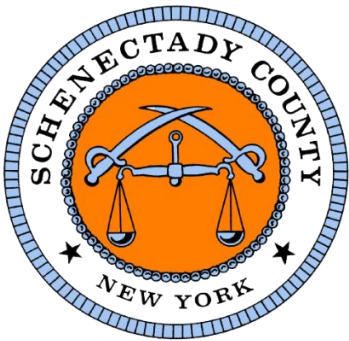


Schenectady County Climate Action Plan for Government Operations

Local Actions for Reducing Greenhouse Gas Emissions



Produced by: Schenectady County Climate Smart Communities Task Force

Approved by the Schenectady County Legislature

6/13/2023

Credits & Acknowledgements

Local Government Officials and Staff

- Legislator Sara Mae Pratt
- Legislator Richard Ruzzo
- County Manager Rory Fluman
- Deputy County Manager Shane Barga
- Charles Davidson, Sustainability Coordinator

Community Stakeholders

- Khila Pecoraro, Cornell Cooperative Extension Recycling Educator
- Alex Lykins, Schenectady County Environmental Advisory Council Chair
- Portia Zwicker, Schenectady County Environmental Advisory Council Board Member

Plan Contributors

- Divya Forbes, Climate Smart Communities Task Force Staff
- Numa Khan, Climate Smart Communities Task Force Staff
- Nicholas Klemczak, Executive Director of the Soil and Water Conservation District

External Agencies and Partners

- Capital District Regional Planning Commission
- New York State Department of Environmental Conservation
- New York State Energy and Research Development Authority
- New York State Climate Smart Communities



The Climate Smart Communities (CSC) program began in 2009 as an interagency initiative of New York State. The program is jointly sponsored by the following New York State agencies: Department of Environmental Conservation (DEC); Energy Research and Development Authority (NYSERDA); Department of Public Service; Department of State; Department of Transportation; Department of Health and the Power Authority (NYPA). DEC acts as the main administrator of the program.

Table of Contents

Executive Summary.....	4
Introduction.....	5-6
CAP Process, Goals & GHG Reduction Targets	7-7
Current Climate Protection Initiatives	9-10
Local Government GHG Inventory Assessment	11-12
Focus Area – Transportation	12-14
Focus Area - Municipal Facilities.....	15-16
Focus Area – Solid Waste	12-18
Focus Area – Energy	19-20
Initiative Prioritization.....	21
Transportation Priorities.....	12-23
Municipal Facilities Priorities.....	12-25
Waste & Recycling Priorities.....	12-27
Energy Priorities	28-29
Moving Forward.....	30

Executive Summary

New York State (NYS) is already experiencing the impacts of climate change and has made climate mitigation one of the top priorities for the state. Over 350 local governments have adopted the NYS Climate Smart Communities (CSC) Pledge to reduce greenhouse gas (GHG) emissions and prepare for the effects of a changing climate. Climate Smart Communities is a New York State program that assists local governments in the venture to reduce greenhouse gas emissions (GHG). Schenectady County is launching a new Government Operations and a Community Climate Action Plan to strategically implement actions that will result in reduced energy demand and GHG emissions across four focus areas including land use & transportation, the built environment, waste & recycling, and energy. A climate action plan (CAP) is a strategy document that sets goals and outlines a set of initiatives that a municipality can implement to reduce greenhouse gas (GHG) emissions. Using a GHG emissions inventory as the foundation, a CAP defines GHG reduction targets and identifies which CSC priority actions can help achieve GHG reduction goals.

Created by the County Manager's office, the creation of a government operations Climate Action Plan for Schenectady County will not only address climate protection, but it will also result in energy savings and advance community goals for public health and safety. By choosing to act now, Schenectady County is taking a leadership role in mitigating the impacts of climate change and aligning its goals with New York State's Climate Leadership and Community Protection Act (also known as the Climate Act), which requires a reduction in GHG emissions of 40%

Land Use & Transportation

- Goal #1: Increase the use of high-efficiency and electric vehicles and equipment used by the County
- Goal #2: Reduce miles driven by County employees by incentivizing public transportation

Built Environment

- Goal #1: Increase the conversion rate of interior LED lights
- Goal #2: Utilize energy building audits to identify more energy efficiency opportunities

Solid Waste

- Goal #1: Implement an organic waste reduction program
- Goal #2: Development guidelines for waste reduction at County special events

Energy

- Goal #1: Identify excesses in renewable energy credits and sell them to county partners
- Goal #2: Identify opportunities for collaboration with the county and its municipal partners for renewable energy initiatives

by 2030 and 85% by 2050. Based on the Community and Government GHG inventories, the proposed overall goal is to reduce County-wide energy usage and GHG emissions 40% from 2010 levels by 2030 and an 85% reduction from 2010 levels by 2050, and net zero emissions by 2040. This goal is in line with other municipalities in New York State registered as Climate Smart Communities. This plan seeks to ensure that Schenectady County embraces environmentally friendly initiatives.

Introduction

Call for Local Climate Action

Given the overwhelming consensus that greenhouse gas (GHG) emissions are causing the climate to change, Schenectady County is committed to addressing GHG emissions at the local level. Schenectady County recognizes the risk that climate change poses to its community and is taking action to reduce the GHG emissions through the initiatives laid out in this Climate Action Plan.

Climate change will affect regions of New York State in different ways. The New York State Energy Research and Development Authority (NYSERDA) completed Responding to Climate Change in New York State (ClimAID), a comprehensive report that details the projected impacts of climate change across New York State. According to this study, Schenectady County could experience an increase in temperature, including more frequent and extreme high heat days and heat waves, and more intense and frequent precipitation events. Table 1 (below) summarizes the impacts on Schenectady County as described by ClimAID. Extreme heat could jeopardize public health in the county due to degraded air quality, increased risk of heat related illnesses such as heat stroke, and increased exposure to vector-borne diseases such as Lyme disease and West Nile virus. A warmer climate could also put natural resources at risk by creating additional stresses on already sensitive ecosystems, such as the introduction of new non-native species. More intense precipitation events could cause significant flooding along the Mohawk River as well as in urban areas due to overwhelmed stormwater systems. This flooding could threaten a range of infrastructure from sewer and water to transportation and energy.

The region may also experience more extreme weather events such as ice storms, thunderstorms bringing hail and tornadoes, and tropical storms including hurricanes and nor'easters.

TABLE 1 ClimAID Projections for the 21st Century: Schenectady County (NYSERDA Region 5)

Mean changes	Likelihood	Description
Increase in mean temperature	Extremely likely	Increase by 1.5° to 3° F by the 2020s, 3° to 5.5° F by 2050, and 4° to 8° F by the 2080s
Increase in annual precipitation	Likely	By the 2050s, the county could experience up to a five percent increase in overall precipitation and between a five and ten percent increase by the 2080s. Much of the increase in precipitation is expected to fall during the winter months. Snowfall may increase in the next few decades due to intensified lake-effect snow (less ice coverage on the Great Lakes means more moisture in the air). However, by mid-century, lake-effect snow will decrease as temperatures below freezing become less frequent.
Extreme events		
Increase in extreme heat events	Very likely	Schenectady County can expect an increase in average annual high heat days and heat waves. Projections of future high heat days and heat waves show an increase of 18 to 75 annual days over 90° F, with two to nine heat waves occurring annually by late century for the county.
Increase in intense precipitation and flooding events	Likely	Despite a minimal increase in the annual precipitation, larger increases are projected in the frequency, intensity, and duration of extreme precipitation events. Extreme precipitation events are defined as days with more than one or two inches of rainfall. The number of days in the region with rainfall exceeding one inch is projected to increase from 10 (current conditions) to 8 to 12 days by the 2020s, 9 to 12 by the 2050s and 10 to 14 by the end of the century.
More common short-duration warm season droughts	More likely than not	By the end of the century, the number of droughts is likely to increase due to projected higher temperatures that will cause evaporation rates to surpass the projected increase in precipitation. However, there is a significant amount of uncertainty in this projection, as droughts are difficult to predict and are affected by a wide range of factors.

Benefits of Climate Action Planning

The primary objective of the Climate Action Planning Process is to create an engaging, inclusive, community-wide process that identifies and prioritizes goals, strategies, and initiatives that will conserve energy and reduce GHG emissions both from County operations and throughout the community. This Climate Action Plan takes advantage of common-sense approaches to improve air quality, lower energy costs, improve transportation and accessibility, reduce the community's carbon footprint and benefit Schenectady County for years to come. While Schenectady County cannot address climate change by itself, government policies and practices can dramatically reduce GHG emissions from a range of sources in the community.

CAP Process, Goals & GHG Reduction Targets

The County has formulated this plan with municipal partners, and community organizations, such as Cornell Cooperative Extension and the Schenectady County Soil & Water Conservation District.

Local Climate Action Planning Process

1. Determine leadership and CAP framework.
2. Develop communication and engagement strategy.
3. Complete and analyze baseline assessments
4. Identify goals and GHG reduction targets.
5. Identify existing and potential initiatives.
6. Prioritize initiatives.
7. Create a plan for implementing the chosen initiatives.
8. Establish metrics.
9. Write the CAP, adopt it, and make it publicly available.

Climate Action Plan Focus Areas

The Climate Action Plan identifies GHG emissions resulting from local government operations activities within Schenectady County. It addresses the major sources of emissions in focus areas and sets objectives and strategies that Schenectady County can implement to achieve greenhouse gas reductions. The focus areas that this plan addresses are as follows: land use & transportation, built environment, waste & recycling, and energy. These sectors were identified as the most significant sources of GHG emissions and therefore are the areas where reduction strategies have been identified.



Land Use & Transportation

- Mobile fuel use for passenger vehicles, trucks, railways, aviation, and marine transit.



Built Environment

- Energy used in residential, commercial, industrial, government buildings or facilities.



Waste & Recycling

- Non-energy greenhouse gas emissions from landfills and wastewater treatment plants.



Energy

- Indirect emissions at regional power plants caused by using electricity in the County

Outreach Efforts

This draft was made available for public comment and review from May 31st, 2023, to June 13th, 2023, by being posted on the County website. It then went to the County legislature for approval and to be formally adopted. The document will be made publicly available on the County sustainability website.

CAP Framework and Goals

The Schenectady County completed a greenhouse gas (GHG) emissions inventory to identify the largest sectors of emissions. Based on the GHG baseline analysis and input from community stakeholders, focus areas were developed to streamline and cross-coordinate actions between the local government and the community to reduce emissions across these sectors. The Schenectady County Climate Action Plan creates a framework for documenting and coordinating efforts by providing information about each initiatives' estimated implementation timeframe, costs, and potential leaders and partners. Each focus area includes a list of actions that will help to achieve the goals and reduction targets established during the climate action planning process.

GHG Reduction Targets

The Climate Action Plan is a critical component of a comprehensive approach to reducing Schenectady County emissions. Schenectady County is committed to achieving an overall GHG emissions reduction target of 40% percent by 2030. This reduction target can be met if each focus area implements the list of recommended actions to achieve the reduction target set for that sector. The goals and reduction targets for each of the focus areas are summarized in the following outline.

Transportation

- Goal #1: Increase the use of high-efficiency and electric vehicles and equipment used by the County
- Goal #2: Reduce miles driven by County employees by incentivizing public transportation
- Reduction Target: 20% from 2021 levels by 2030

Built Environment

- Goal #1: Increase the conversion rate of interior LED lights
- Goal #2: Utilize energy building audits to identify more energy efficiency opportunities
- Reduction Target: 20% from 2021 levels by 2030

Waste & Recycling

- Goal #1: Implement an organic waste reduction program
- Goal #2: Development guidelines for waste reduction at County special events
- Reduction Target: 20% from 2021 levels by 2030

Energy

- Goal #1: Identify excesses in renewable energy credits and sell them to county partners
- Goal #2: Identify opportunities for collaboration with the county and its municipal partners for renewable energy initiatives
- Reduction Target: 20% from 2021 levels by 2030

Current Climate Protection Initiatives

Climate change is not always separate from the other challenges faced by Schenectady County, such as budget constraints, water quality, infrastructure maintenance, or community health. Climate change is a result of the land use, transportation and energy use decisions that have evolved over generations and requires coordinated solutions.

Schenectady County has already begun to reduce greenhouse gas (GHG) emissions through a variety of plans, programs, policies, and actions. With these milestones completed and a Climate Action Plan to guide the way, the County is better positioned to implement initiatives to reduce energy use, costs and GHG emissions for local government operations. Schenectady County's sustainability efforts and leadership in addressing its contributions to climate change pre-date this plan by several decades. The Schenectady County Environmental Advisory Council (SCEAC) has led the community regarding environmental initiatives since 1971. At that time, SCEAC was established by the Schenectady County Legislature to foster unified action on issues affecting the preservation, development, and use of the natural and man-made features of the County. Over the past ten years, the Schenectady County government has taken many actions to reduce overall energy consumption throughout the community and within its own operations. Its efforts serve as an excellent example for the rest of the community. The Schenectady County Sustainability website promotes the County's actions and encourages residents and businesses to follow suit. Since 2004, the County has worked with the New York State Energy Research and Development Authority (NYSERDA) to take advantage of state resources to improve energy efficiency within County government operations and through the broader community. This includes the County's approach to development; projects utilizing assistance from the Metroplex Development Authority are strongly encouraged to work with NYSERDA to stabilize utility costs. In years past, County residents have also participated in programs such as:

- Energy Smart Communities
- Flexible Technical Assistance Program (FlexTech)

- Small Commercial Energy Audit Program
- The EmPower program for income-eligible renters and homeowners

The County has been improving the energy efficiency of its buildings as a low-cost, high return way of going green and saving taxpayer dollars. As early as 2004, the County had an energy performance audit done at the County Central Library. Through the NYSERDA Small Commercial Energy Audit Program, the County also had six of its buildings audited in 2009, including:

- Two Department of Engineering and Public Works (DEPW) Garages
- Airport Tower
- Glenville Library
- Niskayuna Library
- Rotterdam Library

The audits resulted in numerous energy conservation measure (ECM) recommendations. In 2011, the ECMs were implemented in the Airport Tower and DEPW Garages and have resulted in an annual energy savings of 806 MMBTU (million British Thermal Units), a GHG emissions reduction of 29.4 metric tons CO₂e, and an annual cost savings of more than \$15,000. With an investment of approximately \$88,000, the simple payback on these investments will take less than six years. The County is continually looking for cost-effective ways to improve its building efficiency and is taking the appropriate steps to achieve this goal. Most recently, the County conducted an energy audit of its Recreational Facility through the NYSERDA FlexTech program to identify opportunities for energy improvements. In addition to building efficiency, the County has pursued other means of reducing its energy consumption. The County also previously adopted

a series of resolutions, also known as the 7-Point Plan. The 7-Point Plan endorses New York State's goal of reducing government energy costs by 15 % by 2015. It outlined strategies to achieve this goal, including:

- The adoption of an ENERGY STAR Purchasing Program, requiring the County to purchase ENERGY STAR equipment whenever available and feasible.
- The adoption of a requirement that all new County buildings with an area with an area greater than five thousand square feet meet the Silver standard of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED). This requirement has resulted in the new County nursing home being designed to meet LEED Silver standards.
- The deployment and implementation of a County employee energy conservation and recycling policy

The Department of Engineering and Public Works (DEPW) has also begun to pursue improvements to its vehicle fleet that will increase fuel efficiency and help transition the fleet to cleaner burning fuels. For example, the DEPW is now using animal fat waste (a meat processing byproduct) as a biodegradable synthetic engine oil in place of traditional petroleum oil. The DEPW is also working to identify additional measures of improving energy performance and reducing fossil fuel use within its fleet operations. Starting in 2022, the Department has begun replacing the County's fleet to hybrid and electric vehicles.

Schenectady County has also taken steps to convert interior lights to LED in order to be more energy efficient. With over 800,000 square foot in either county owned or leased space, the completion of this project is no small feat. The County has currently converted around 60% of the space, with plans to complete the project in the near future.

The Schenectady County Conservation District also encourages county residents and employees to recycle yard waste at the compost and recycling facility. Recycling and composting are two simple ways to be Earth Wise and Soil Smart. When residents and employees recycle and compost, they keep natural and reusable materials out of landfills, rivers,

and streams, reduce dependence on new raw materials, save energy, and improve our soils.

As of 2023, the County has also completed the conversion of streetlights to LED. The County has 348 streetlights, and they accounted for 2% of GHG emissions in 2021, although that might percentage will change in future emissions inventories since the project was completed in 2023.

The County, through the Department of Economic Development and Metroplex Authority, also has a successful track record in remediating and redeveloping brownfield sites. The former Big N Plaza in Schenectady was redeveloped using New York State's Brownfield Program. The new building is LEEDs Gold certified, thus making it an example of a green building on a former brownfield site. The main Alco facility within the county was also remediated, triggering a \$600 million development project that included hotels, a casino, boat docks, walking trails and more. Across from SUNY Schenectady County Community College a former gas station was remediated and turned in a student housing complex. These sites, and many more are examples of the efforts Schenectady County has put in to remediate brownfield sites.

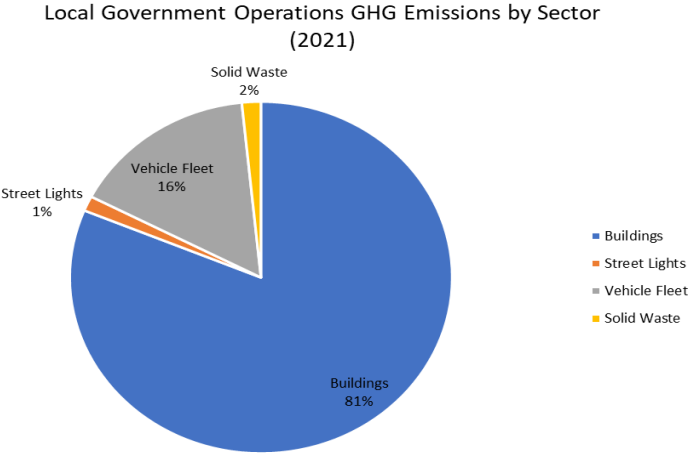
The County has also right-sized culverts. One was a bridge that was right sized due to the damage done to this culvert located on Duanesburg Churches Road in Duanesburg, NY during Hurricane Irene. The project was completed in 2013. The second culvert project was rightsized in 2019 and is located on Scotch Ridge Road in Schenectady, NY. The existing corrugated plate arch pipe was in poor condition and needed to be replaced and was replaced with a three-sided concrete arch culvert. The width of the culvert remained approximately the same due to steep embankments on the outlet of the pipe which could undermine at least one structure built adjacent to the embankment. To increase flow area, we increased the height of the structure which doubled the flow area of the culvert.

Local Government GHG Inventory Assessment

TABLE 2: LOCAL GOVERNMENT GHG INVENTORY

Identify & List GHG Emissions Sectors Below:	Enter the Unit of Measurement (Metric Tons of CO2)
Buildings	8,840
Street Lights	150
Vehicle Fleet	1,718
Solid Waste	175

FIGURE 4: LOCAL GOVERNMENT GHG INVENTORY



A local government operations GHG inventory was conducted for Schenectady County for the baseline year 2021. The local government GHG emissions inventory accounts for emissions associated with facilities, vehicles, and other processes that are owned and operated by Schenectady County. The identified sources of emissions related to government operations are listed in the green table and represented in the accompanying graph. The baseline year was selected as 2021 due to the availability of County operations energy data. This GHG inventory has helped to identify how the County can achieve reductions in energy consumption, costs, and GHG emissions. The results of the government inventory indicate the top sources of GHG emissions are from buildings and the vehicle fleet. For this reason, the strategies in this Climate Action Plan have been organized around energy, transportation, and waste. Wherever applicable, the strategies indicate potential greenhouse gas reductions and identify the sectors within the baseline inventory where reductions are likely to occur. The inventory was completed according to the accounting and reporting methodologies outlined in the Local Government Operations Protocol, Version 1.1 (LGOP). The inventory includes the County’s GHG emissions from three “scopes” as defined by the WRI/WBCSD1 GHG Protocol Corporate Standard and assesses emission of all six internationally recognized greenhouse gases – carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Scope 1: Direct GHG emissions from County vehicle fuel combustion and leaking refrigerants as well as from combustion of natural gas, propane, and heating oil in County buildings.

Scope 2: Indirect GHG emissions associated with purchased electricity. These emissions occur at an electric power plant that is not owned by the County but are the result of electricity consumption taking place within County government operations.

Scope 3: All other indirect GHG emissions (those associated with County government activities but do not occur in County-owned facilities or vehicles).

Figure 4 shows the GHG emissions resulting from the day-to-day operations of a local government. The Schenectady County buildings are the largest source of GHG emissions, comprising approximately 81% of 2021 of Schenectady County emissions. The emissions come from fossil fuels used in the vehicle fleet. Improving the efficiency of all sectors will significantly reduce the climate impact of county government operations.

Existing Renewable Energy Targets and Emissions Savings as a Result of Implementation

The existing renewable projects within the municipality are solar fields around the County, and the Schenectady County Solar Energy Consortium. The Schenectady County Solar Consortium grew out of the County-Wide Shared Services Property Tax Savings Plan required by the 2017-2018 New York State budget and was unanimously approved by the County and each of the eight county municipalities in August of 2017. The solar farms were built by DSD Renewables, formerly GE Solar, at no expense to County taxpayers and are projected to save taxpayers

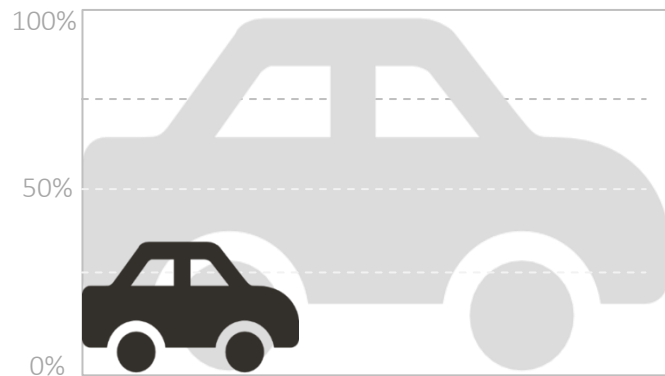
over \$44 million over the expected 25-year lifetime of the system. The system has a 266.2Mw of solar energy capacity, which can create 32Mw/h of energy. The final site, located at the landfill on Barhydt Road in Glenville, came online in July of 2021.

In addition, Schenectady County currently has numerous solar projects through Monolith Energy, now owned by Empire Solar, producing nearly 5mW of power annually, enough to power approximately sixty percent of all County facilities. Projects include solar farms on Hetcheltown Road in Glenville, Hillside Business Park in Niskayuna, and Burdeck Street and Wedgewood Heights Solar Farm in Rotterdam, along with roof top solar installations at the County Recreation Center and Ice Rink, highway garage, Rotterdam Branch Library, Phyllis Bornt Branch Library and Literacy Center, and the Schenectady County Business Center.

In 2021, Monolith solar sites generated 3.4 million kWh of electricity and the Schenectady County Solar Consortium generated 18.3 million kWh. The County received renewable energy credits through both of these projects.

Focus Area - Transportation

Besides emitting greenhouse gases, transportation fossil fuels cause air pollution and affect our health. Transportation accounts for 16% of Schenectady County's total GHG emissions. It should be noted that this does not include employee commute data because this data was not available at the time of this plan's formulation. Schenectady County's goals are to decrease vehicle miles traveled (VMT) by employees and increase access to electric vehicles or alternative fueling infrastructure. The implementation of the actions listed in the CAP will position Schenectady County to make substantial progress toward the overall emissions reduction target for transportation to achieve a 20% from 2021 levels reduction by 2030. Schenectady County's municipal fleet includes the vehicles used by the Department of Engineering and Public Works and other municipal vehicles, many of which are part of a shared pool. The GHG inventory reports illustrates that the County vehicle fleet emitted 1,718 metric tons of CO₂ emissions in 2021. This includes both traditional gasoline and conventional diesel. The calculation for this emission report involved converting gallons of gas and diesel to pounds of CO₂, and then pounds into metric tons of CO₂. At the time of the report, the County did not employ any electric or hybrid vehicles, but the County purchased 2 electric vehicles in 2022 and 4 hybrid vehicles in 2023, which will affect future emissions reports. As the vehicles age, the County needs to replace them and will aim to do this in the most fuel-efficient and cost-effective manner. Plans have been put forth that emphasize the purchase of EV and hybrid vehicles to bolster County efforts to reduce GHG emissions in this sector. Furthermore, Schenectady County recently partnered with the Capital District Transportation Authority (CDTA) to offer all county employees a free Navigator card for use on the entire CDTA bus route network. With this, employees are also eligible for free use of the CDPHP Cycle! Ride-Share bicycles. This action significantly reduced barrier to using public transportation. The County hopes to expand this program by rewarding employees for the use of public transit. The graphic on the following page represents actions that County hopes to take, but that require a considerable amount of planning and financial resources.



Focus Area - Transportation

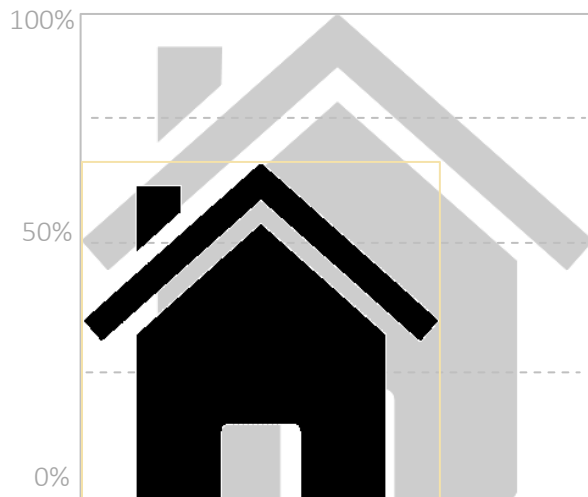
- 16% of Total GHG Emissions.
- Goal #1: Increase the use of high-efficiency and electric vehicles and equipment used by the County
- Goal #2: Reduce miles driven by County employees by further incentivizing public transportation
- Reduction Target: 20% from 2021 levels by 2030.

Focus Area - Transportation

Action Description	Timeframe	Funding	Leadership	Progress Metrics
Replace traditional vehicles with hybrid or electric vehicles	Long: 5+ Years	\$\$\$	Department of Engineering and Public Works	# of vehicles in fleet by type and size % of fleet replaced # of gallons of fuel consumed
Incentivize public transit options for government employee commutes/Reward employees for the use of public transit	Medium: 1-4 Years	\$\$	Department of Human Resources	# of applicants for public transit passes # of public transit commuters

Focus Area - Municipal Facilities

The Municipal Facilities category includes all electricity or energy used in government buildings or facilities. This category accounts for 81% of Schenectady County's total GHG emissions, with around 8,840 metric tons of CO2 being emitted. This includes both indirect and direct emissions and is the sector with the largest amount of emissions. Schenectady County's goals are to increase energy efficiency of government-owned buildings. The implementation of the actions listed in the CAP will position Schenectady County to make substantial progress toward the overall emissions reduction target for Municipal Facilities to achieve a 20% percent reduction by 2030. The two overarching goals for municipal facilities are to: increase the conversion rate of interior lights to LED, and to utilize building energy audits to identify more energy efficiency opportunities. The county currently owns and leases 814,111 square footage of property. Including leased space, the County has converted around 60% of the total square footage to LED lights, with a goal of substantially increasing this percentage in the near future. A building audit is a comprehensive analysis of a building's energy consumption to determine how energy is being used. Using the results from energy audits, the County can begin to identify best practices to maximize consumption, while reducing expenses and greenhouse gas emissions.



Focus Area - Municipal Facilities

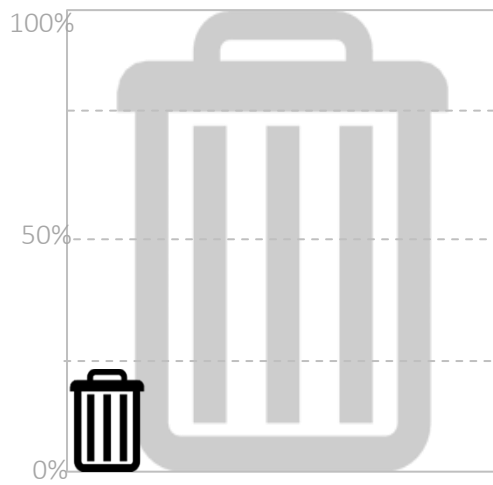
- 81% of Total GHG Emissions.
- Goal #1: Increase the conversion rate of interior lights to LED
- Goal #2: Utilize energy building audits to identify more energy efficiency opportunities
- Reduction Target: 20% from 2021 levels by 2030.

Focus Area - Municipal Facilities

Action Description	Timeframe	Funding	Leadership	Progress Metrics
Conduct energy audits of local government buildings	Short: <1 Year	\$\$	Department of Engineering and Public Works/Department of Facilities	# of buildings audited
Increase the conversion rate of interior lights to LED	Medium: 1-4 years	\$\$	Department of Engineering and Public Works	# of light fixtures replaced # of kWh of electricity consumed (annually)

Focus Area - Solid Waste

County waste includes all non-energy, greenhouse gas emissions from landfills and would normally include wastewater treatment plants, but the County does not operate any wastewater treatment plants. Waste accounts for 2% of Schenectady County's total GHG emissions. It should be noted that this metric does not include recycling data, but it is assumed that incorporating that data into this metric would shift the estimates. Schenectady County's goals are to reduce the amount of solid waste sent to landfills by composting and recycling and encourage county employees and residents to be environmentally conscious consumers. The implementation of the actions listed in the CAP will position Schenectady County to make substantial progress toward the overall emissions reduction target for reducing waste to achieve a 20% reduction from 2021 levels by 2030. Two ways in which the County strives to efficiently reduce GHG emissions from waste & recycling is to implement an organic waste reduction program and to develop guidelines for waste reduction at county special events. Organic waste, such as food waste, becomes a source of methane production when disposed of in landfills. By reducing the amount of organic waste that is placed in landfills that is recyclable, the County hopes to eliminate waste at the source. Mechanisms for this include educating employees and establishing waste reduction policies. Collecting food waste from government buildings would be a start to incorporating such a policy in the workplace. Furthermore, through a subsidiary organization, SCEAC, the County has created a Zero Waste Event Management Guide that encourages the County government to consider how events can be more sustainable.



Focus Area - Solid Waste

- 2% of Total GHG Emissions.
- Goal #1: Implement an organic waste reduction program
- Goal #2: Develop and implement guidelines for waste reduction at County special events
- Reduction Target: 20% from 2021 levels by 2030.

Focus Area - Solid Waste

Action Description	Timeframe	Funding	Leadership	Progress Metrics
Organic Waste Diversion Programs	Medium: 1-4 Years	\$\$	Department of Economic Development and Planning/Schenectady County Cornell Cooperative Extension	Organic Diversion Rate Number of Composting Bins distributed
Develop and implement guidelines for waste reduction and County special events	Short: <1 Year	\$	SCEAC	Recycling rate/Number of participants at County special events

Focus Area - Energy

One way to protect against volatility in energy costs is to supplement county facilities with on-site energy generation using renewable sources. A local government is well suited to reap the long-term benefits of renewable energy generation projects. Renewable energy resources can and have helped the County better control energy costs. There are several opportunities within Schenectady County for renewable energy generation. It is strongly recommended that the County formalize a clean energy program examining the potential for using renewable forms of energy such as solar energy. In 2021, monolith solar sites generated 3.4 million kWh of electricity and solar consortium generated 18.3 million kWh. It will be important, however, to decrease energy usage through implementation of energy conservation and efficiency improvements prior to renewable energy installations. It is recommended that Schenectady County use *ENERGY STAR Portfolio Manager* to track energy usage in all County facilities. *ENERGY STAR Portfolio Manager* is a free web-based program that can be used to monitor energy use, set goals, and measure progress for energy efficiency improvement projects over time, identify under-performing buildings to target for energy efficiency improvements, and track energy and cost savings over time. The County can also identify excesses in renewable energy credits, received through our partnership with Empire Solar, and sell them to county partners, thus providing the county with a profit to be used in furthering the County's efforts to become more sustainable and emphasize the use of renewable energy sources. Another goal is to identify opportunities for collaboration with the county and municipal partners for renewable energy initiatives. The implementation of the actions listed in the CAP will position Schenectady County to make substantial progress toward the overall emissions reduction target for renewable energy to achieve a 20% percent reduction below 2021 levels by 2030.

Focus Area: Energy

- Goal #1: Identify excesses in renewable energy credits and sell them to county partners
- Goal #2: Identify opportunities for collaboration with the county and its municipal partners for renewable energy initiatives
- Reduction Target: 20% from 2021 levels by 2030.

Focus Area - Energy

Action Description	Timeframe	Funding	Leadership	Progress Metrics
Purchase and sell renewable energy credits (RECs)	Medium: 1-4 Years	\$\$	Department of Finance	% of renewable energy credits purchased
Foster County and municipal government cooperation for renewable energy initiatives	Medium: 1-4 Years	\$\$\$	Department of Engineering and Public Works/County Manager's Office	# of partners that partake in joint renewable energy projects # of projects initiated

Initiative Prioritization

Evaluation Criteria

Now that climate actions have been identified, one challenge was deciding where to start. Which action is the most important? How do we start implementing this plan? To address this challenge, Schenectady County used a rating system to strategically determine which initiatives should be prioritized for implementation based on local goals and priorities. Evaluation criteria were established by Schenectady County and its stakeholders to provide a framework for estimating benefits and identifying priority initiatives.

Schenectady County's current evaluation criteria include the following:

-  Implementation Capacity
-  Estimated Return on Investment (ROI)
-  Increased Resilience
-  Reduction of Energy Consumption
-  Community Health and Quality of Life
-  Local Job Creation Potential
-  Environmental Quality
-  GHG Emissions Reduction Potential
-  Funding Feasibility
-  Fulfillment of CSC 10 Pledge Elements
-  Implementation Timeframe

Transportation Priorities



RANK	ACTION DESCRIPTION
1	Adopt a government vehicle fleet efficiency policy
1	Adopt an anti-idling policy for government vehicles
1	Right-size the local government fleet to increase fuel efficiency
1	Replace government vehicles with electric or hybrid vehicles
1	Subsidize or incentivize public transit options for government employee commutes
2	Implement a car-sharing program for local government staff
2	Adopt a policy allowing government employees to telecommute to reduce commuter trips
2	Replace government vehicles with alternative fuel vehicles
2	Engage government employees through a green pledge or competition
3	Incorporate green practices into HR trainings for government employees
3	Adopt green parking lot standards for transit-oriented developments (TOD) or municipal centers

Transportation Priorities

The above transportation priorities were selected for a number of reasons, and this section will briefly describe the justification for a few of the priorities.

A green fleet efficiency policy will help the County develop a schedule to phase out its older, less efficient vehicles and replace them with hybrid and alternative-fuel vehicles, including electric vehicles. The green fleet policy will ensure that fuel-efficient vehicles are purchased, alternative fuel vehicles considered where applicable. Heavy-duty and emergency vehicles will be excluded from this policy. The timeframe for this is two-fold; the policy could be adopted in the short-term, but it would take longer to phase out the vehicles and improve efficiency. There is a low cost of implementation. Phasing out older, inefficient vehicles on schedule and replacing them with more efficient vehicles does not require substantial additional funding. Vehicles with higher fuel economy do not necessarily cost more; however, alternative fueled-, hybrid- or electric vehicles often cost more. Incorporating more cleaner-burning fuels such as biodiesel into existing fuel use is relatively low cost. Investing in newer technology such as electric and fuel cell vehicles would require significant investment. The funding feasibility is medium-level: A variety of NYSERDA opportunities exist to cover some of the costs of fleet efficiency upgrades including NYSERDA's Bio-Fuel Station Initiative: Driving Energy Independence for the Empire State Program Opportunity Notice (PON) 2290 and its Electric Vehicle Supply equipment (EVSE) Demonstration Program. The federal government also offers funding opportunities for fleet improvements through its Clean Cities Program. Furthermore, National Grid offers refunds for installing electric vehicle infrastructure.

Schenectady County has an anti-idling policy that it currently enforces for public works vehicles. The County should increase the internal enforcement of NY anti-idling rules and expand the existing anti-idling policy to include all of its non-emergency fleet vehicles. The timeframe to expand and enforcement of an anti-idling policy is short, and the cost to implement is low. The enforcement of the policy could be incorporated into existing police patrolling. Officers would need to be informed of the new policy and how it is being enforced. The County may want to consider posting signs and other notices to inform drivers of the policy, especially in high-risk areas such as near schools. Due to the low cost of implementation, the funding feasibility is high. Given the ease of implementation, this is a level 1 priority, but it is understood that the GHG emissions reduction potential is low. If idling is reduced, some reduction in vehicle fuel use could occur, although it would be very small compared to total vehicle fuel use, and therefore, the emissions reduction impact would be minimal. The policy may also provide some low indirect emission reductions for the community mobile sector.

The remaining actions, including incentivizing the use of public transit for employees, implementing car-share programs, incorporating green practices in HR on-boarding procedures, and many more, all represent actions that the County will continue to prioritize as it works towards reducing GHG emissions.

Municipal Facilities Priorities



RANK	ACTION DESCRIPTION
1	Conduct energy audits of local government buildings
1	Upgrade interior lighting in government buildings to LED
2	Adopt a green building standard for local government buildings/facilities
2	Install water efficient fixtures in government buildings
2	Install an Energy Management System (EMS) in more government buildings
3	Reduce number of outdoor lighting fixtures
3	Upgrade outdoor lighting (non-streetlight/traffic signal) to more efficient and/or solar

Municipal Facilities Priorities

The more than 30 buildings managed by Schenectady County, through its Facilities Department, are a major source of emissions and represent a tremendous opportunity to advance sustainability. The median age of commercial buildings in the United States is 32 years, and half of all commercial buildings were constructed before 1980. Making up much of our built environment, these older buildings have great potential to save money, energy, and water through efficiency upgrades.

Energy audits are a tool for identifying energy efficiency potential and measures. An energy audit is an important tool for finding such potentials for energy efficiency measures and for assessing the financial viability of County buildings. A simple level just includes a brief site inspection as well as assessing the broad energy input and output of a system – this identifies low-cost energy saving opportunities. Medium level audits include an in-depth analysis of energy costs, energy usage and system characteristics along with on-site energy demand measurements to identify energy efficiency measures which are more capital intensive and need to be aligned with the designated financial budget plan. The most sophisticated level includes an additional continuous monitoring of system data and process characteristics. The usage of energy building audits can be greatly beneficial to Schenectady County, as they will help the County identify areas of improvement as they relate to energy efficiency, thus reducing greenhouse gas emissions and ensuring that financially responsible practices are implemented. The timeline for this action is relatively short but does require a significant amount of funding to not only employ a private company to perform the audits, but also make the recommended changes to the buildings.

Upgrading interior light fixtures to LED bulbs represent a good investment in Schenectady County, not only financially but environmentally as well. LEDs do not require replacements as often as HID lamps, due to their long service life. LED lights also possess numerous safety advantages; they are normally lighter than older fixtures, making them safer to handle. They also operate at lower temperatures and are less likely to cause a burn if touched by accident. The County has upgraded about 60% of the square footage, meaning that progress has been made, but there are still significant measures that need to be made to complete this initiative. The timeline for completion is relatively short, but does require coordination with the County's utility company, National Grid.

The remaining actions, including adopting green building standards, installing water efficient fixtures and many more represent actions that the County will continue to prioritize.

Waste & Recycling Priorities



RANK	ACTION DESCRIPTION
1	Adopt a waste management strategy for government hosted special events
1	Provide recycling bins next to all trash receptacles in local government buildings
1	Provide food scraps collection bins in local government buildings
1	Implement an organic waste reduction program
2	Conduct a local government waste audit and track diversion rate over time
2	Adopt an Environmentally Preferable Purchasing Policy
2	Incorporate waste handling provisions in standard specs and government contracts
2	Engage employees through a green pledge or competition
2	Incorporate green recycling practices into HR trainings for government employees
3	Adopt a Zero Waste Initiative Policy where everything is reused, and all materials are viewed as resources
3	Participate in the EPA WasteWise Program

Waste & Recycling Priorities

There are a variety of strategies for reducing waste at County special events. Best practices on how to reduce waste and encourage reuse during events will be developed and the identified guidelines will be reinforced through on-going outreach and education. One example to encourage reuse is having reusable tableware versus single use items at County events. Another example to reduce waste is to staff zero waste stations with volunteers that help visitors discern what can be recycled or composted versus what qualifies as trash. The timeline for this is mid-term, 1-4 years due to the coordination efforts needed with County vendors and educating many volunteers on the proper way to dispose of food, so that they can inform visitors of County-hosted events.

Separating food and organics from the waste stream will have immediate and significant impact on the reduction of GHG emissions. County facilities serve food and therefore generate large amounts of food waste. The NYS DEC estimates that food scraps represent nearly 18 percent of the municipal solid waste generated each year in New York. The County could use its own facilities such as the Glendale Nursing Home and County Jail as a pilot to expand composting at the County Farm to include pre-consumer food waste. The US Composting Council published a report in 2009 titled Best Management Practices (BPMs) for Incorporating Food Residuals into Existing Yard Waste Composting Operations that may be helpful for the County to pursue this strategy. This is a longer-term strategy because it would require careful preparation and planning to expand the County Farm composting capabilities. It is also recommended that Cornell Cooperative Extension partners in these efforts as they have initiated food composting drop-off programs for County residents.

The County has an established purchasing policy which requires the purchase of ENERGY STAR rated appliances. Exploring an environmentally preferable purchasing (EPP) program can further reduce the County's direct impacts on solid waste generation and GHG emissions. The County should explore Environmentally Preferable Purchasing strategies by putting together an interdepartmental team that includes Information Technology, Purchasing, Facilities and other impacted departments. EPP strategies would consider things such as purchasing recycled materials, multi-function devices, printers which allow for double-sided printing and products that are more durable and come with less packaging. This strategy could be implemented in the short term with the creation of the interdepartmental team. The policy would be developed by this team and could be implemented within two years. There is minimal cost to create the team or implement the policy; however, staff time would be required. Some environmentally preferable products could have a minor cost premium, but they may also provide savings through waste and energy reduction. The funding feasibility is high due to the low cost of implementing an environmentally preferable purchasing program.

Energy Priorities



RANK	ACTION DESCRIPTION
1	Purchase and sell excess renewable energy credits
1	Foster collaboration with the County and its municipal partners for renewable energy initiatives
2	Purchase programmable Wi-Fi enabled thermostats
2	Implement computer maintenance monitoring systems
2	Ensure that capital project requests integrate energy efficiency
3	Perform facility energy efficiency improvements to County buildings
3	Encourage behavioral changes that decrease the demand for energy in County facilities

Energy Priorities

The County currently purchases Renewable Energy Credits (RECs). RECs are a method for allowing for a market transaction of the renewable attribute of energy generated by a renewable project. The County prioritizes RECs that incentivize additional renewable energy in New York State. Since the County receives renewable energy credits that sustain nearly 100% of their energy bills, the County is nearing the point to where they will have an excess number of credits, which cannot be transferred into monetary value. By selling these credits to County partners, the County would solve the problem of having too many credits, and help the partners by reducing their energy costs, which promotes the benefits of investing in renewable energy infrastructures.

The county will also seek to foster collaboration with community partners to enhance renewable energy initiatives. Incorporating municipal partners in efforts to establish a robust renewable energy presence in Schenectady County will pave the way for not only reducing GHG emissions across the County, but further partnerships on other issues. Renewable energy initiatives benefit the environment and taxpayers.

The purchase of programmable thermostats would allow for facility staff to control the temperatures of buildings during the day and evening, preventing energy loss from fluctuating temperatures. The installation of these thermostats can result in an estimated savings of ten percent on heating and cooling costs because they allow temperatures to be set for specific times, which are adjusted during periods of occupancy or non-occupancy. Schenectady County has installed HVAC digital control systems in all its major facilities, including the Central Library, the Correctional Facility, the current Glendale Home, the County Office Building, and the Courthouse. Programmable Wi-Fi enabled thermostats will allow Schenectady County to identify where and when any problems exist. In effect, the Wi-Fi component streamlines the programming and control of the thermostats and ensures that the thermostat is meeting its full potential in operating efficiency. The County should survey all buildings and identify where programmable Wi-Fi enabled thermostats could feasibly replace existing programmable thermostats. The building survey and the installation of any new Wi-Fi enabled thermostats could be completed within two years, meaning that the timeline is fairly short. Wi-Fi enabled thermostats are available to the public for \$75 to \$150 from standard retailers; it is anticipated that such equipment could be purchased under a New York State contract at a reduced cost for the County. The purchase and installation of Wi-Fi enabled thermostats could be funded through the budget line item of Building Repairs and Materials. Given the low cost to implement, the County may be able to absorb this cost within this line item without additional funding. The County would also have to invest staff time to conduct the building survey.

Moving Forward

Climate change mitigation may be a challenge, but it is also an opportunity to take action and make better energy choices that will make Schenectady County more stable and resilient in the future. Whether you are a local official, homeowner or renter, business owner or educational institution, this Climate Action Plan is a resource to all community stakeholders and offers the framework and resources needed to implement actions that will help the Schenectady County achieve the goals established for our community.

The Schenectady County Climate Action Plan for Government Operations will guide Schenectady County's GHG emissions reduction from its internal operations. The CAP outlines a course of action to reduce GHG emissions in the short term (2030) and lays a foundation for achieving long term GHG emission reduction goals by 2050. Schenectady County's Climate Action Plan has set an ambitious goal to achieve 40% percent reduction of greenhouse gas emissions by 2030, and an 85% reduction by 2050. Using the greenhouse gas emission inventory as a foundation, this Climate Action Plan has outlined a collection of measures and policies that reduce GHG emissions. To maximize success in implementing this plan, Schenectady County has included detailed information about the leadership and resources needed to act and ranked initiatives according to local priorities. With the Climate Action Plan as a guide, Schenectady County can take effective action in climate change mitigation as we implement municipal and community-wide programs, projects, and policies. The CAP will be most successful if it is fully integrated into the culture of the County through employee engagement and County leadership. It is important that each department takes steps to integrate applicable action items and goals into their operations to meet the reduction targets for the outlined years.

To remain relevant, the CAP should be viewed as a living document and will be revisited and updated regularly to address the changing environment. The County will regularly monitor the impact of the GHG emissions reduction measures being implemented and document changes every five (5) years in an updated GHG inventory. Completion of the actions recommended in the CAP will be overseen by the County Manager's office and the Sustainability Coordinator. To help ensure that the CAP effort persists, the Schenectady County Legislature will be requested to adopt this plan. To effectively engage stakeholders, the final CAP will be posted on the County website to ensure that it is available for public access or download. It is integral to the efficacy of this plan to update progress on initiatives annually. Departments learn from each other department's successes and from the obstacles they faced. Review of CAP progress will occur annually. The annual CAP review will include an updated energy usage report, and a full update to the GHG inventory (including baseline adjustments) every five years. The report will also include progress, changes, additions, and omissions to the action items based on changing technology and/or environment. A summary of the annual review will be available to all employees on the County website. Ideas and suggestions for recommendations for actionable items can be made in confidence to the Sustainability Coordinator. The annual update reports will also be shared with the public on the County website.