communities.

A key element of the combined Climate Action Plan is its GHG emissions inventories. The Town and Village's total GHG emissions (also referred to as a carbon footprint) from government operations for its selected base year of 2020 amounted to a total 2,561.68 metric tonnes carbon dioxide equivalents (tCO_2e). Although several GHG's make up the inventory, each are converted into the equivalent amount of carbon dioxide – the basic unit of global warming potential. The following table presents a breakdown between the Town and Village's total GHG emissions.

Municipality	Total GHG Emissions 2020 tCO_2e
Town of North East	2,491.85[2]
Village of Millerton	69.83
TOTAL:	2,561.68

As a point of reference, the total emissions of 2,562 tCO_2e is approximately equivalent to the GHG emissions produced by an average passenger vehicle driven 6,359,411 miles, according to the US EPA's Greenhouse Gas Equivalencies Calculator.



Based on conservative assumptions, the largest source of municipal related GHG emissions, by a large margin, is the town's closed municipal landfill (2,312.8 Tonnes of CO_2e or over 90% of total carbon footprint). This town-owned landfill was opened approximately in 1965 and operated for 35 years before closing in 1999. Although closed, the landfill continues to emit GHGs, albeit at a declining rate (See Appendix A, Table 18). It is recommended that direct measurements of the flow and concentrations of methane be taken from existing monitoring ports. For smaller and older landfills, passive methane reduction actions, such as bio covers or biofilters, tend to be more cost-effective than active actions such as methane capture and flaring.

The second largest source of emissions comes from the Town's owned and operated Vehicle Fleet (pickups, heavy trucks, and equipment for the highway department). The third largest source is Town facilities (Town Hall, Salt Shed, Storage Garage, Old Garage).

For the Village, the largest source of government operation GHG emissions is its vehicle fleet. The second largest is its building and facilities, followed by Village employee's commute, streetlights, and traffic signal being the last area of emissions. Details on these emissions can

[2] Without the landfill, the Town's carbon footprint would be only 245 tCO2e.

be found in Section 3.2 - Major Sources of Greenhouse Gas (GHG) Emissions in Government Operations, as well as Appendices A and B.

A major element of this Government Operations Climate Action Plan is to develop GHG reduction targets for the short (1-year), medium (5-year), and longer term (10-year) time horizons. Based on practical and cost-effective climate action strategies, the following emission reduction targets have been set forth in this plan.

Government Operations GHG Reduction Target	Target Year	Reduction Goal from 2020 Base Year GHG Inventory (%)
Year 1	2023	3%
Year 5	2027	10%
Year 10	2032	25%

Meeting these targets results in additional bonus performance points counting toward Climate Smart Community certification.

Because the landfill emissions are such a large part of the GHG inventory, the impact of planned emission reductions will be assessed with and without the landfill emission source. Although planned climate activities are projected to meet the Town and Village's combined GHG reduction targets, the following planned or proposed facilities will increase each jurisdiction's carbon footprint:

- new Town/Village garage,
- new combined town hall,
- new wastewater treatment system, and
- expansion of Village Park (Eddie Collins).

It is also important to note that landfill GHG emissions will reduce naturally over time (approximately 5% a year). For these reasons, it is recommended that the GHG inventories be updated annually and a new Climate Action Plan developed every five years.

The following climate actions have been identified to meet the proposed GHG emission reduction targets.

Target Year	Climate Action Reduction Measures	Expected GHG Reductions (tCO_2e/year)	Estimated Cost / Annual Savings	Comments
Year 0-1 (2022-2023)	Village: Pump House Solar Repair (replace 15Kw Invertor)	17 tonnes	Cost: $5,000 Savings: $3,360/year	• Simple implementation • Low-medium cost • Significant GHG emission reduction
	Town: replaces one gas vehicle with an EV	5 tonnes	Cost: $750/yr Savings: $750+/year	• Simple implementation • Low cost • Significant GHG emission reduction
	CUMULATIVE TOTAL:	22 tonnes (.9%) or 9% without landfill	✓	Exceeds Year 1-2 Target of 3% without landfill
Year 2 to 5 (2024 -2027)	Town: Green Power Purchase Agreement	3.5 tonnes	Cost: $4,900 Savings: $0	• Simple implementation • Low cost • Significant GHG emission reduction
	Village LED Streetlight Replacement	2.3 tonnes	Cost: $123,000 Savings: $22,000/year	• Simple implementation • Medium cost • Minor GHG reductions
	Village: Upgrade or Expand Pump House Solar	Variable	Cost: $2.50 to $3.22 per watt Savings: Variable	• Medium complexity • Medium/high cost • Significant GHG reductions
	Village: Upgrade Village Pump House Operations – New Eff. Pumps	Variable	Cost: Variable Savings: Variable	• Medium complexity • Medium cost • Minor GHG reductions
	CUMULATIVE TOTAL:	28+ tonnes (1%) or 11+% without landfill	✓	• Exceeds Year 5 Target of 10% without landfill
Year 6 to 10 (2028-2032)	Town: Closed Landfill - Methane Biotreatment	610 tonnes	Cost: $50,000 to $150,000 Savings: $0	• Medium implementation • Medium cost • Major GHG reductions
	CUMULATIVE TOTAL:	638+ tonnes (25%) or 260% without landfill	✓	• Meets or Exceeds Year 10 Target of 25% with and without landfill

In conclusion, the Town of North East and Village of Millerton have established a credible base year (2020) GHG inventory of its local government operations. The largest sources of GHG emissions are the Town's closed landfill, followed by its fleet of vehicles and buildings/facilities. The Village's largest source of GHG emissions is its vehicle fleet, followed by its buildings/facilities, employee commute, and streetlights/traffic signals.

Based on input from the Climate Smart Task Force, Board and Citizens, practical climate actions have been identified to meet or exceed the Town and Village's 1, 5 and 10 Year GHG reduction targets. In addition, these climate actions will also help meet the Town and Village's Climate Smart Community certification goals.

1. Introduction

1.1 Background on the Town of North East, New York

The Town of North East was founded in 1788 and is situated in the northeastern corner of Dutchess County, from which it takes its name. It lies along the upper reach of the Harlem Valley and is home to the village of Millerton and several historic hamlets.

The Town of North East hosts Rudd Pond State Park and the Harlem Valley Rail Trail. The town features a rural landscape with rolling hills and beautiful valleys. It sustains a mix of agricultural and residential uses surrounding the vibrant Village of Millerton.

According to the United States Census Bureau, the town has a total area of 43.7 square miles (113.2 km^2), 43.2 square miles (111.8 km^2) of which is land and 0.54 square miles (1.4 km^2), or 1.28%, is water. [3] By the year 2010, The Town's population grew to 3,031 from 2,918 in 1990 with an influx of new residents.[4]

1.2 Background on the Village of Millerton, New York

Founded in 1851, the Village of Millerton was named after Sidney Miller, a Civil Engineer responsible for the design and construction of the main train line into the area. One of the original three rail lines has been transformed into the Harlem Valley Rail Trail, a 16 mile bike and walking trail, which bisects the village and is part of the Hudson River Valley Greenway.

Surrounded by the Town of North East, the Village of Millerton flourished as a railway destination and agricultural hub in the late 19th and early 20th centuries. As rail lines and agricultural processing declined, Millerton built on its rural roots to develop a thriving "foodie" seen coupled with a growing focus on the arts. As of the 2000 census[9], there were 925 people, 375 households, and 232 families residing in the village.

[3] "Geographic Identifiers: 2010 Demographic Profile Data (G001): North East town, Dutchess County, New York". U.S. Census Bureau, American Factfinder. Archived from the original on February 13, 2020. Retrieved November 12, 2015

[4] *"2016 U.S. Gazetteer Files". United States Census Bureau. Retrieved July 4, 2017*

The town and village are accessible via the NY Route 22 and US Route 44 highways and are located within one hour of travel time from the county seat of Poughkeepsie, New York and two hours north of New York City (NYC).

1.3 Background of the Town of North East's and Village of Millerton's Combined Government Operations Climate Action Plan

In 2015, Dutchess County consolidated individual and intermunicipal plans into a county-wide AHMP. In 2016, with staff and organizational assistance of the Housatonic Valley Association (HVA) of Cornwall Bridge, Connecticut, the Town of North East and neighboring communities along the Ten Mile River (TMR) formed the Ten Mile River Watershed Roundtable.

In 2018, HVA staff introduced the Town of North East to the NYS DEC Climate Smart Communities certification program. The Town of North East and the Village of Millerton both registered as Climate Smart Communities and intend to proceed together towards Certification. With support from the TMR Roundtable and HVA's assistance with technical climate change data, the Town of North East received a 2018 NYS Consolidated Funding Application (CFA) grant in a round of competitive Climate Smart Communities (CSC) Certification Program funding. The grant funded this Climate Action Plan and GHG emission inventories that provides a 2020 baseline of the Town and Village's government operations along with strategies to achieve notable GHG reductions at 1-, 3- and 10-year intervals.

This document offers recommendations for elected officials, department heads, and town staff members to serve as community leaders in local efforts and practices to protect the Town and village's resilient natural resources and ameliorate the preventable causes of climate change wherever possible.

1.4 Regional Efforts to Address Climate Change

In 2010, Dutchess County published a comprehensive[5] report detailing the climatic conditions and air quality of the County as part of the Natural Resource Inventory. The County reported that the area was already facing impacts of climate change, such as increasing mean annual temperature and a longer frost-free season. The number of days with snow cover has

[5]The Natural Resource Inventory of Dutchess County, NY (November 2010) http://www.co.dutchess.ny.us/CountyGov/Departments/Planning/16138.htm

decreased, and winter precipitation is anticipated to become more "slushy." The increase in heavy, dense, wet winter precipitation will increase the occurrence of icy roads and fallen trees and power lines, making winter storms more dangerous for motorists and residents.

The Report also describes the region's propensity for flooding. Each major stream in the County has a number of flood prone areas. Certain climatic phenomena, such as hurricanes, tropical storms, and severe thunderstorms often deliver heavy rainfall that causes flooding in the region. The Report also describes the result of climate change on flooding in the region. There is projected to be an increase in the frequency and intensity of extreme precipitation events, which will lead to more frequent and more severe flooding. Additionally, the level of the Hudson River is projected to rise, which will further exacerbate flooding.

In 2012, NYSERDA released the Mid-Hudson Regional Greenhouse Gas Emissions Inventory[6] for the base year 2010. This report included seven counties from the Mid-Hudson region of the state. Dutchess County emissions were consistent with those of other counties, and Dutchess County was about average in both overall GHG emissions as well as GHG emissions per capita. The largest emissions sector was transportation, followed by residential and commercial energy consumption. The Inventory was essential for understanding the sources of emissions in the region and in each county. Local governments now have a data-driven basis for proposing emissions reductions strategies to reduce the future impacts of climate change, many of which were described in the Dutchess County Natural Resource Inventory.

The Town and Village are continuing to build upon these regional efforts, and its own efforts, to address both the causes of climate change and local impacts resulting from climate change. This report is a key component of that effort and will provide a baseline for continuing emissions reductions.

[6] Mid-Hudson Regional Greenhouse Gas Emissions Inventory (December 13, 2012) https://www.dec.ny.gov/docs/administration_pdf/midhudghginventory.pdf

2. Climate Smart Communities Program

Climate Change is one of the defining issues of our time. Global warming is of particular significance. The International Panel on Climate Change (IPCC) estimates a greater than 95 percent probability this warming is a result of human activity since the mid-20th century and proceeding at a rate that is unprecedented over millennia.[7] The authors of the 2021 Assessment report conclude that "it is "unequivocal" that humans have warmed the planet, causing "widespread and rapid" changes to Earth's oceans, ice and land surface."[8] National, regional, and local governments from around the world are addressing this challenge by making commitments and taking actions to reduce their own operational emissions (carbon footprint).

In 2009, New York State established the Climate Smart Communities program as a partnership between state and local governments to reduce greenhouse gas emissions (GHGs) in response to Climate Change. Some of the benefits of this program include saving taxpayer dollars and advancing community goals for health and safety, as well as improving economic vitality, energy independence, and quality of life. This partnership includes six New York State agencies that jointly sponsored the CSC Program, including the New York State Energy Research and Development Authority (NYSERDA), Department of State, Department of Environmental Conservation, Department of Health, Department of Transportation, and the Public Service Commission.

2.1 Purpose and Goals

The purpose of the CSC Certification program is to encourage ongoing implementation of actions related to mitigation of climate change through reduction of greenhouse gas emissions and adaptation to effects of climate change, and to recognize achievements of local governments. The primary goal is to provide a more structured framework and guidance for local governments to advance their local climate action through their existing CSC Pledge and the elements listed above. Participation in CSC and the CSC Certification Program is voluntary.[9]

The CSC certification program is designed to address 10 focus areas, or "pledge elements," including:

[7] IPCC Fifth Assessment Report, Summary for Policymakers
[8] IPCC's sixth assessment report on climate science, 9 August 2021, Q&A, In-depth Q&A: The IPCC's sixth assessment report on climate science - Carbon Brief
[9] New York State Department of Environmental Conservation, 2014, p 1-6. Climate Smart Communities Certification Manual. Albany, New York. http://www.dec.ny.gov/energy/50845.html.

1. Pledge to be a Climate Smart Community;
2. Set Goals, Inventory Emissions, Plan for Climate Action;
3. Decrease Community Energy Use;
4. Increase Community Use of Renewable Energy;
5. Realize Benefits of Recycling & Other Climate-Smart Solid Waste Management;
6. Reduce GHG Emissions Through Climate-Smart Land-Use Tools;
7. Enhance Community Resilience & Prepare for the Effects of Climate Change;
8. Support Development of a Green Innovation Economy;
9. Inform & Inspire the Public;
10. Commit to an Evolving Process of Climate Action.

Once a local government adopts the CSC Pledge and submits a certified copy of the adopting resolution to the Department of Environmental Conservation (DEC), it will automatically become a Registered Climate Smart Community. Each CSC can then implement actions at its own pace. There is no time limit between adoption of the pledge and commencement of the remainder of the certification process.

2.2 The Certification Process

CSC Certification is based on a rating system. This system is designed to:

- be broadly applicable and useful to all local governments in New York State;
- user friendly;
- acknowledge early adopters;
- promote ongoing action; and
- reward leaders.

The rating system includes a variety of actions that can have an effect on reducing GHG emissions, enhancing local resilience, or building a green economy. Each action is assigned a score. Score points are awarded based on the program priority, duration, impact, and certainty the action will take place. The types of actions include:

- GHG Inventory development, assessment, and reporting;
- various plan developments including Climate Action planning;
- new policies, laws, or zoning;
- education and outreach;
- partnership and collaboration;
- operational changes;
- programs, services, and incentives;
- facilities and infrastructure;
- reporting; and

- bonus points for innovation and overall performance.

Certified Climate Smart Communities (CSCs) can also earn bonus points by demonstrating innovation or achieved performance. The more actions implemented, the more points are awarded resulting in award levels and certification.

2.3 Award Levels and Certification

The CSC Certification program is based on two types of actions:

- Priority actions: A group of actions that must be completed for each award level. Applicants must complete the required priority actions for each award level along with a minimum number of additional priority actions for each award level.
- Optional actions: All actions that are not labeled as priority. Applicants may select any optional actions to complete to earn points toward one of the award levels.

In addition to certification, CSCs can achieve several award levels: bronze, silver, and gold. Award levels are based on the total points earned and the completion of selected priority actions. For each of the certification and award levels, the program specifies a minimum number of priority actions that must be completed, as indicated in Table 1, as well as a minimum number of points that must be accumulated by completion of optional actions in addition to the points earned by completion of priority actions.[10]

Table 1. CSC Certification Program Requirements

Award Level	Description	Point Requirement	Minimum Pledge Elements	Mandatory Actions	Minimum Additional[2] Priority Actions	Minimum Performance/ Innovation Points
Registered Climate Smart Community	Local governments are recognized as being registered with the program upon signing the CSC pledge.	N/A	PE1	1.1	N/A	0
Certified Climate Smart Community, Bronze	First level of certification or local governments that have made a commitment and have begun to take action.	120 points	At least 1 action completed under 4 different PEs	PE1 Action: CSC Task Force & PE1 Action: CSC Coordinator	3 priority actions	0 Points

[10] New York State Department of Environmental Conservation, 2014, p I-12, Table 2. Climate Smart Communities Certification Manual. Albany, New York. http://www.dec.ny.gov/energy/50845.html.

Award Level	Description	Point Requirement	Minimum Pledge Elements	Mandatory Actions	Minimum Additional[2] Priority Actions	Minimum Performance/ Innovation Points
Certified Climate Smart Community, Silver	The Second level of certification, for local governments that have implemented a wide variety of climate action actions for government operations and the community.	300 points	At least 1 action completed under 7 different PEs	PE1 Action: CSC Task Force & PE1 Action: CSC Coordinator	6 priority actions	10 Points (10% reduction)
Certified Climate Smart Community, Gold	The highest level of certification, for local governments that have successfully taken action to address all pledge elements and can demonstrate tangible reductions in GHG emissions.	Under Development	Under Development	Under Development	Under Development	Under Development

[2] Additional priority actions include 1.2, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 7.1, and 7.3.

The priority actions are focused largely on relatively low-cost assessments and policies that build baseline knowledge and plan for future action, or that establish local government as a leader in emerging fields. The number of priority actions that must be completed increases with each level of certification. The Town and Village's efforts are summarized in the Local Framework for CSC Certification Efforts Section below.

The Climate Smart Communities (CSC) Grant Program is a competitive 50/50 matching grant program for municipalities to implement projects focused on climate change adaptation and greenhouse gas (GHG) mitigation. Project types also include certain planning and assessment projects that are part of a strategy to achieve Climate Smart Communities Certification. Funding for this Climate Action Plan, including development of separate Town and Village GHG inventories, came from the 2018 grant program. Up to $12 million is available in 2022 for implementation grants of between $50,000 and $2,000,000 for mitigation and adaptation projects.

2.4 Regional CSC Certification Efforts

To date, 360 New York communities have adopted the Climate Smart Communities pledge. Over 46 percent of New Yorkers live in these "pledged" ("registered") communities with 85 achieving Bronze level and 9 earning Silver. In 2018, the Town of North East and the Village of

Millerton each signed a pledge, along with hundreds of other municipalities around New York State, to develop community-wide climate mitigation strategies and improve sustainability.

2.5 Local Framework for CSC Certification Efforts (Status)

In July 2022, the Town was awarded Climate Smart Bronze Certification earning 142 points of the required 120 point threshold. The Town is also a NYSERDA Clean Energy Community. The Village has completed many CSC actions and is poised to submit for Bronze certification in 2022 / 2023 as well as NYSERDA CEC.

A list of actions that have been taken towards Bronze-level Climate Smart Communities can be found at https://climatesmartmillerton.org/wp-content/uploads/2022/04/Town-Bronze-Action-Chart.pdf.

So far 85 communities in NY State have achieved Bronze Certification, including the neighboring communities of Village of Ancramdale, Rhinebeck, Dover Plains, and Town of Red Hook. Support for the process has been provided by advisors at Hudson Valley Regional Council and the grant funded Local Champions Program from Partners for Climate Action Hudson Valley.

2.6 Climate Action Plan Development and Interagency Collaboration

The purpose of a local government climate action plan is to reduce GHG emissions from Town operations by prioritizing actions and to gather support for short- and long-term investments. This includes identifying and implementing climate actions that are practical, cost-effective, and lead to tangible benefits for the local community. These benefits include:

- costs savings via energy efficiency and reduced energy consumptions;
- cost savings via reduced maintenance and storm damage;
- increased tax revenue via improved property values and new green economic developments and jobs;
- increased visibility of the Town of North East and the Village of Millerton with potential businesses via leadership awards; and
- grant and low-interest loan opportunities via various State programs.

Development of this Climate Action Plan for government operations project was commissioned as part of the Town and Village grant-funded and community-sponsored activities to achieve Climate Smart Community Certification. Completion of the plan can add up to 12 additional potential points toward program certification.

The scope of this plan includes establishing a local government operations GHG inventory for each Town and Village. This tool will be used to select a base year, set realistic emissions reduction targets, and track GHG performance moving forward. Once the local government operations GHG inventory has been quantified, GHG emission target/s and related emission reduction actions can be identified, prioritized, and implemented. These targets and actions are broken into short (1-5 years), medium (6-10 years), and long-term (over 10 years) time horizons. This allows the Town and Village to see short-term impacts and benefits while keeping longer term goals in mind.

Several New York State agencies have various programs targeted at reducing GHG emissions from municipal operations. For example, New York State Energy Research and Development Agency (NYSERDA) has a Clean Energy Communities Program. Local governments in New York State can use the Clean Energy Communities program to implement clean energy actions, save energy costs, create jobs, and improve the environment. In addition to providing tools, resources, and technical assistance, the program recognizes and rewards leadership for the completion of clean energy projects.

2.6.1 GHG Inventory Base & Target Years

The Town's government activity data for the calendar year 2020 was collected, reviewed, and entered into a GHG inventory quantification tool. Because this was the most recent full year of complete data collection, 2020 has been selected as the Town and Village's base emission year. The base year emissions serve as the foundation for establishing Business-as-Usual (BAU) and reduction forecasts over the short (2023), medium (2027), and long terms (2032). BAU refers to a scenario where the Town and Village pursues no measures or actions aimed at reducing energy consumption and GHG emissions. For more details on the quantification of the Base Year and determination of the Reduction Target as well as the BAU and reduction forecasts, see Appendix A & B – GHG Inventories for Town and Village.

2.6.2 Government Operations GHG Reduction Goals

Table 2 presents the reduction goals set for the target years. These goals were established in conjunction with the Climate Smart Task Force, stakeholder input, and consideration to New York State's energy plan that aims to achieve a 40 percent reduction in absolute greenhouse gas emissions from 1990 levels by 2030. In addition, Former Governor Cuomo's Clean Energy Standard will require 50 percent of New York State's electricity to be sourced from renewable energy sources by 2030.

Table 2. GHG Emission Reduction Goals

Target	Target Year	Reduction Goal from 2020 Base Year GHG Inventory (%)	Reduction Goal from 2020 Base Year GHG Inventory (tCO_2e)
Year 1	**2023**	**3%**	**77**
Year 5	**2027**	**10%**	**256**
Year 10	**2032**	**25%**	**644**

The reduction goals are presented in percent reduction and in metric tonnes of CO_2 equivalent subtracted from the 2020 base year carbon footprint. Meeting these targets results in additional bonus performance points counting toward Climate Smart Community certification. Because the landfill emissions are such a large part of the GHG inventory, the impact of planned emission reductions will be assessed with and without the landfill emission source. It is also important to note that landfill GHG emissions will reduce naturally over time (approximately 5% a year).

Although planned climate activities are projected to meet the Town and Village's combined GHG reduction targets, the following planned or proposed facilities will increase each jurisdiction's carbon footprint:

- new Town/Village garage,
- new combined town hall,
- new wastewater treatment system, and
- expansion of Village park (Eddie Collins).

For these reasons, it is recommended that the GHG inventories be updated annually, and a new Climate Action Plan be developed every five years.

3. Understanding the Town and Village's Government Operations-Related Carbon Emissions

A GHG emissions inventory identifies an organization's GHG emission sources and quantifies them according to a set of acknowledged conventions using established estimation methodologies.

The Town's air emission inventory quantifies six common GHG. These are the most used recognized GHGs from human-made sources, as identified in the United Nations Framework Convention on Climate Change Kyoto Protocol (UNFCCC). The method used to quantify these emissions is the International Local Government GHG Emissions Analysis Protocol. The base protocol was developed by the GHG Protocol initiative and modified by the International Council for Local Environmental Initiative (ICLEI).

The GHG inventory of local government operations (LGO) identifies the amounts of electricity and fuels used in municipal buildings, streetlights, fleets, and other operations controlled by the local government. The LGO GHG inventory does not include emissions generated by the Town and Village residents and businesses, including power generation facilities, if present. The emissions from these sources are accounted for separately and constitute the Community GHG emissions inventory, which are reported under a different Protocol. While a community-wide GHG inventory is a Climate Smart Communities certification action and may be conducted by the Town and Village in the future, it was not included in the scope of this report.

3.1 Government Operations-Related Greenhouse Gas Inventory

Organizational boundaries define the limits of a GHG inventory by identifying the activities that are owned and/or controlled by the Town or Village and determining which emission sources should be included in its GHG inventory.

Operational boundaries in a GHG inventory refer to the specific types of emission sources that are included within the Town GHG inventory's organizational boundaries. A key distinction in setting operational boundaries is whether GHG emissions sources are categorized as direct emissions or indirect emissions.

- Direct emissions (or Scope 1): result from emission sources that are owned or operated by the organization.
- Indirect emissions (or Scope 2 and Scope 3): emissions that are due to an organization's activities but occur from sources owned or controlled by another organization.

- Scope 2 indirect emissions cover consumption of three-party provided electric power, steam, heating, and cooling.
- Scope 3 emissions are all other indirect emissions not covered in Scope 2. Scope 3 emissions are not included in this report.

3.2 Major Sources of Greenhouse Gas (GHG) Emissions in Government Operations

A list of emission sources in the Town and Village GHG inventories are presented in the following tables, organized by Scope and Sector.

3.2.1 Scope 1 - Direct Emissions (Fuel Consumption & Refrigerants)

Table 3A presents Scope 1 sources of GHG emissions for the Town and Table 4B present Scope 1 sources for the village.

Table 3A: Scope 1 Emission Sources for the Town

Scope	Source	Emission Category
Scope 1	Town Hall	Emissions from Stationary Fuel Combustion
Scope 1	Old Garage	Emissions from Stationary Fuel Combustion
Scope 1	2011 John Deere Tractor	Emissions from Off Road Vehicles
Scope 1	2006 Salsco Wood Chipper	Emissions from Off Road Vehicles
Scope 1	2014 Gradall XL3100IV	Emissions from Off Road Vehicles
Scope 1	2018 Volvo Wheel Loader	Emissions from Off Road Vehicles
Scope 1	2018 Bobcat Skid Steer	Emissions from Off Road Vehicles
Scope 1	Transfer Tank ID# N28	Emissions from Off Road Vehicles
Scope 1	2019 CAT 420FS ST Backhoe	Emissions from Off Road Vehicles
Scope 1	2015 Chevrolet 1500 Pickup	Fleet Vehicle Emissions
Scope 1	2012 Ford F-350 Pickup	Fleet Vehicle Emissions
Scope 1	2006 International 7500 Dump Truck	Fleet Vehicle Emissions
Scope 1	2005 International 7600 Dump Truck	Fleet Vehicle Emissions
Scope 1	2016 International 7500 Dump Truck	Fleet Vehicle Emissions
Scope 1	2019 International HV513 Dump Truck	Fleet Vehicle Emissions
Scope 1	1995 International 5000 Dump Truck	Fleet Vehicle Emissions
Scope 1	2015 Ford F-350 Dump Truck	Fleet Vehicle Emissions
Scope 1	Unidentified Diesel Used	Fleet Vehicle Emissions
Scope 1	Unidentified Gasoline Used	Fleet Vehicle Emissions
Scope 1	2017 International 4400 Bucket Truck	Fleet Vehicle Emissions
Scope 1	Town of North East Landfill	Solid Waste Facility Emissions

Table 3B: Scope 1 Emission Sources for the Village

Scope	Source	Emission Category
Scope 1	2009 Case Backhoe	Emissions from Off Road Vehicles
Scope 1	5 Gallon Yellow Ca ID# 20	Emissions from Off Road Vehicles
Scope 1	5 Gallon Red Can ID# 21	Emissions from Off Road Vehicles

Scope	Source	Emission Category
Scope 1	2016 Ford F-550	Fleet Vehicle Emissions
Scope 1	Unidentified Gas Used[11]	Fleet Vehicle Emissions
Scope 1	Unidentified Diesel Used[3]	Fleet Vehicle Emissions
Scope 1	2014 Ford F-150 Pick Up Truck	Fleet Vehicle Emissions
Scope 1	2019 Dodge 5500	Fleet Vehicle Emissions
Scope 1	1995 International 4700	Fleet Vehicle Emissions
Scope 1	Pump Plant	Emissions from Stationary Fuel Combustion

Scope 1 emissions were estimated from activity (usage) data related to the above sources. This included fuel consumption data and use of refrigerants (if applicable). For the Town and Village these include gasoline, diesel fuel, and fuel oil. No material use of refrigerants was found.

3.2.2 Scope 2 - Indirect Emissions (Electricity Use)

Table 4A presents Scope 2 sources of GHG emissions for the Town and Table 4B presents Scope 2 sources for the village.

Table 4A: Scope 2 Emissions Sources for the Town

Scope	Source	Emission Category
Scope 2	Town Hall	Emissions from Grid Electricity
Scope 2	Old Garage	Emissions from Grid Electricity
Scope 2	Salt Shed Area Light	Emissions from Grid Electricity
Scope 2	Unheated Storage Garage	Emissions from Grid Electricity
Scope 2	Town of North East Street Lights	Emissions from Grid Electricity

Table 4B: Scope 2 Emissions Sources for the Village

Scope	Source	Emission Category
Scope 2	Village of Millerton Street Lights	Emissions from Grid Electricity
Scope 2	Pump Plant	Emissions from Grid Electricity
Scope 2	Water Tower	Emissions from Grid Electricity
Scope 2	Village Hall	Emissions from Grid Electricity
Scope 2	Main Street Gazebo Outlet	Emissions from Grid Electricity
Scope 2	Veterans Park Outlet	Emissions from Grid Electricity
Scope 2	Rte 44 & 22 Outlet	Emissions from Grid Electricity
Scope 2	Denny Park	Emissions from Grid Electricity

[11] Fuel was pumped from Taylor Oil in small miscellaneous quantities into unspecified vehicles and cans. As of June 2020, tracking is handled via Village fuel depot system..

Scope 2 emissions were estimated from activity (usage) data related to the above sources. This included electricity consumption data such as kWh purchased.

Scope 3 emissions from employee commute were estimated from activity data (miles driven) based on survey information or general assumptions for full and time-time employees.

3.2.3 Source Exceptions

No sources of PFCs, NF3, or SF6 (other standard greenhouse gases) were identified in the Town or Village's inventory boundary.

3.3 Quantification of Government Operations Emissions

One of the first steps in the climate action plan process is establishing a baseline from which to set goals and measure progress. The baseline GHG inventory provides the local government the data needed to prioritize actions that will offer the best return on investment, whether through cost, energy consumption, or GHG emissions savings. A baseline GHG emissions inventory of government operations must include all applicable sources of Scope 1 (direct) emissions such as fuel combustion and Scope 2 (indirect) emissions such as electricity usage. Reporting Scope 3 indirect emissions that are not Scope 2, such as government travel, is encouraged.

A full explanation of the Government Operations GHG inventory quantification is included in Appendix A and B for the Town and Village respectively. This includes details on the methods, assumptions, and quantification results as well as the modeling and forecast of the Business-as-Usual (BAU) emissions scenario used to evaluate the effectiveness of the proposed reduction actions.

3.3.1 Total GHG Emissions

The total GHG emissions for the Town of North East municipal operations is 2,491.85 tCO_2e. The Town's Total GHG emissions by scope (Scope 1, 2 and 3) are presented in the following Table 5A. Based on conservative assumptions, the largest source of municipal related GHG emissions, by a large margin, is the town's closed municipal landfill (2,312.8 Tonnes of CO2e or over 90% of total carbon footprint). Without the landfill, the Town's carbon footprint would be only 245 tCO2e. The Town's Total GHG emissions by scope (Scope 1, 2, and 3) are presented in Table 5B. Table 5C presents the total GHG emissions for the Town and Village for base year

2020. This total will serve as the datum or base for projecting and tracking actual GHG reductions related to specific climate actions.

Table 5A: Total GHG Emissions for the Town by Scope (tCO_2e)

GHG Emissions	tCO_2e
Scope 1 Emissions	2,487.87
Scope 2 Emissions	3.46
Scope 3 Emissions	0.52
Total	**2,491.85**

Table 5B: Total GHG Emissions for the Village by Scope (tCO_2e)

GHG Emissions	tCO_2e
Scope 1 Emissions	44.75
Scope 2 Emissions	16.07
Scope 3 Emissions	9.01
Total	**69.83**

Table 5C: Total GHG Emissions for the Town and Village by Scope (tCO_2e)

Municipality	Total GHG Emissions 2020 tCO_2e
Town of North East	**2,491.85**[12]
Village of Millerton	**69.83**
TOTAL:	**2,561.68**

The Town and Village's total GHG emissions amounted to approximately 2,562 metric tonnes carbon dioxide equivalents (tCO_2e). As a point of reference, 2,562 tCO_2e is approximately equivalent to the GHG emissions produced by an average passenger vehicle driven 6,359,411 miles, according to the US EPA's Greenhouse Gas Equivalencies Calculator.

The breakdown of GHG emissions by sector for the Town with and without the Landfill is presented in the following Figures 1A and 1B, respectively. The largest source of emissions for the Town is its landfill that accounts for approximately 93 percent of the Town's emissions. The second largest source of emissions consist of stationary combustion using fuel oil, and mobile

[12] Without the landfill, the Town's carbon footprint would be only 245 tCO2e.

combustion using diesel fuel by the Town fleet vehicles. The breakdown of GHG emissions by sector for the Village is presented in Figure 1C. The Village's largest source of emissions is its vehicle fleet followed by its buildings and facilities.

Figure 1A: Town Total GHG Emissions by Sector, in Percentage

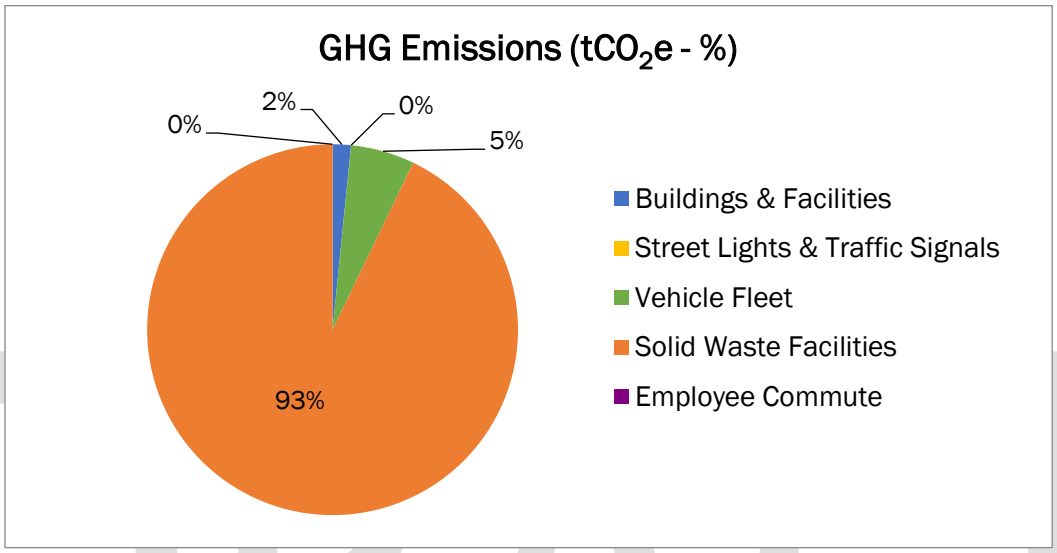


Figure 2B: Town Total GHG Emissions by Sector without Landfill, in Percentage

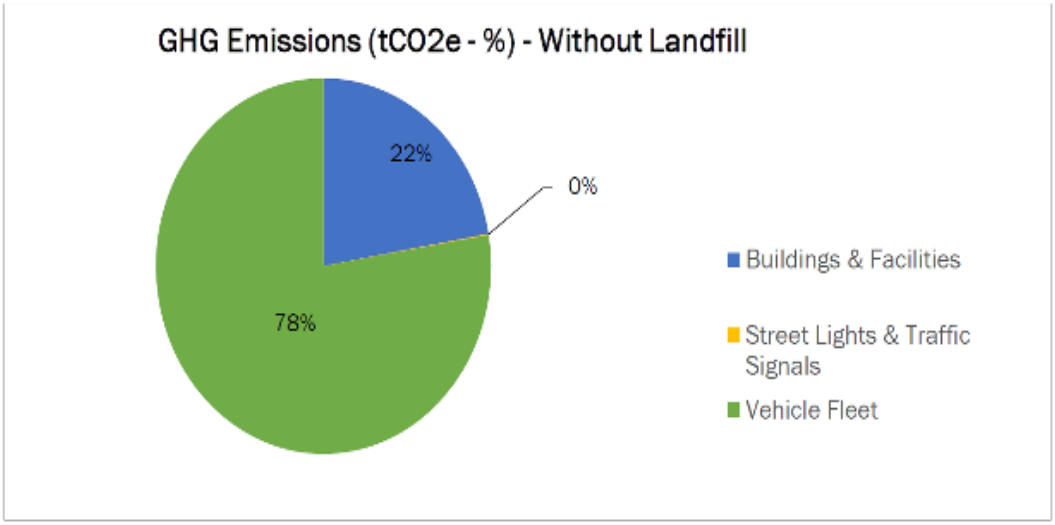
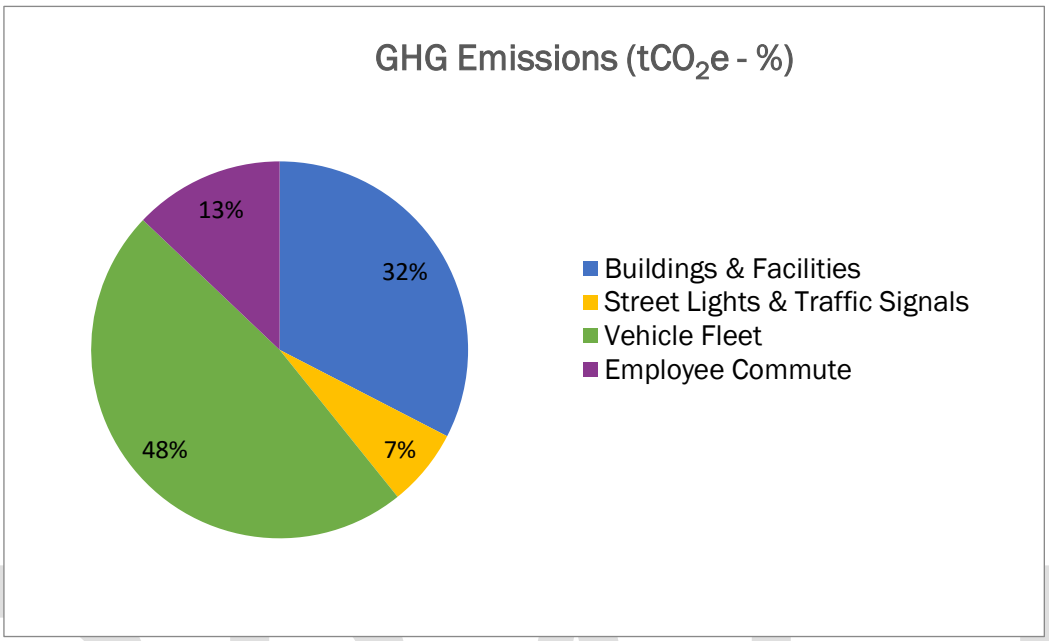


Figure 3C: Village GHG Emissions by Source, in Percentage



A detailed breakdown of the Town of North East and Village of Millerton's Scope 1, 2, and 3 emission sources can be found in Appendices A and B, respectively.

4. Government Emissions Reduction Focus – Reduction Plan

4.1 Practical Considerations

Several factors must be considered when identifying climate actions that make sense for the Town and Village. These include:

- estimated GHG reduction from implementation,
- estimated Cost (initial and ongoing – if available),
- estimated Savings (electricity and fuel),
- timing (short-, medium-, or long-term),
- ability to cost-effectively meet GHG reduction targets ("Bang for the Buck").

4.2 Priority Reduction Actions

Based on potential areas of GHG reduction identified by the Climate Smart Community Task Force, First Environment used available information and engineering assumptions to estimate anticipated GHG emission reductions, costs, and savings for the following priority climate actions:

- Village: Pump House Solar Repair (replace 15Kw Invertor),

- Town: replaces one gas vehicle with an EV,
- Town: Green Power Purchase Agreement,
- Village: LED Streetlight Replacement,
- Village: Upgrade or Expand Pump House Solar,
- Village: Upgrade Village Pump House Operations – New Eff. Pumps,
- Town: Closed Landfill - Methane Biotreatment.

5. Government Operations Climate Action Plan Implementation and Impact

The following government operations-related climate actions were selected based on the practical considerations and priority analysis above. When implemented, these actions may be eligible for CSC points needed for next level award certification.

5.1 Actions to Meet Year 1 Goal of 3 Percent Reductions

The following table summarizes the recommended actions of repairing a broken solar power array at the Village pump house and the replacement of an old gas-powered vehicle with a new Electric Vehicle (EV). It is anticipated that these actions, when implemented, will exceed the Town and Village's Year 1 (2022 - 2023) reduction goal (without landfill) of three percent.

Target Year	Climate Action Reduction Measures	Expected GHG Reductions (tCO_2e/year)	Estimated Cost / Annual Savings	Comments
Year 0-1 (2023)	**Village: Pump House Solar Repair (replace 15Kw Invertor)**	**17 tonnes**	**Cost: $5,000 Savings: $3,360/year**	• Simple implementation • Low-medium cost • Significant GHG emission reduction
	Town: replaces one gas vehicle with an EV	**5 tonnes**	**Cost: $750/yr Savings: $750+/year**	• Simple implementation • Low cost • Significant GHG emission reduction
	CUMULATIVE TOTAL:	**22 tonnes (.9%) or 9% without landfill**	✓	**Exceeds Year 0-1 Target of 3% without landfill**

5.2 Actions to Meet Year 5 Goal of 10 Percent Reductions

The following table summarizes the recommended actions focused on the Town entering into a Power Purchase Agreement (PPA) for clean renewable energy as well as the Village implementing LED streetlight replacement, upgrading or expanding the existing Pump House Solar Electric Array and upgrading Pump House equipment to high-efficiency pumps. These actions are anticipated to exceed the Town and Village's Year 5 (2026/27) reduction goal (without landfill) of 10 percent.

It was not possible to calculate certain costs and/or savings for projects without initial design specifications. Where possible, engineering assumptions were made, or ranges provided for costs and savings. Where it was not possible, savings and costs are designated as "variable."

Target Year	Climate Action Reduction Measures	Expected GHG Reductions (tCO_2e/year)	Estimated Cost / Annual Savings	Comments
Year 2 to 5 (2027)	Town: Green Power Purchase Agreement	3.5 tonnes	Cost: $4,900 Savings: $0	Simple implementation Low cost Significant GHG emission reduction
	Village: LED Streetlight Replacement	2.3 tonnes	Cost: $123,000 Savings: $22,000/year	Simple implementation Medium cost Minor GHG reductions
	Village: Upgrade or Expand Pump House Solar	Variable	Cost: $2.50 to $3.22 per watt Savings: Variable	Medium complexity Medium/high cost Significant GHG reductions
	Village: Upgrade Village Pump House Operations – New Eff. Pumps	Variable	Cost: Variable Savings: Variable	Medium complexity Medium cost Minor GHG reductions
	CUMULATIVE TOTAL:	28+ tonnes (1%) or 11+% without landfill	✓	Exceeds Year 5 Target of 10% without landfill

5.3 Actions to Meet Year 10 Goal of 25 Percent Reductions

The following table summarizes the recommended actions focused on using biotreatment of methane from the town's closed landfill. This action is anticipated to exceed the Town and Village's Year 10 (2027/28) reduction goal of 25 percent.

Target Year	Climate Action Reduction Measures	Expected GHG Reductions (tCO_2e/year)	Estimated Cost / Annual Savings	Comments
Year 6 to 10 (2032)	Town: Closed Landfill - Methane Biotreatment	610 tonnes	Cost: $50,000 to $150,000 Savings: $0	• Medium implementation • Medium cost • Major GHG reductions
	CUMULATIVE TOTAL:	636+ tonnes (25%) or 260% without landfill	✓	• Exceeds or exceeds Year 10 Target of 25% with and without landfill

A biofilter consists of a porous material layer as well as an organic material (often compost) layer to oxidize methane in LFG. A flexible tube or similar conveyance connects the gas vent to the biofilter to route the LFG. The biofilter may be enclosed in a container and may have a cover to prevent precipitation from entering the filter. Biofilters are well suited for landfills that have declining gas flow and that have passive vents like the Township's landfill.

The accompanying picture includes biofilters used at the Jefferson County Landfill in Washington State. These biofilters were install after the Jefferson Landfill was unable to maintain an active flair.[13]

It is recommended that the Town seek available NYSDEC grants for municipal landfill gas management. The NYSDEC is authorized to provide grants to Municipal Landfill Gas Management projects that promote improved air quality at solid waste landfills, capture greenhouse gases, and encourage energy recovery from landfill gas. The following entities within New York State are eligible to apply for these grants:

- Counties, Cities, Towns or Villages;
- Local Public Authorities;
- Local Public Benefit Corporations (organizations established by State Law);
- School Districts, Supervisory Districts & Improvement Districts;
- Native American Tribes or Nations residing in New York State.

The eligible applicant must own or operate a permitted non-hazardous solid waste landfill in New York State (For more information see https://efc.syr.edu/municipal-landfill-gas-management-program/).

Additional sources to help fund various climate actions are presented in the following section.

[13] EPA Landfill Methane Outreach Program (LMOP) Web Site – Apply Biofilters or Biocovers, Apply Biofilters or Biocovers | US EPA.

5.4 Potential Sources of Funding and Guidance for Government Operations Capital Projects to Reduce GHG Emissions

The following initiatives and State agencies can provide guidance to additional funding sources as well as guidance to project implementation.

- NYSDEC Grants for Municipal Landfill Gas Management Projects (https://efc.syr.edu/municipal-landfill-gas-management-program/).
- Mid-Hudson Streetlight Consortium (http://courtneystrong.com/about-mhsc/).
- New York State Energy Research & Development Authority (NYSERDA): Grants and loans for renewable energy projects (https://www.nyserda.ny.gov/About/Funding).
- New York Department of Environmental Conservation (https://www.dec.ny.gov/pubs/grants.html): Grants for environmental projects, some of which address Climate Change mitigation and adaptation include:
    - purchasing land for the NYS Forest Preserve,
    - restoring habitat,
    - controlling invasive species,
    - upgrading municipal sewage treatment plants,
    - cleaning up waterfront property and creating a public park,
    - helping business develop ways to recycle material,
    - municipal zero-emission vehicle (ZEV) infrastructure grant program.
- New York State Clean Water Revolving Fund: low-interest loans for water shed protection (https://www.efc.ny.gov/cwsrf).
- Home Depot Community Impact Grants Program: (https://corporate.homedepot.com/community/home-depot-foundation-grants).
- New York State Municipal Local Government funding guide database (Funding Guide Database - Environmental Finance Center – Syracuse University).

6. Our local governments could set an example in reducing carbon emissions and addressing climate change

Governments in New York State have a history of leading on many issues, such as requiring best practices for design and construction, fair pay for government workers, and non-discrimination policies. Such leadership has both direct and indirect impacts. The direct impacts come from the improvements made to the government operations, and they are important. But they typically pale compared to the indirect impacts, which can be transformational: creating viable examples that the public can see and experience, training local stakeholders and contractors on novel strategies and technologies, and starting to create demand for such expertise. For these reasons, the Town of North East and the Village of Millerton are addressing climate change in their own portfolios.

Town and Village officials have taken the important first steps to adopt the Climate Smart Communities Pledge and register with the Clean Energy Community Program. Many of the CSC actions completed by the Town and Village have identified policies, methods, and practices specific to our community that decrease greenhouse gas emissions and increase resilience. The Joint Comprehensive Plan and the HVA Review of Policies and Procedures both have checklists that prioritize recommended steps toward local sustainability. Additionally, the plans and policies mentioned below offer systems and suggestions for implementation.

The Town earned Climate Smart Bronze status in July 2022. The joint Climate Smart Task Force has also identified actions the Village can undertake and submit to achieve CSC Bronze certification. Many actions have already been completed jointly with the Town and can be submitted with appropriate writeups. Others can follow the framework of approved Town actions once they are adapted to the specific circumstances of the Village. The final category of recommended actions applies only to the Village as the Town does not have those features. In each of those cases, significant work towards completion of the requirements has already been done. It is recommended to submit quickly as the Village has a head start and the benefits of certification include strengthening of grant applications for important and timely projects such as the “game changing” wastewater treatment system.

This section will highlight follow through, initiatives, and actions that elected officials, boards and councils, staff, and the Climate Smart Task Force can implement through this Government Operations Climate Action Plan.

6.1 Stakeholders and Resources

The development of this Govt. Operations Climate Action Plan provides the touchstone of the municipalities' commitments to protecting their natural resources and implementing workplace practices that help reduce GHG emissions and waste and promote recycling and reuse.

The Town and Village each have appointed volunteer boards comprised of talented residents who assist elected leaders with review of land-use development projects, preservation and enjoyment of open space and recreational facilities, and with conservation of town-based natural resources.

Relevant municipal, administrative, and advisory resources include Town and Village Boards, Zoning and Planning Boards, Zoning Review Committees, Emergency Services, Parks / Recreation, Conservation Advisory Council, and the Climate Smart Task Force.

Key Town Staff comprise the Climate Smart Green Team: Town Clerks, Budget Officer, and Highway and Water Superintendents.

Local partner entities include Townscape, North East Community Center, Housatonic Valley Association, Cary Institute, Cornell Cooperative Extension, Dutchess Land Conservancy, and Partners for Climate Action.

It is recommended to engage these substantial resources and the greater networks that of the Conservation Advisory Council and Climate Smart Task Force to consider energy efficiency and environmental impact whenever decisions are made.

6.2 Recommended Actions

Scheduled ongoing monitoring and analysis is the key to achieving the results of these recommendations for GHG reduction. The PE10 Action: GHG Tracking System establishes a system and specifies the tool for annually updating the critical data needed for evaluation. The GHG Calculator being Developed by Climate Action Associates "Small Community GHG Template" is a free tool that will track and convert the data the community wants to monitor. It is Excel based so staff know how to use it and is compatible with other office procedures for tracking energy that are already in place. Once the planned tool upgrade to include emissions from landfills is available, North East and Millerton are encouraged to implement the tool, complete the PE10 Action, and claim the associated CSC points.

Based on municipal and community interests revealed in the course of this project and from the CSC Survey of 2022, it is recommended that both Town and Village officials consider these CSC actions to further protect natural resources and implement CSC practices:

- Conduct a Climate Vulnerability Assessment (PE7) including establishing official emergency centers for heating and cooling.
- Produce a community Green Vendor Fair (PE8) to educate and empower residents and businesses to improve the resiliency of their own properties and especially in converting to clean energy solutions.
- Conduct a Community GHG Inventory and Climate Action Plan.
- Study options for stretch energy codes.
- Review, finalize, adopt the Master Plan For Bicycling & Walking, 2022.

The following individual plans exist in draft form. It is recommended to include specific opportunities from the sister municipality, then jointly finalize and consider adopting them.

- Town Education and Engagement Plan, 2022;
- Town Complete Streets Plan, 2022;
- Village Pedestrian Plan, 2018.

In addition, the Town and Village have the opportunity to initiate practices that will advance CSC goals. For example:

- Implement recycling in parks and along the main streets in and around the village.
- Assess road salt reduction practices.
- Establish a master calendar of CSC related opportunities as they relate to departmental tasks. For example, a schedule to review prioritized projects identified in this plan and reminders to department heads of procurement policies at appropriate intervals such as the schedule for vehicle replacement.

Importantly, two high impact projects involve complex challenges and would benefit from holistic evaluation of complications and opportunities. They would likely require partnership with county or state government. These include:

- Assessment of the area encompassing the old Town Garage, Kelsey Brook, and Webatuck Creek.
- Improving pedestrian and bicycle access between Eddie Collins Park and the Rail Trail to encourage non-motorized transportation.

Current major projects that deserve special Climate Change attention are the joint NE / Millerton Highway Garage, Parks (especially Eddie Collins and the Rail Trail), the capped landfill, and the potential Wastewater Treatment System.

6.3 Village CSC Actions to Achieve Bronze Certification

At the time of this document's publication (August 2022), the Village of Millerton has made significant progress toward completion of CSC actions to achieve Bronze-level certification. The Village is well positioned and encouraged to earn Bronze Certification within a year.

The following actions have been completed jointly with the Town and are ready for submission:

- PE1 Action: CSC Task Force,
- PE1 Action: CSC Coordinator,
- PE1 Action: National/Regional Climate Program,
- PE1 Action: Partnerships with Other Entities,
- PE3 Action: Energy Code Enforcement Training,
- PE5 Action: Waste Reduction Education Campaign,
- PE6 Action: Comp Plan with Sustainability Elements,
- PE7 Action: Evaluate Policies for Climate Resilience,
- PE7 Action: Culverts & Dams,
- PE9 Action: Climate-related Public Events,
- PE9 Action: Local Climate Action Website,
- PE9 Action: Social Media.

The following actions can be completed if specific Village components are added to the existing Town actions:

- PE6 Action: Complete Streets Policy,
- PE6 Action: Planning for Biking & Walking,
- PE9 Action: Climate Change Education & Engagement.

The following actions can follow existing Town models and policies:

- PE3 Action: Benchmarking - Municipal Buildings,
- PE3 Action: Fleet Inventory,
- PE3 Action: Environmentally Preferable Purchasing Policy,
- PE5 Action: Recycling Bins in Government Buildings,
- PE6 Action: Unified Solar Permit,
- PE10 Action: GHG Tracking System.

The final category of recommended actions applies only to the Village as the Town does not have those features. In each case, significant work towards completion of the requirements has already been done.

- PE3 Action: LED Street Lights,
- PE4 Action: Solar Energy Installation,
- PE6 Action: Infrastructure for Biking & Walking,
- PE6 Action: Alternative-fuel Infrastructure,
- PE6 Action: Traffic Calming,
- PE8 Action: Farmers' Markets,
- PE8 Action: Brownfield Clean-up & Redevelopment.

6.4 Communication and Engagement Strategy

The Town of North East has established a Climate Change Education and Engagement Program for the purpose of educating the public about Climate Change Mitigation and Adaptation. Referencing the Town of North East and Village of Millerton Comprehensive Plan, the Climate Smart Task Force has created an Education and Engagement Strategy document to implement a program that seeks to inform and inspire the public to reduce greenhouse gas emissions and to join with the local government in taking steps to reduce harm and increase adaptation to the effects of Climate Change. Partnership with local government, groups, and educational resources will be integral to the program's success.

Communication and engagement strategies include:

- Listening to the public to understand their concerns and needs.
- Engaging the Local Government.
- Collaborating with local groups about Climate Change, Resilience and Mitigation.
- Identifying high-risk populations and opening dialogs.
- Maintaining active and relevant public communication & information.
- Producing public events to inspire and inform.
- Ensuring that the program is ongoing.

The robust ClimateSmartMillerton website, produced by the CS Task Force, is the communities' main hub for Climate Change information. The Greenhouse Gas Inventory page chronicles the goals, results, and recommendations of this project. The full Town and Village Inventories with Forecasts and the joint Climate Action Plan are also posted there.
https://climatesmartmillerton.org/government/#GHGInventory

6.5 Beyond 10 Years: North East and Millerton could achieve carbon neutrality by 2050

The International Panel on Climate Change, the scientific body behind the Paris Climate Accords, has determined that stabilizing the world's climate requires the developed world to achieve carbon neutrality by 2050. For municipalities in New York State, this is not as difficult as it may sound because New York State has committed to a 100% carbon neutral electrical grid by 2040 (https://www1.nyc.gov/site/sustainability/our-programs/climate-leadership-and-community-protection-act.page). This means that if the village and the town stopped burning fossil fuel and were fully electric, they could achieve carbon neutrality 10 years early, in 2040.

We recommend that the Town and Village adopt policies requiring efficient electrification to be considered for each new purchase of energy-using equipment, including vehicles, landscaping equipment, and space heating and hot water systems in buildings. If the municipality is

considering the purchase of a fuel-based alternative, it should do an analysis to determine the cost of the electric vs. fuel-based system over the useful life of the equipment, including any anticipated savings from maintenance. Also, the municipalities should purchase the most efficient model that makes financial sense over the lifespan of the equipment, since even in a carbon neutral world saving energy will be a prudent strategy, both fiscally and in terms of resilience. Finally, in the out-years -- past 2030 or 2035 -- to address any remaining combustion that is not practical to electrify, the municipalities should consider alternative low-carbon or carbon neutral fuels.

7. Conclusion

This Government Operations Climate Action Plan is the product of a partnership between the Town of North East, Village of Millerton, and the NYS DEC Climate Smart Communities. The Town and Village have established a credible base year (2020) GHG inventory for its local government operations. The largest sources of GHG emissions is the Town's closed landfill, followed by its fleet of vehicles, and buildings/facilities. The Village's largest source of GHG emissions is its vehicle fleet, followed by its buildings/facilities, employee commute, and street lights/traffic signals.

Based on input from the Climate Smart Task Force, Board and Citizens, practical climate actions have been identified to meet the Town and Village's 1, 5 and 10 Year GHG reduction targets. These Climate Actions include the following:

- Village: Pump House Solar Repair (replace 15Kw Invertor),
- Town: replaces one gas vehicle with an Electric Vehicle,
- Town: Green Power Purchase Agreement,
- Village LED Streetlight Replacement,
- Village: Upgrade or Expand Pump House Solar,
- Village: Upgrade Village Pump House Operations – New High Efficiency Pumps,
- Town: Closed Landfill Methane Biotreatment.

In addition, these climate actions will also help meet the Town and Village's Climate Smart Community certification goals.

Appendix A – Town of North East Greenhouse Gas Emissions Inventory and 10 Years Forecast for the Government Operations Activities – Base Year 2020

Appendix B – Village of Millerton Greenhouse Gas Emissions Inventory and 10 Years Forecast for the Government Operations Activities – Base Year 2020