



Monroe County Action Plan Phase II: Community-Wide

Preliminary Draft: May 2024



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COUNTY EXECUTIVE

Acknowledgments

Many individuals contributed time and effort to help develop Phase II of the Monroe County Climate Action Plan. Their commitment and hard work are greatly appreciated.



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Indigenous Land Acknowledgment

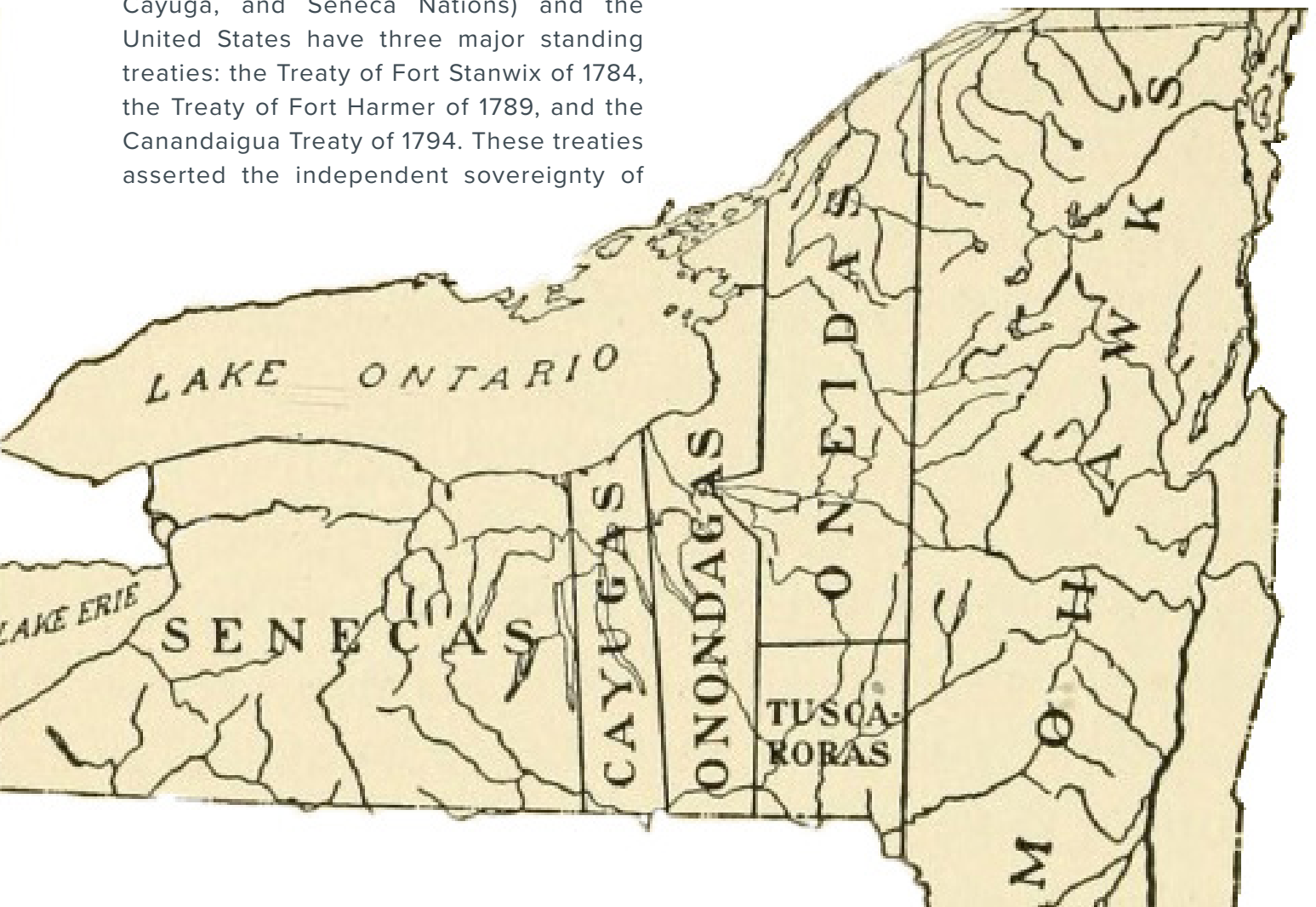
The overarching goal of this Climate Action Planning process is to develop a strategic vision and actions for improving the County’s relationship with the land. As such, it is important to recognize the legacy of our land and those who first resided here. Our community is located on the homelands of Ho-de-no-sau-nee-ga (Haudenosaunee) and Onöndowa’ga (Seneca) people. We acknowledge that this land has been taken from the Haudenosaunee and Seneca people through a history of unjust land acquisition and unfair treatment during the time of colonization.

The Haudenosaunee Confederacy (which includes the Onondaga, Mohawk, Oneida, Cayuga, and Seneca Nations) and the United States have three major standing treaties: the Treaty of Fort Stanwix of 1784, the Treaty of Fort Harmer of 1789, and the Canandaigua Treaty of 1794. These treaties asserted the independent sovereignty of

the Haudenosaunee Nation and United States, established territorial boundaries and means of compensation, and called for a peaceful and friendly relationship between both entities.

The Haudenosaunee and Seneca people are an integral part of our community who continue to contribute to our community’s history, culture, and growth. Through this acknowledgment, Monroe County recognizes, honors, and respects the Haudenosaunee Confederacy and Seneca Nation as the traditional stewards of the lands and waters on which we live - and strive to learn from these indigenous communities to foster a more integrated and sustainable relationship with their indigenous lands.

Image Source: Oneida Nation



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Part 1

INTRO TO PHASE II. COMMUNITY-WIDE CLIMATE ACTION

Phase I & Phase II

In 2022, Monroe County completed the Phase I Climate Action Plan centered on Government Operations. The purpose of this phase was to identify and prioritize goals, strategies and initiatives that will reduce greenhouse gas (GHG) emissions from County-owned sites, facilities, and operations. Through these findings, the county developed a strategic action plan for climate change adaptation and mitigation at the county-government level.

In Phase II of the Climate Action Plan, Monroe County continues to work toward creating resilient and sustainable communities across the region. Phase II is community-wide, broadening the scope of the Plan to consider a variety of GHG emission sources and activities, encapsulating the impacts of how we all live, work, and travel throughout the county.

This Community-Wide Climate Action Plan is not regulatory in nature. Rather, it serves as a long-range planning guide for Monroe County and its partners to achieve our goal for an **80% reduction in GHG emissions county-wide by 2050.**

What is a Community-Wide CAP?

Phase II of the Monroe County Climate Action Plan (CAP) focuses on reducing GHG emissions from the County and all its stakeholders, including residential, commercial, industrial, municipal, and other energy-dependent activities in Monroe County that fall outside of the county’s direct control. Phase II will provide a more thorough understanding of the whole scope of the county’s emissions-producing infrastructure and activities, including land use and operations by the private sector. Both Phases I and II are vital planning efforts necessary to create a comprehensive roadmap to reduce our region’s contribution to climate change, providing a more sustainable future.

The purpose of the Phase II CAP is to:

- Develop a comprehensive community-wide GHG emissions inventory and baseline;
- Identify an overall GHG emission reduction goal;
- Outline actionable strategies for reducing GHG emissions;
- Identify key resources, case studies, and partners to support implementation; and
- Highlight and support existing climate action efforts already underway within the County.

Phase I: Monroe County Government Operations Climate Action Plan

Monroe County firmly committed to a more resilient and sustainable future for our community and completed Phase I of the Climate Action Plan in 2022. GHG emissions from operations, infrastructure, and facilities owned by Monroe County were measured. The county created a strategic action plan for the county government’s response to climate change and GHG reduction. The primary goal of the Monroe County CAP - Phase I Government Operations is to reduce GHG from sites, facilities, and operations that are managed by the county. This is an important first step toward developing a more resilient and sustainable Monroe County.

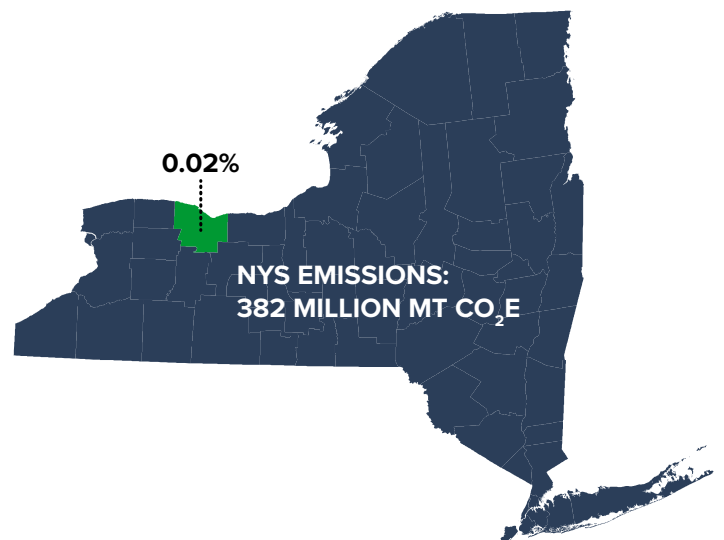
Phase I Purpose Statement:

Identify a strategy for Monroe County to decrease GHG emissions attributed to Government Operations by 80% below the 2019 baseline by the year 2050.

■ Purpose of Phase II

In 2022, Monroe County completed the Phase I Climate Action Plan. Monroe County developed this plan, in partnership with the community, to act as a guide to inform decision-making at the county level. The CAP plays an educational and guiding role, encouraging climate action by local stakeholders, residents, and municipalities. By adopting this Plan, the county is not imposing regulatory authority over municipalities, businesses, and residents within its borders. Through this plan, the county hopes to foster collective action

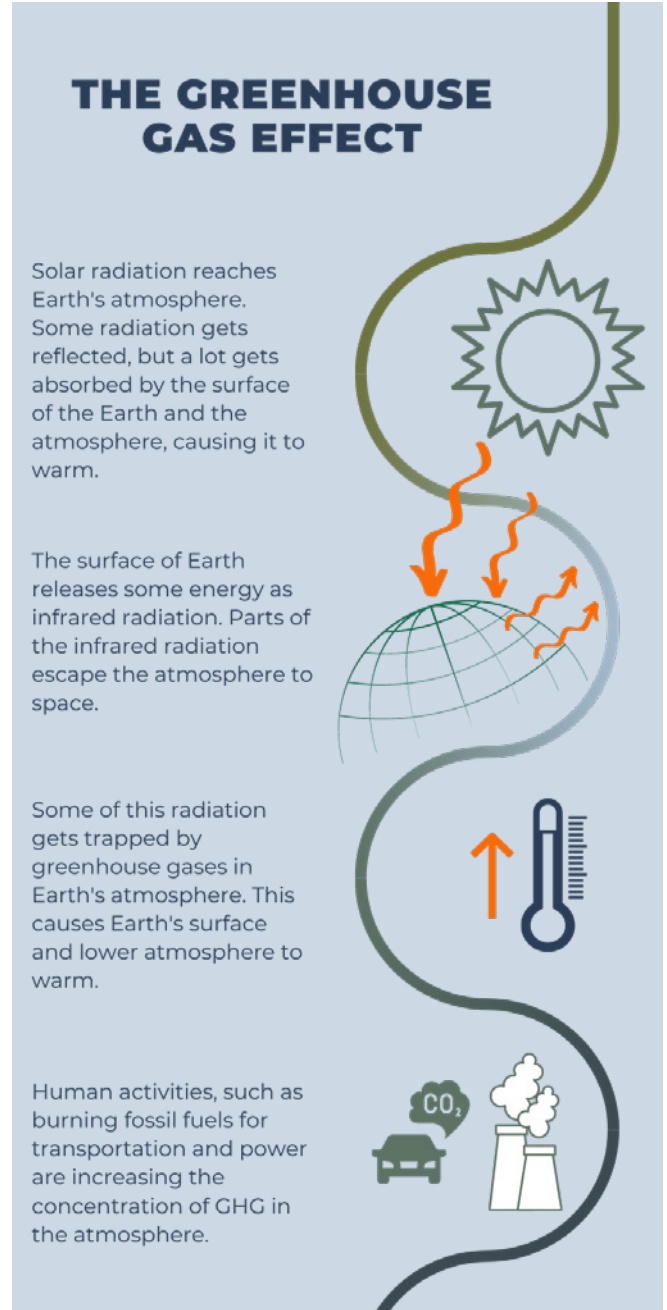
through inspiration and collaboration. Voluntary participation from all community stakeholders is encouraged to implement this plan.



Why Do We Need a Community-Wide Plan?

Climate change in Monroe County is real. Annual temperatures are projected to increase 4.3-5.4 degrees Fahrenheit by the 2050s in Monroe County. By the 2080s, the annual average temperature could rise by as much as 10.7 degrees F. Projected average precipitation is predicted to exceed 50 inches of precipitation annually by the 2080s. Extreme precipitation can create greater flood risks and increased shoreline erosion¹, as seen on Lake Ontario in recent years. A community-wide Climate Action Plan creates a blueprint for communities to take action to reduce GHG emissions and climate impacts.

Monroe County, similar to other areas of New York State, is seeing effects such as increased precipitation, more frequent and intense storm events, and more extreme temperatures. These changing weather patterns can negatively impact the regional economy, agriculture, food supply chains, and even quality of life. The CAP will serve as framework to help Monroe County, municipalities, residents, and businesses implement strategies to help reduce the GHG emissions throughout the county.



Projections specifically for Monroe County were developed by the New York Climate Change Science Clearinghouse (NYCCSC) and can be seen in more detail in Phase I of the CAP. Phase I of the CAP can be accessed at:

www.monroecountyclimateaction.com/about-phase-i

Sources:
 (1) Horton, R., D. Bader, C. Rosenzweig, A. DeGaetano, and W.Solecki. 2014. Climate Change in New York State: Updating the 2011 ClimAID Climate Risk Information. New York State Energy Research and Development Authority (NYSERDA), Albany, New York.

Phase II Focus Areas

The purpose of the Phase II CAP is to provide an inventory of current GHG emissions generated from community-wide activity specific to Monroe County and establish a potential framework to reduce such emissions over time. To support the achievement of this goal, a series of recommended actions have been compiled across six focus areas summarized below.

These focus areas help frame the development of the goals, actions, and strategies developed later in this CAP. Additional information about the six focus areas is presented below.

ENERGY USE & CONSUMPTION



The type and amount of energy we use has a direct impact on climate change because of the greenhouse gas emissions they each produce. The reduction and/or conversion of our energy sources and consumption from gas, oil, and coal, to more sustainable alternatives including solar, wind, geothermal, and electric will reduce our climate impacts.

BUILDINGS & HOUSING



The built environment includes commercial, industrial, and residential structures where we work and live. Our building stock varies between rural, suburban, and urbanized areas, in terms of appearance, footprint, and density. Building type, construction methods, operations, and daily usage impact our surrounding environment, energy consumption, and microclimates.

TRANSPORTATION



Driving, public transit, bicycling, and walking networks connect us to our homes, our jobs, services, goods, and our environment. These modes of transportation, the infrastructure needed to support them, and the travel distance between our destinations is directly related to the magnitude of the carbon footprint and greenhouse gas emissions we produce.

SUSTAINABLE MATERIALS MANAGEMENT



Products have a life cycle that consists of production, transportation, use and ultimately disposal. The impacts associated with each phase of this system may vary from the amount of resources used to produce it, the amount of greenhouse gas emissions that we create during its production, transportation and use, and the amount of waste, and the contribution to local landfills created upon disposal. Activities that lessen our impact include reducing, reusing, recycling, and composting materials.

LAND & WATER RESOURCES



Our County has a wealth of open space and water resources including parks, streams, rivers, canals, and Lake Ontario. We are part of the Great Lakes bio-region, so protecting water resources and minimizing flooding impacts from climate change will be critical. There is a direct link between water quality and the Great Lakes water system. Our water resources, open spaces, and trees serve to help regulate stormwater, wastewater, and GHG emissions, but are vulnerable to impacts from development and human intervention.



Our quality of life has always been linked to nurturing existing partnerships and fostering new ones. Our success in reducing our individual and collective climate impacts will be directly related to understanding what initiatives have taken place and what opportunities exist for social, educational, and economic sectors by connecting individual networks to one another.

Focus Area Priorities

Members of the public had the opportunity to prioritize the six focus areas at Public Workshop #2 and through an online survey which was advertised via handouts at various pop-up events. A table ranking the focus areas from highest priority to lowest priority, based on community feedback, can be found below.

Table 1. Matrix of Votes for Each Focus Area

Rank	Transportation	Buildings & Housing	Energy Use & Consumption	Land & Water Resources	Partnerships, Education & Economy	Sustainable Materials Management
1	34%	9%	23%	20%	9%	6%
2	17%	34%	9%	11%	11%	17%
3	11%	14%	29%	26%	9%	11%
4	20%	9%	23%	23%	17%	9%
5	11%	17%	14%	17%	26%	14%
6	6%	17%	3%	3%	29%	43%

Highest Priority



Lowest Priority

34% of respondents believe that Transportation is the most important issue, and 34% also believe that Buildings & Housing is the second most important issue. Inversely, 43% of all respondents believe that Sustainable Materials Management is the lowest priority issue

What are the Benefits of Taking Action?

In addition to reducing GHG emissions, the strategies identified in this plan can produce a number of additional benefits. These include:

- **Cost Savings:** Encouraging energy efficiency, water efficiency, and adoption of renewable energy will result in lower utility bills for residents and businesses. Promoting use of alternative transportation such as bicycling, walking, public transit, ride-sharing, and electric vehicles will lead to cost savings compared to fueling and maintaining a gasoline or diesel vehicle, and costs of parking.
- **Equity:** The initiatives in this plan will promote cost savings that will help all families, especially low-income families, lower their energy bills. It will also encourage the engagement and collaboration of a wide range of stakeholders so all communities are represented.
- **Preservation:** This plan recommends using and redeveloping existing buildings to not only preserve any historic assets, but also encourage sustainable development and reduce the pressure to preserve open space and agricultural lands. Adaptive reuse and revitalization are green building strategies that can reduce GHG emissions related to demolition and construction.
- **Economic Development:** This plan will include strategies to foster local economic development. For example, investing in the renewable energy sector can spur business and job growth during design, manufacture, and installation of measures. Monroe County is already committed to supporting these initiatives through the Monroe County Legislature's approval to fund up to \$1,000,000 annually toward projects listed in the Phase I CAP.
- **Public Health:** Reducing GHG emissions also reduces other air pollutants, thus improving air quality. Additionally, increased opportunities for active lifestyles can promote physical activity and improved health.
- **Ecosystem Protection:** Initiatives in this plan will protect and conserve our ecosystem, open spaces, agricultural lands, and other natural areas. For example, maintenance/restoration of wetlands, preservation of the Lake Ontario shoreline, and protection of water quality.
- **Mobility and Connection:** Initiatives in this plan will help to increase mobility by encouraging the installation of bike infrastructure, high density development that promotes walkability, as well as advocate for improved public transit accessibility.
- **Raise Awareness:** This plan will outline numerous opportunities for community members and other organizations to connect on common goals. This will increase awareness on the benefits of

GHG emission reduction and provide access to tools and resources to allow residents, businesses, and organizations to work towards GHG emission reduction.

■ **Planning Process**

Phase II of the CAP was completed under the direction of a CAP Advisory Committee, stakeholder engagement, and feedback from the community. During the committee’s monthly meetings, the project team presented updates on the Plan’s progress and facilitated discussions around critical data points, goals, and strategy components.

The project team facilitated numerous stakeholder conversations, centered around the six focus areas developed earlier in the planning process. Stakeholder conversations ranged from one-on-one conversations with an individual or agency, to focus-area-specific group conversations. The stakeholder discussions helped shape the CAP and prioritize actions and strategies for plan implementation.

Additionally, the project team facilitated three rounds of community engagement. The first round consisted of two virtual workshop sessions, and the launch of the Ideas Wall, which provided members of the public with the opportunity to directly comment on and discuss the focus areas.

The next round of public meetings introduced the GHG emissions report to the public and launched an online survey that received over 600 responses. The final round of public meetings unveiled the

draft CAP to the community, providing the opportunity for public comment.

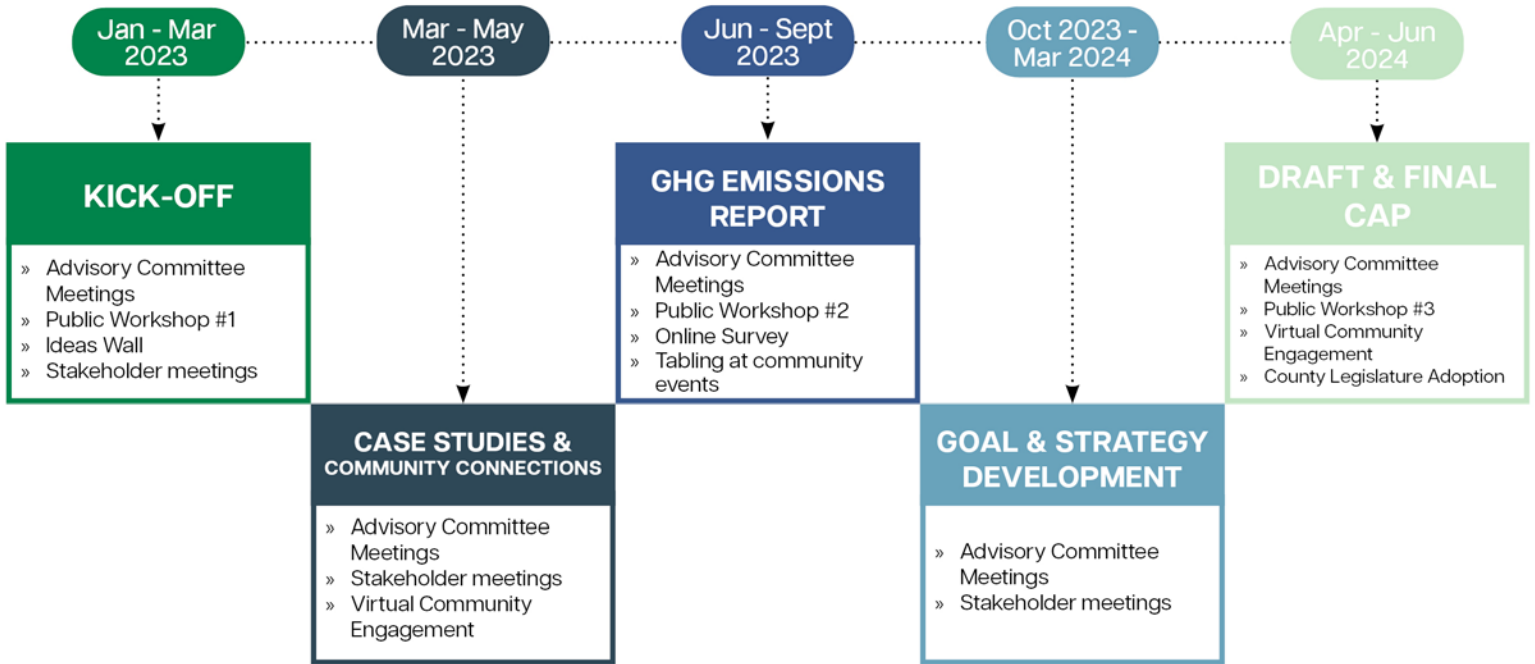
■ **Planning Framework**

The climate action planning process includes the following:

- 1. Develop GHG Inventory Baseline.**
- 2. Identify GHG reduction goals.**
- 3. Review management practices & case studies.**
- 4. Identify / analyze strategies & actions.**
- 5. Prioritize strategies & actions.**

■ **Timeline**

A timeline of the planning process for Phase II of the Community-Wide Monroe County CAP is presented on the following page. The timeline includes public workshops, stakeholder meetings, and advisory committee meetings.



Overview of Public Outreach

CAP Advisory Committee

Phase II of the Climate Action Plan was carried out with guidance from a CAP Advisory Committee. This committee comprised citizens, local students, Monroe County staff, and members of the County Legislature. The committee assisted with at public outreach events, shared and gathered information from their collective networks, and helped find events for the project team to attend to provide meaningful public outreach.

Project Website

The project website,

www.monroecountyclimateaction.com

was created at the start of Phase II of the CAP, and is available for members of the public to visit 24/7. The website details Phase I of the CAP, and provides crucial details and documents about Phase II. The website is kept up-to-date with the latest public participation opportunities (virtual and in-person), engagement tools such as surveys and the Ideas Wall, and important information about local, regional, and national climate action resources.

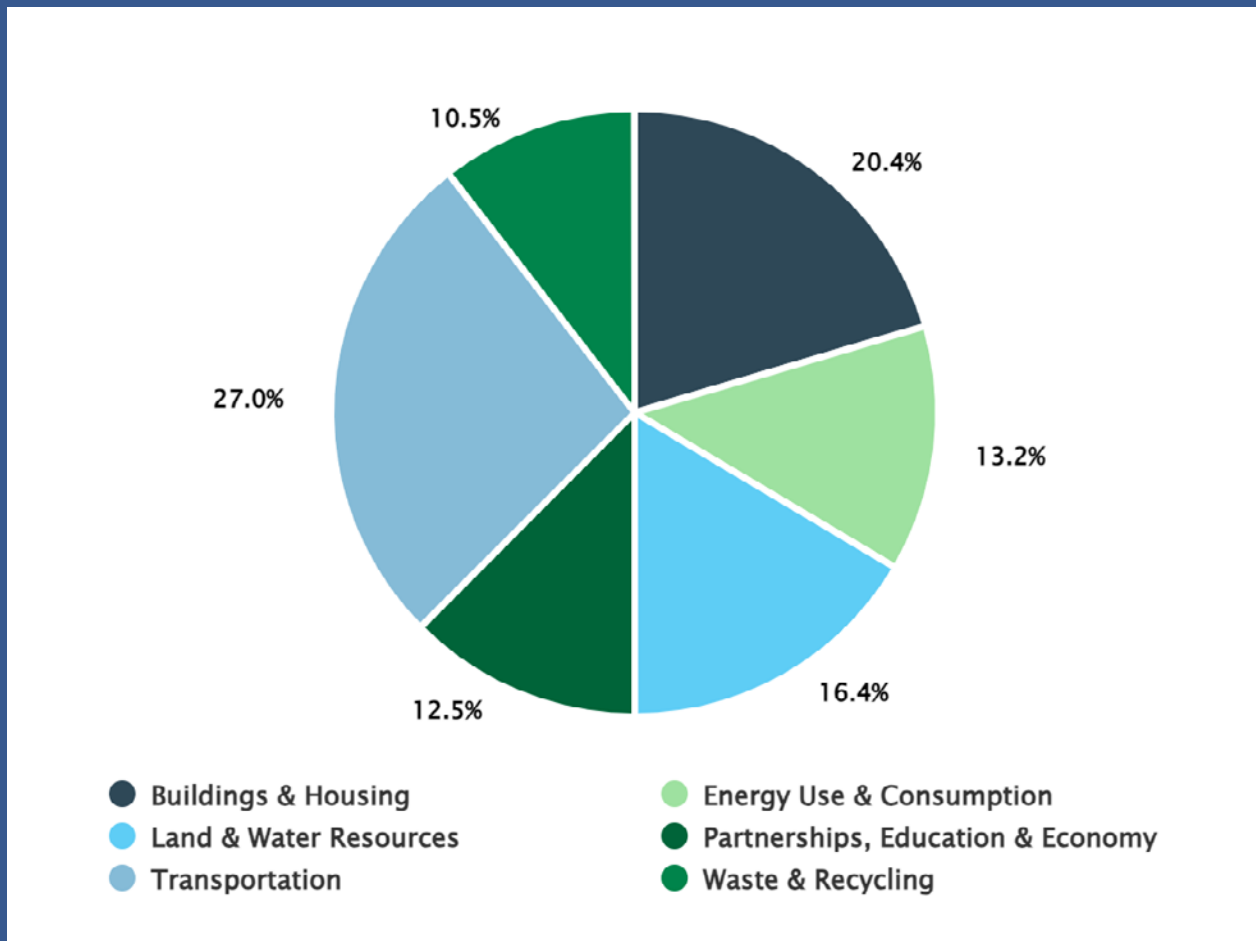
Public Workshop #1 - March 15, 2023

The first public workshop was held virtually on March 15, 2023, offering two opportunities for the public to participate. The workshop helped kick-off the Community-Wide CAP. Attendees learned about the importance of addressing climate change, what happened during Phase I of the CAP, and the next steps for Phase II. At the Workshop, an online discussion board, available online via Social Pinpoint, called an Ideas Wall, was launched and all were invited to participate. Public workshop #1 had over 100 participants.

Ideas Wall

The purpose of the Ideas Wall was to collect public input and facilitate discussion on the key issues, opportunities, and priorities for the Community-Wide CAP focus areas. Participants were invited write down their thoughts and respond to each other’s ideas on a virtual forum, with the option to comment on any of the six focus areas. The Ideas Wall was open for comment from May to August of 2024.

The Ideas Wall received over 220 comments across all six focus areas, 1889 page visits, and 740 unique visitors. The transportation focus area received the most comments, while the sustainable materials management focus area (formerly Waste & Recycling) received the least amount of comments. A full breakdown of comments by focus area is shown in the chart below.



Public Workshop #2 - July 26, 2023

The purpose of Public Workshop #2 was to introduce county-wide GHG emission snapshot and foster discussion and collect feedback on potential GHG reduction goals and strategies. The workshop included an online session and an in-person open house. Attendees had the opportunity to prioritize the six focus areas (a table of the rankings can be found on Page x).

Goals Survey

At the conclusion of Public Workshop #2, a Goals and Strategies online survey was launched. The survey allowed members of the public to review and prioritize preliminary goal statements and actions for each of the Plan's six focus areas. The survey was open from July 26, 2023 to November 12, 2023 and received 652 responses.

Pop-Ups

Throughout the planning process of Phase II of the CAP, various pop-ups were held. Members of the project team attended various festivals, events, and meetings to help spread the word about the CAP and get feedback from members of the community about climate action priorities. Pop-up events included the Corn Hill Arts Festival, Irondequoit Farmers Market, Westside Farmers Market, Seneca Park Zoo Brew, etc.

Stakeholders

Stakeholders have played a critical role in the development of the Community-Wide CAP. The project team met with a variety of stakeholders from different sectors between February and March 2024, to get targeted feedback on goals, actions and strategies to help reduce GHG emissions throughout the county. Stakeholders had multiple opportunities to engage with the project team virtually and in-person.



Attendees at Public Workshop #2



Part 2

EXISTING CLIMATE CONDITIONS & PROJECTIONS

■ The Science of Climate Change

Climate change, a persistent and growing force on our planet, is one of the most pressing issues our society is facing and will continue to face well into the future. The Intergovernmental Panel on Climate Change (IPCC) has stated that there is a greater than 95% chance that the rising global average temperatures are primarily due to human activities, driven by growing levels of greenhouse gases (GHGs) in the atmosphere¹. Fossil-fuel combusting, urban sprawl / rapid development of open space, and other human activities contribute to these ever-growing GHG levels. It's estimated that GHG levels are 40 percent higher than they were during the preindustrial era, and emissions continue to accelerate.

Some greenhouse gases can stay in the atmosphere for centuries or millennia². These GHGs trap heat, leading to a rise in temperatures; the impacts of which can already be seen on the environment across the globe. This includes rapidly melting icecaps leading to rising sea levels, increased flooding, stronger and more frequent extreme weather events, and so on². These impacts have devastating implications for all facets of our natural environment and society

The average temperature in Rochester, NY has increased by 0.32° F between 1901 – 2012, and Rochester has experienced 2.32 fewer days below 32° F per decade. Based

on the baseline average air temperature (1971-2000), the average temperature for Western New York is predicted to rise by 5.7-9.6° F in the 2080s based on 25th - 75th percentile projections from NYSERDA³.

■ ClimAID Projections

Climate change brings increased risks of more frequent and intense events related to heat waves, heavy rainfall, flooding, supply chain disruptions, sea level rise, impacts on ecosystems and quality of life. The Integrated Assessment for Effective Climate Change Adaptation in New York State (ClimAID) aims to provide information on the state's climate vulnerability to inform climate action strategies and encourage further research.

Climate change is already impacting New York State. The ClimAID Report projects that Western New York will face increased flooding, heat, and precipitation. Higher temperatures and sea level rise are extremely likely across the state's communities. Projected impacts from ClimAID regarding precipitation, temperature, and extreme weather events are described below.

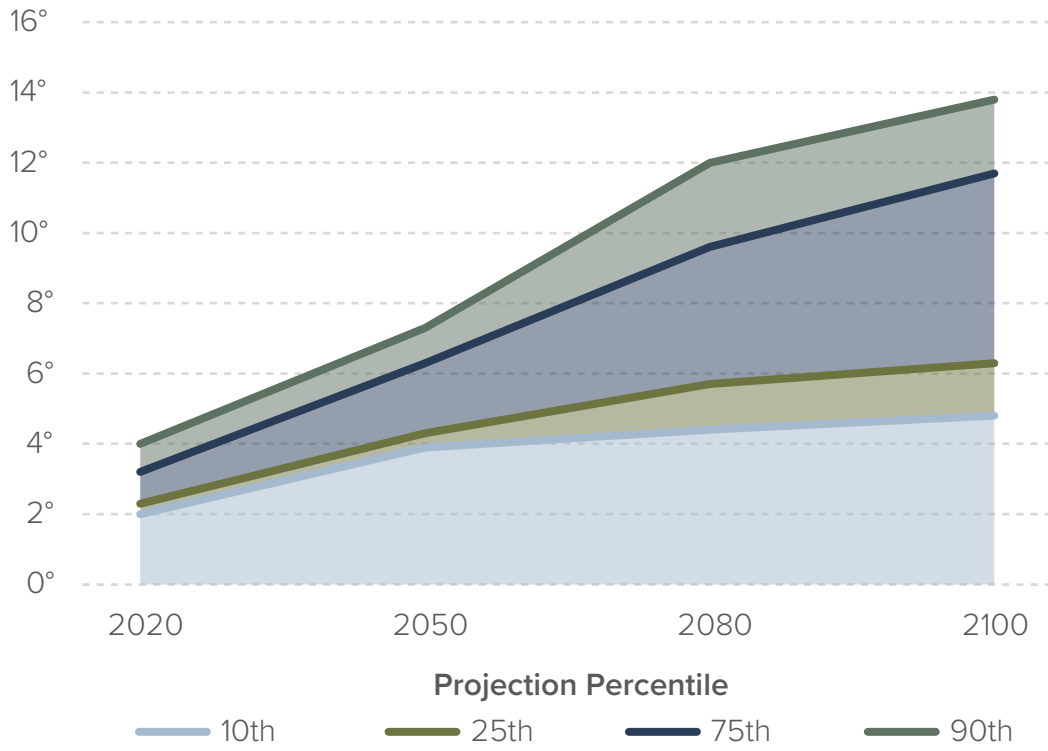
TEMPERATURE

Annual average temperatures across New York are projected to rise 2.0–3.4°F by the 2020s, 4.1–6.8°F by the 2050s, and 5.3–10.1°F by the 2080s. Western New York is expected to experience similar warming trends. Temperature increases will have significant negative effects such

Sources: (1) IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.
(2) U.S. Environmental Protection Agency. 2016. Climate change indicators in the United States, 2016. Fourth edition. EPA 430-R-16-004. www.epa.gov/climate-indicators
(3) Horton, R., D. Bader, C. Rosenzweig, A. DeGaetano, and W. Solecki. 2014. Climate Change in New York State: Updating the 2011 ClimAID Climate Risk Information. New York State Energy Research and Development Authority (NYSERDA), Albany, New York.

as increased flood damage, more intense urban heat islands, proliferation of disease-carrying insects., and more algal blooms that could impact drinking water supply. The growing season could also lengthen by around a month, which may have a negative impact on native species such as the region’s renowned lilacs. With more intense summers and milder winters, and overall less predictability of weather patterns and extreme weather events.

Figure 1. Projected Temperature Changes in Region 1 (Western New York)
 Source: ClimAID



PRECIPITATION

In Western New York, precipitation is predicted to increase 2-7% through the 2020s, 4-10% by the 2050s, and 4-13% by the 2080s compared to the 1970-2000 baseline. Much of the additional precipitation may occur during winter months, with slight decreases in summer and fall. Lake effect snow could initially increase due to lack of ice cover on Lake Ontario, but may decrease later this century as temperatures rise. Extreme precipitation will heighten flood risks and cause economic damage, as seen recently on Lake Ontario, and will impact farming practices.

CHANGES IN EXTREME EVENTS

Frequencies of cold extremes, heat waves, drought, flooding and other severe weather are projected to rise statewide. Large storms, high heat indices, and intense precipitation periods may occur more often

due to higher temperatures and increased atmospheric moisture.

CONCLUSIONS

The 2008 ClimAID report and 2014 update noted already rising temperatures across New York. The report concludes climate change will noticeably impact communities statewide - with more frequent flooding in prone areas, rising temperatures, and increased extreme weather events. There will be a notable economic impact as well, as more extreme weather events will impact the agricultural industry and tourism, as well as interrupt the food and resource supply chain, ecosystems, and overall quality of life.

Additional details about ClimAID Projections can be found in Phase I of the CAP.



NYS DISADVANTAGED COMMUNITIES (DACs)

For more information visit: www.nyscrda.ny.gov/ny/Disadvantaged-Communities

WHAT IS A DAC?

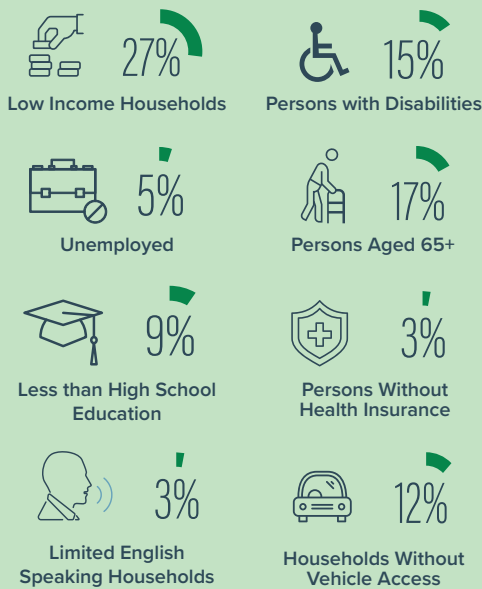
DACs were conceived through the dedicated efforts of the Climate Justice Working Group (established under the NYS Climate Act). This group was charged with the development of key DAC indicators or evaluation criteria. Forty-five indicators were used to identify the DACs, considering the environmental burdens of climate change risk within a community and its vulnerable population characteristics that contribute to more adverse effects of climate change.

DACS REPRESENT 35% OF NEW YORK'S POPULATION

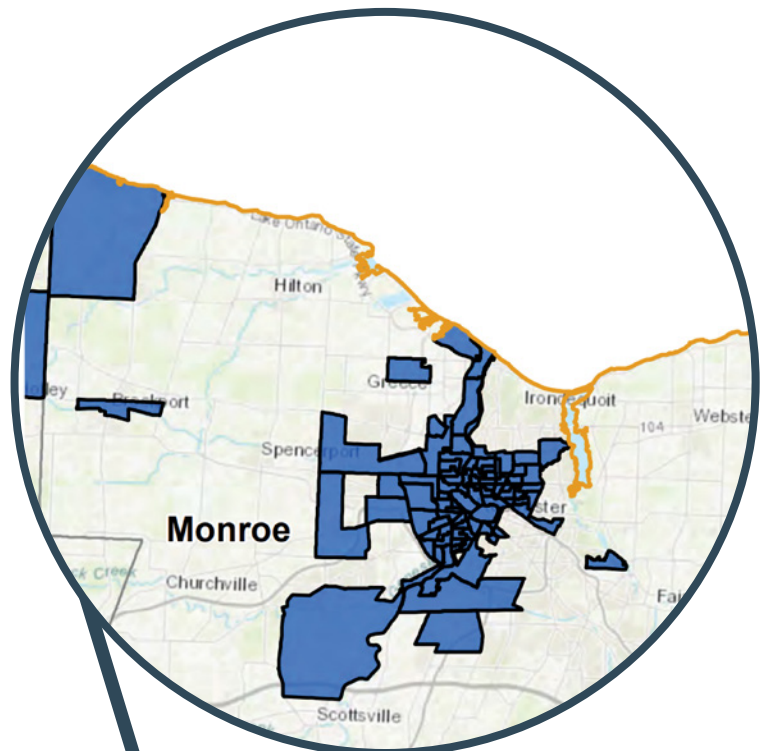
WHY ARE DACs IMPORTANT?

- Climate change unequally exacerbates existing burdens, vulnerabilities, and stressors in communities throughout the state.
- DACs were identified to ensure those communities directly benefit from the State's historic transition to cleaner, greener sources of energy, reduced pollution and cleaner air, and economic opportunities.
- DACs are to receive 35% to 40% of benefits from NYS Climate Act and related State-led initiatives investments.

VULNERABLE POPULATIONS MONROE COUNTY



MONROE COUNTY POPULATION
759,443
(2020 Census)



Monroe County's DAC census tracts include those in the following municipalities:

- Rochester
- Irondequoit
- Brighton
- Greece
- Gates
- Hamlin
- Brockport

[Click here to explore the interactive mapper showing key DAC statistics!](#)

Climate Change & Public Health

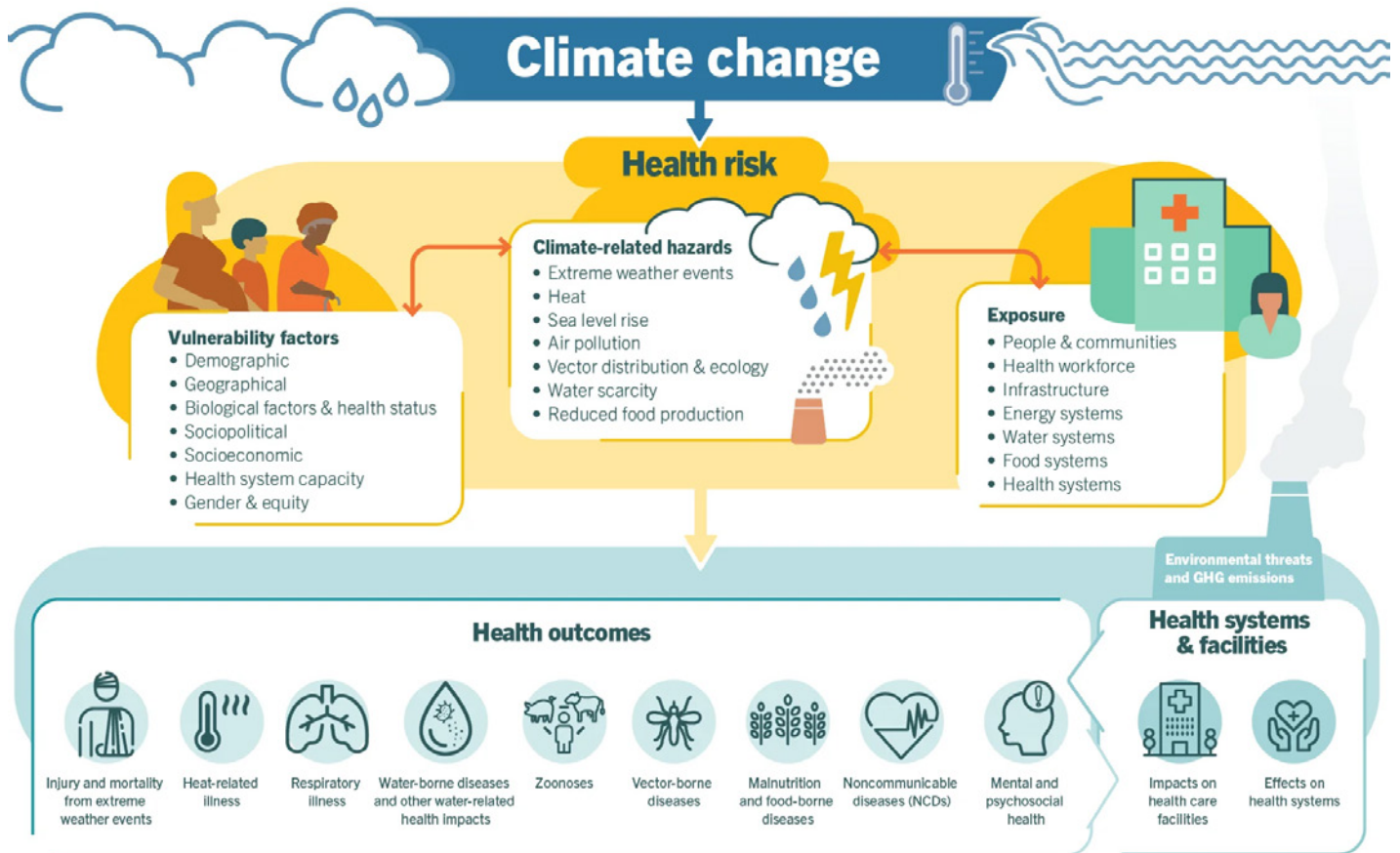


Climate Change has numerous effects on our planets rising temperatures, extreme weather events, rising sea levels, and increasing CO₂ levels which affect our health and safety. According to the U.S. Centers for Disease Control, climate change has also been linked to increases in violent crime and overall poor mental health. The health effects of climate change can include respiratory and heart diseases, pest-related diseases, water- and food-related illnesses, and injuries and deaths.

The graphic below identifies the connections between climate-related hazards and potential health outcomes affecting the population. It should be noted that disadvantaged communities and vulnerable populations are at increased risk for exposure and impacts of these climate hazards. These topics will be further explored in the county’s Climate Adaptation and Resiliency Plan.

Source: The World Health Organization

For more information visit: www.who.int/news-room/fact-sheets/detail/climate-change-and-health



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Part 3

OTHER COMMUNITY PLANS & INITIATIVES

■ County Plans & Initiatives

Phase II of the CAP is a guiding document and focuses on actions and strategies related to the reduction of greenhouse gas emissions. The CAP is one element of a larger compilation of plans and initiatives that are tackling climate change throughout the county. While Phase II of the CAP is centered on shaping strategies to reduce GHG emissions, other actions and policies related to overall sustainability, resiliency, transportation, and land use goals are addressed in related county long-range planning efforts, such as the Countywide Active Transportation Plan. For instance, strategies addressing response to climate-related disasters are addressed in the Monroe County Hazard Mitigation Plan, while strategies related to future climate resiliency will be addressed in the county Climate Adaptation and Resiliency Plan. These plans will work together to act on climate change in our community.

**MONROE COUNTY
CLIMATE ADAPTATION AND
RESILIENCY PLAN**

Monroe County is shifting into climate resiliency planning efforts towards addressing climate impacts in 2024. The Climate Adaptation and Resiliency Plan, complementary to the Community-Wide CAP, will also focus on climate change but will specifically seek to reduce or mitigate risks from natural and human-driven hazards over time, reducing the likelihood of harm from compounding disasters. The plan will assess potential risks, identify vulnerable assets and populations, evaluate likelihood and severity of potential impacts, and develop implementation plans with various adaptation, mitigation, and recovery actions.

Guiding Plans and Instruments of Policy	Operational Plans & Studies
Plan Forward (Comprehensive Plan)	Bring Monroe Back (ARPA)
Countywide Active Transportation Plan	Monroe County Hazard Mitigation Plan
Phase II Community-Wide CAP	Phase I. Government Operations CAP
Climate Adaptation and Resiliency Plan (future)	Organics Management Plan (future)



TYPES OF PLANS & INITIATIVES

Guiding documents are broad in scope but light in specific details, like a roadmap.

Operational Plans & Studies are centered more on a singular topic or project, like a blueprint for future actions.

PLAN FORWARD

The county’s Comprehensive Planning process is currently underway as of 2022. One of the three key themes of the Plan is “Environment,” which will address issues and opportunities pertaining to climate change, energy, natural resources, etc.

COUNTYWIDE ACTIVE TRANSPORTATION PLAN (CATP)

The CATP will address reducing transportation-related emissions by promoting, enhancing, and supporting a non-motorized transportation network throughout the county.

PHASE I GOVERNMENT OPERATIONS CAP

Phase I of the CAP focuses on the reduction of GHG emissions from county-run sites, facilities, infrastructure, and operations.

MONROE COUNTY HAZARD MITIGATION PLAN

This plan identifies potential hazards affecting residents, allows access to FEMA mitigation funding, and details projects to reduce future damages from natural and non-natural hazards through risk assessments of buildings, infrastructure, and critical facilities.

PHASE II COMMUNITY-WIDE CAP

This document (Phase II of the CAP) focuses on a broadened GHG emission sources throughout the county, such as housing, private industry operations, transportation infrastructure, etc.

BRING MONROE BACK

Monroe County received over \$144 million in State and Local Fiscal Recovery Funds through the American Rescue Plan Act (ARPA). The county’s COVID-19 strategy’s six key focus areas includes infrastructure improvements and sustainability.

Additional county Climate Initiatives are highlighted in the Action Plan.

■ New York State Initiatives

New York State has implemented one of the most ambitious climate action plans in the country. This agenda outlines a carefully managed and equitable shift towards clean energy sources that will generate high-quality employment opportunities while fostering healthy communities.

The Climate Leadership and Community Protection Act, commonly referred to as the Climate Act, was enacted into law in New York State on July 18, 2019. This landmark legislation mandates that the New York State must significantly reduce its overall GHG emissions. Specifically, the Climate Act requires a 40 percent reduction in GHG emissions by the year 2030, and a minimum reduction of 85 percent by 2050, compared to the baseline levels recorded

in 1990. The Climate Act also calls for 100% clean transportation for light duty vehicles by 2035, and 100% zero-emission electricity by 2040. Additional New York State climate initiatives can be found on page 24.

■ Regional Planning Initiatives

Sustainability planning also occurs at the regional level with the Finger Lakes Regional Sustainability Plan (covering Orleans, Genesee, Wyoming, Monroe, Livingston, Wayne, Yates, Seneca and Ontario Counties), which focuses on long-term sustainability efforts that will reduce GHG emissions and energy use. The plan highlights regional collaboration among stakeholders and is used to leverage investment in regionally significant sustainability projects.

CLIMATE SOLUTIONS ACCELERATOR REGIONAL PLAN

The Genesee-Finger Lakes Region Climate Action Strategy lays out a roadmap for the nine-county region to achieve substantial GHG emissions reductions and enhance climate resilience. The strategy has an overarching goal of reaching net zero emissions by 2050, exceeding the targets of the New York State’s Climate Act.

Key strategies and recommendations are organized into five focus areas: energy, transportation, waste, agriculture/working lands, and community resilience. For energy, priorities include transitioning

to renewable sources like wind and solar, increasing energy efficiency in buildings, and modernizing utility grids. The transportation section emphasizes reducing vehicle miles traveled through better land use planning and developing low-carbon mobility options.

Municipal CAPs

Communities in Monroe County are taking action to address GHG emissions. The City of Rochester and Town of Brighton have adopted CAPs, and currently, the Town of Pittsford is also working on the development of one.

CITY OF ROCHESTER CLIMATE ACTION PLAN

The City of Rochester’s Climate Action Plan, endorsed by the City Council in May 2017, aims to reduce GHG emissions by 40% from 2010 levels by 2030. To achieve this target, the Plan outlines 35 implementation actions organized into five key focus areas spanning the residential, commercial, and industrial sectors:

- Energy Use and Supply
- Transportation
- Waste and Materials Management
- Clean Water
- Land Use

The strategies and actions within these focus areas are designed to decrease emissions across the city through measures related to energy efficiency, renewable sources, sustainable transportation, waste reduction and diversion, water conservation, and climate-resilient land use practices.

The City of Rochester previously developed a government operations CAP in 2013, focusing on reducing the GHG emissions for buildings, vehicles, and other activities managed by the City of Rochester. The city is currently in the process of updating their CAP.

TOWN OF BRIGHTON CLIMATE ACTION PLAN

The Town of Brighton has developed a CAP to identify strategies and measures to reduce greenhouse gas emissions and adapt to the impacts of climate change. The CAP establishes a goal of achieving net zero emissions by 2042 through comprehensive mitigation strategies across sectors like energy, transportation, waste management, and natural resources.

Key mitigation strategies include transitioning to renewable energy sources, increasing energy efficiency of buildings, developing alternative transportation options, reducing waste sent to landfills, conserving natural areas, and promoting climate-smart land use policies. The plan also outlines adaptation measures to enhance resilience, such as improving stormwater management, protecting public health during extreme weather, supporting environmental justice for vulnerable populations, and engaging the community through education and outreach efforts. Successful implementation will include collaboration between the town government, businesses, institutions, residents and other stakeholders in the years ahead.

■ New York State Climate Smart & Clean Energy Communities

BACKGROUND

Climate Smart Communities (CSC) is a New York State Department of Environmental Conservation program meant to assist governments with reducing greenhouse gas emissions, implementing climate change adaptation strategies, and providing technical assistance and grants to participating communities.

To take part, communities must formally adopt the CSC pledge; register through the CSC online portal; select and implement CSC actions (over 100), collect documentation, and apply for certification. Upon review, the community will be evaluated and receive a bronze or silver certification based on points. As of 2024, there are 412 registered communities across NYS, covering a population of 9,561,630 in total. Of these registered communities, 122 are bronze certified and 10 are silver certified.

Benefits of participating in the CSC program include access to CSC grants, streamlined access to training, resources and tools, a strong framework to organize local climate actions and highlight priorities, and State-level recognition. There are additional quality-of-life benefits to implementing certification actions, such as cost savings due to greater efficiency, improved air quality, flood risk reduction, conservation of greenspace, and more walkable communities.

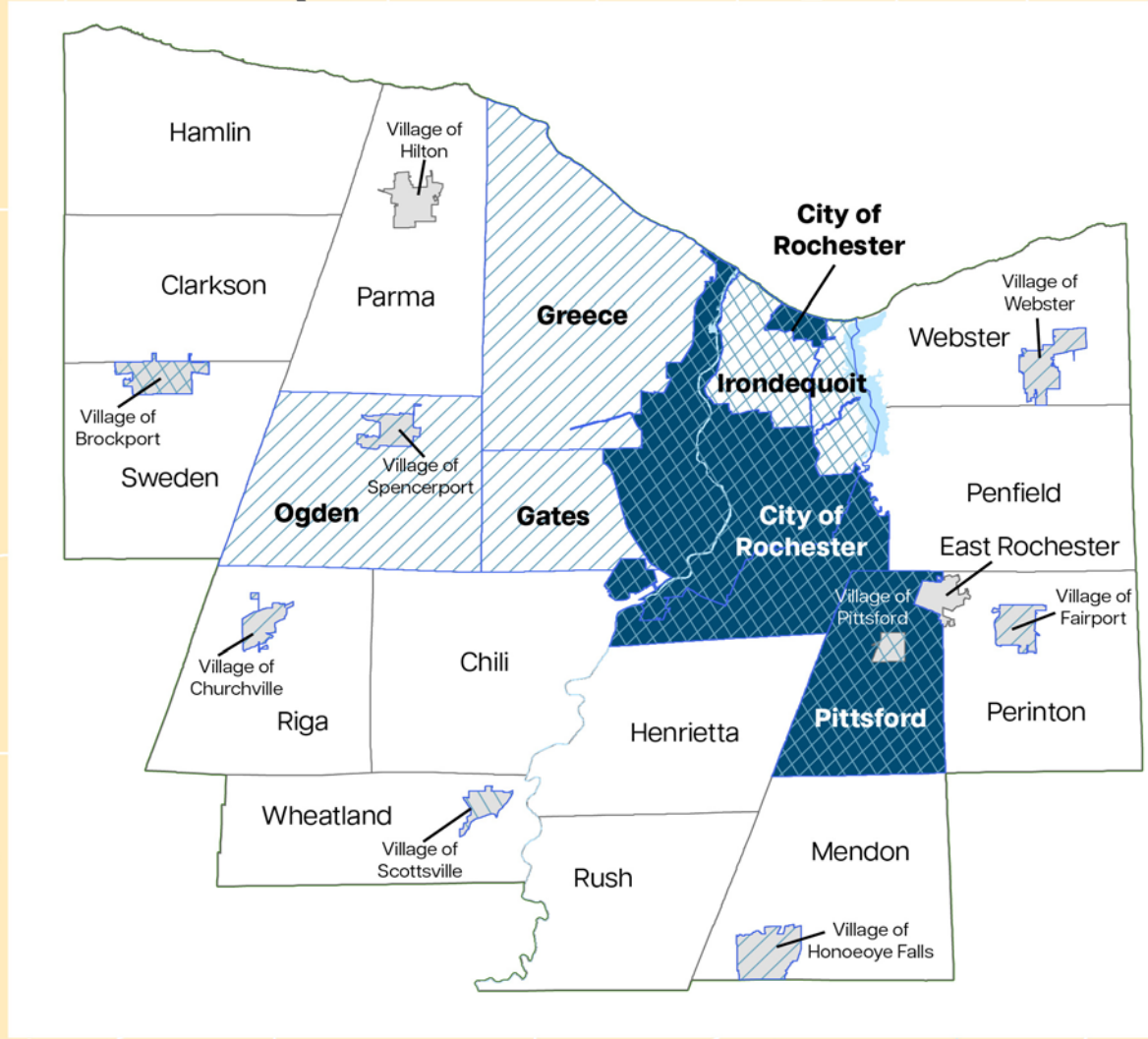
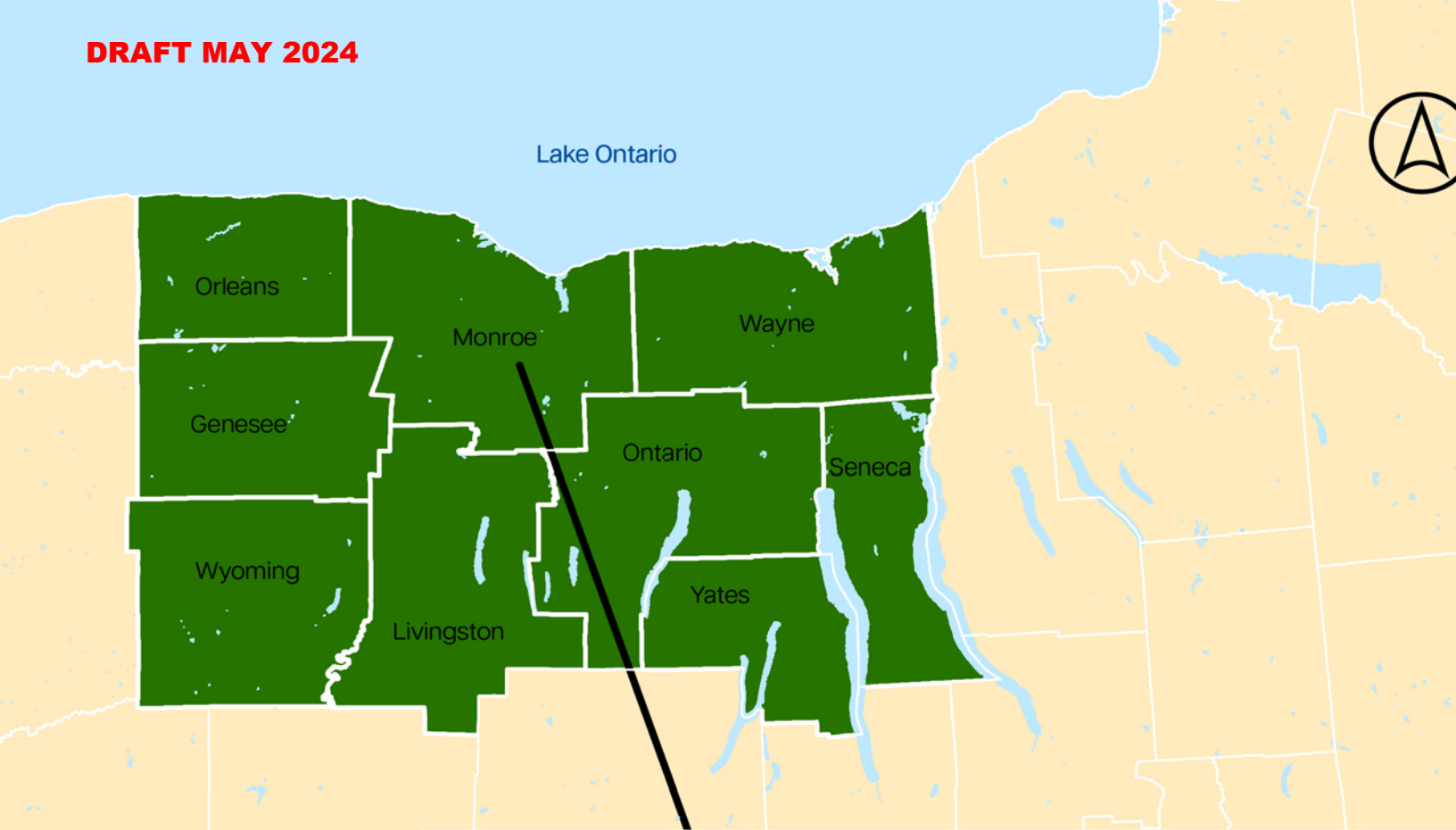
CSC IN MONROE COUNTY

Monroe County passed a resolution to register as a Climate Smart Community in 2021. Given the county's commitment to the program, as well the participation of several local communities, the CSC can serve as a structure through which the county can plan, prioritize, and track resiliency and sustainability efforts. The county's efforts can also inform and encourage additional local municipalities to participate, and to leverage best practices and lessons learned from other areas of the county.

The county obtained funding through the CSC program to complete this climate action planning process, and should continue to pursue funding through the program to support the actions and initiatives proposed in this Plan. The county achieved Bronze certification in 2023.

CLEAN ENERGY COMMUNITIES

In addition to CSC, the county as well as several local municipalities are also enrolled in Clean Energy Communities (CEC) through the New York State Energy Research and Development Authority (NYSERDA) (as shown on the map on the following page). Similar to CSC, the program allows municipalities to undertake actions working towards clean energy goals to earn points and obtain increased recognition and access to grant funding.



LEGEND

- Genesee/Finger Lakes Region
- CSC Certified Communities
- Certified CEC Communities
- CEC & CSC Certified Communities
- On-going Climate Action Planning Efforts

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Part 4

COMMUNITY-WIDE GREENHOUSE GAS (GHG) INVENTORY

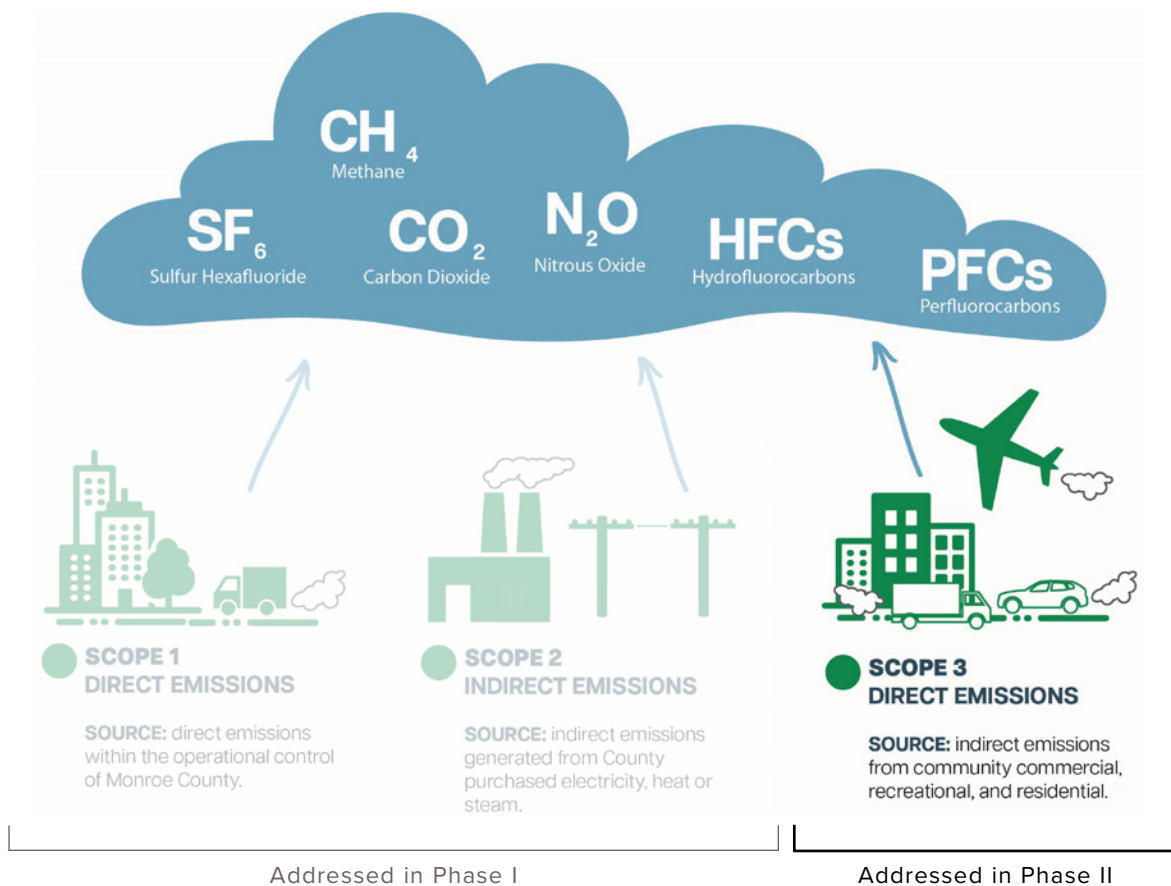
Purpose

Many of our daily activities result in greenhouse gas (GHG) emissions. When we drive vehicles, use electricity, or heat our homes from fossil fuel sources, we are causing GHG emissions. Developing a GHG inventory helps us understand current emissions levels and identify the sources and activities that have the largest impact on emissions.

The community-wide GHG inventory that follows is a complement to the county operations GHG inventory that is included in Phase I of the Monroe County Community-Wide Climate Action Plan (CAP). The community-wide inventory and the county operations inventory measure emissions from different sources. The community-wide GHG inventory measures

emissions from Monroe County residents and from businesses and organizations in Monroe County that are not operated by the county (Scope 3). The county operations inventory measures emissions from buildings owned by Monroe County as well as from county operations (Scopes 1 and 2).

The community-wide emissions inventory provides a baseline to help the county understand current emissions levels and determine where to target potential reduction strategies (as proposed in Part 5). The county intends to lead by example (see Phase I CAP) and work with its organizational partners to encourage community members and other public and private entities to take actions to reduce their emissions.



Methodology

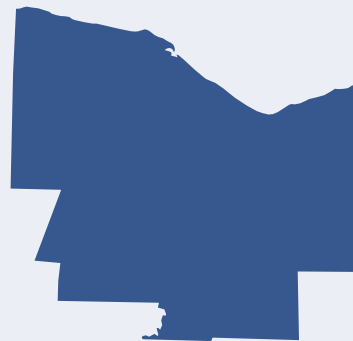
The community-wide GHG emissions inventory was developed using the International Council for Local Environmental Initiatives' (ICLEI) ClearPath tool, a globally recognized GHG accounting model. The ClearPath tool is the same tool that was used for the county's Phase I GHG emissions inventory. All input data including emission source and units, land use data, demographic data, applicable emission factors, and operational assumptions were collected and input into the ClearPath tool consistent with ICLEI protocols and tool prompts. Data sources include Monroe County, the Climate Solutions Accelerator, the Genesee Transportation Council, the NY State Energy Research and Development Authority (NYSERDA), and U.S. Environmental Protection Agency (USEPA) models such as the Motor Vehicle Emission Simulator (MOVES) model.

The community-wide GHG emissions inventory uses Monroe County's geographic boundary as its physical boundary. All emissions generated within this boundary were collected and assessed. Consumption data included in the emissions inventory is based on population data.

Due to the limited availability of GHG-related historical data for the county and the economically disruptive COVID-19 pandemic, it was determined that 2019 was the most appropriate year to use for the community-wide GHG emissions inventory.¹

When
2019

Where
Monroe County



Who

- Monroe County residents
- Businesses and organizations in Monroe County (that are not operated by Monroe County)

What

- Vehicle emissions
- Energy use emissions
- Waste emissions
- Agriculture emissions
- Other emissions

Why
To develop a baseline emissions inventory for Monroe County.

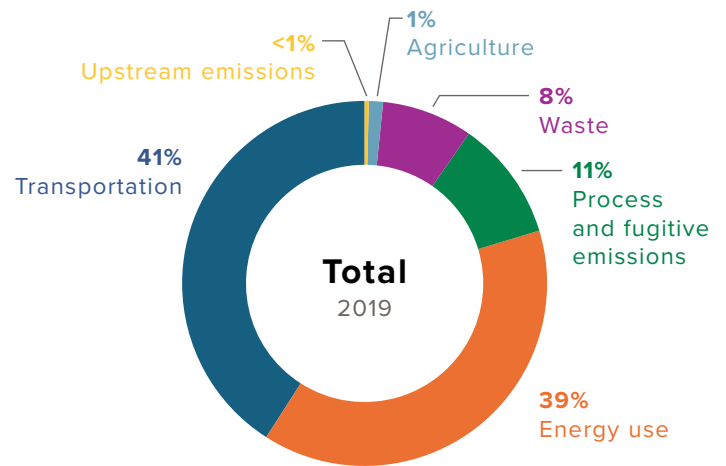
Emissions Sources

The community-wide GHG emissions inventory reports emissions from the following source categories:

- **Transportation:** emissions from vehicles including cars, trucks, trains, airplanes, boats, and construction and lawn equipment.
- **Energy Use:** emissions from the production and consumption of electricity, natural gas, propane, heating oil, and wood for heating residential, industrial, and commercial buildings.
- **Process and Fugitive Emissions:** emissions from HVAC and refrigerant use, natural gas leakages, and emissions from industrial processes.
- **Waste Generation and Water Supply:** emissions from landfills, recycling, and composting, and from wastewater processing and water supply operations.
- **Agriculture, Forestry, and Land Use:** emissions from fertilizer, livestock, and dairy associated with agricultural and forestry land uses.
- **Upstream Emissions:** emissions from electric power transmission and distribution losses.

Total Emissions by Sector

In Monroe County, transportation and energy use make up over 80% of total emissions. This is consistent with regional and statewide trends. Both the 2022 *Statewide GHG Emissions* and the 2022 *Genesee-Finger Lakes Climate Action Strategy Report* for the nine county Genesee-Finger Lakes region found that transportation and energy were the two largest sources of emissions.



Transportation (41%) and energy use (39%) are the two largest contributors to total emissions in Monroe County.

	2019 Emissions (CO ₂ e MT)
Transportation (41%)	3,347,100
Energy Use (39%)	3,166,408
Process and Fugitive Emissions (11%)	870,589
Waste Generation and Water Supply (8%)	658,199
Agriculture, Forestry, and Land Use (1%)	102,917
Upstream Emissions (<1%)	29,748
Total:	8,174,961

1 All data from 2019.

Emissions Sources


Transportation (41%)	Cars and Trucks, Employee Commutes	Emissions were generated based on fuel (gasoline, diesel, ethanol, compressed natural gas [CNG], and other fuels) and vehicle miles traveled (VMT) records for sources including on-road light medium and heavy duty vehicles; rail (based on Amtrak data), airplanes (based on fuel records from the airport), and boats; construction equipment such as excavators, forklifts, various types of loaders, lawn and garden equipment; and portable generators and pumps. Data was obtained from the Climate Solutions Accelerator, the regional metropolitan planning council, USEPA MOVES model, and county records.
	Rail, Air, and Marine	
	Off-Road Equipment	
Energy Use (39%)	Residential Energy (Energy Use)	Emissions were calculated based on electricity use and fuel combustion, by sector. Energy included indirect emissions associated with the production of electricity and direct combustion emissions associated with the use of natural gas, propane, home heating oil, and wood for heating. Industrial energy also included fuel combustion generated point source emissions from USEPA Title 5 identified source.
	Industrial Energy (Energy Use and Point Source Emissions from Fuel Combustion)	
	Commercial Energy (Energy Use)	
Process and Fugitive Emissions (11%)	Natural Gas and Refrigerants Losses	Emissions were calculated using HVAC and refrigerant use records, fugitive emissions from natural gas distribution, and emissions from chemical transformation of raw materials and fugitive emissions during industrial processes. Data was based on the number of residents and businesses in the county.
Waste Generation and Water Supply (8%)	Landfill	Emissions were generated based on tons of material landfilled (net emissions) and recycled and composted (net reduction in emissions) records obtained from WM and the county. Emissions associated with the wastewater processing and water supply were based on the number of residents and businesses in the county.
	Compost and Recycling	
	Wastewater and Water Supply	
Agriculture, Forestry, and Land Use (1%)	Land Use and Acreage	Emissions were generated based on land use records obtained from Monroe County land use records based on GIS analysis of changing acreage and use, as well as USDA's county-based agriculture surveys.
Upstream Emissions (<1%)	Electric Power Transmission and Distribution Losses	Emissions generated based on Climate Solutions Accelerator data and a Grid loss factor: eGRID 2019, Eastern region Electric Power Transmission and Distribution Losses.

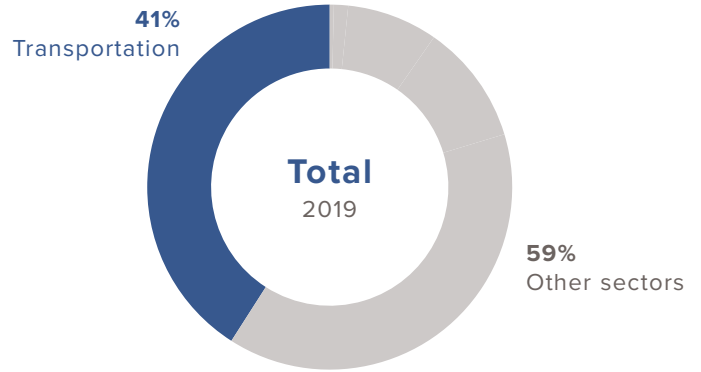
Transportation

Transportation is the single largest contributor to emissions in Monroe County, accounting for 41%. Most emissions come from passenger cars and freight. Gasoline powered cars are the biggest sources of emissions, followed by diesel trucks.

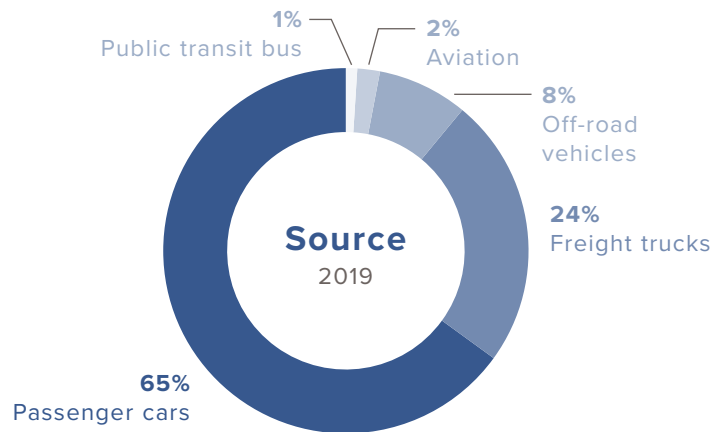
Key Finding

Transitioning to zero emission cars and trucks and reducing vehicle miles traveled will have the greatest impact on reducing emissions.

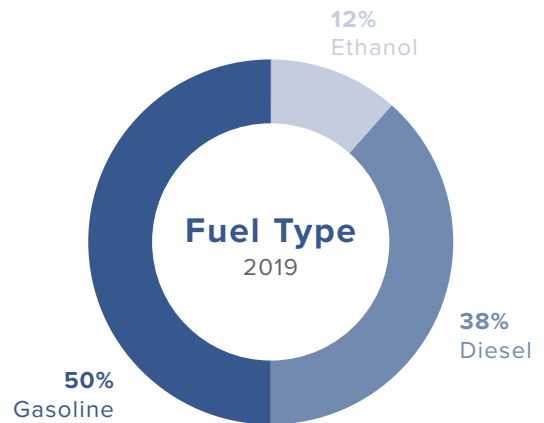
 **Want to learn more** about what the Rochester-Genesee Regional Transportation Authority is doing to transition its bus fleet to zero-emission vehicles? Check out page 57.



Transportation is the largest contributor to total emissions, accounting for 41%.



Most transportation emissions come from passenger cars (65%) and freight trucks (24%).

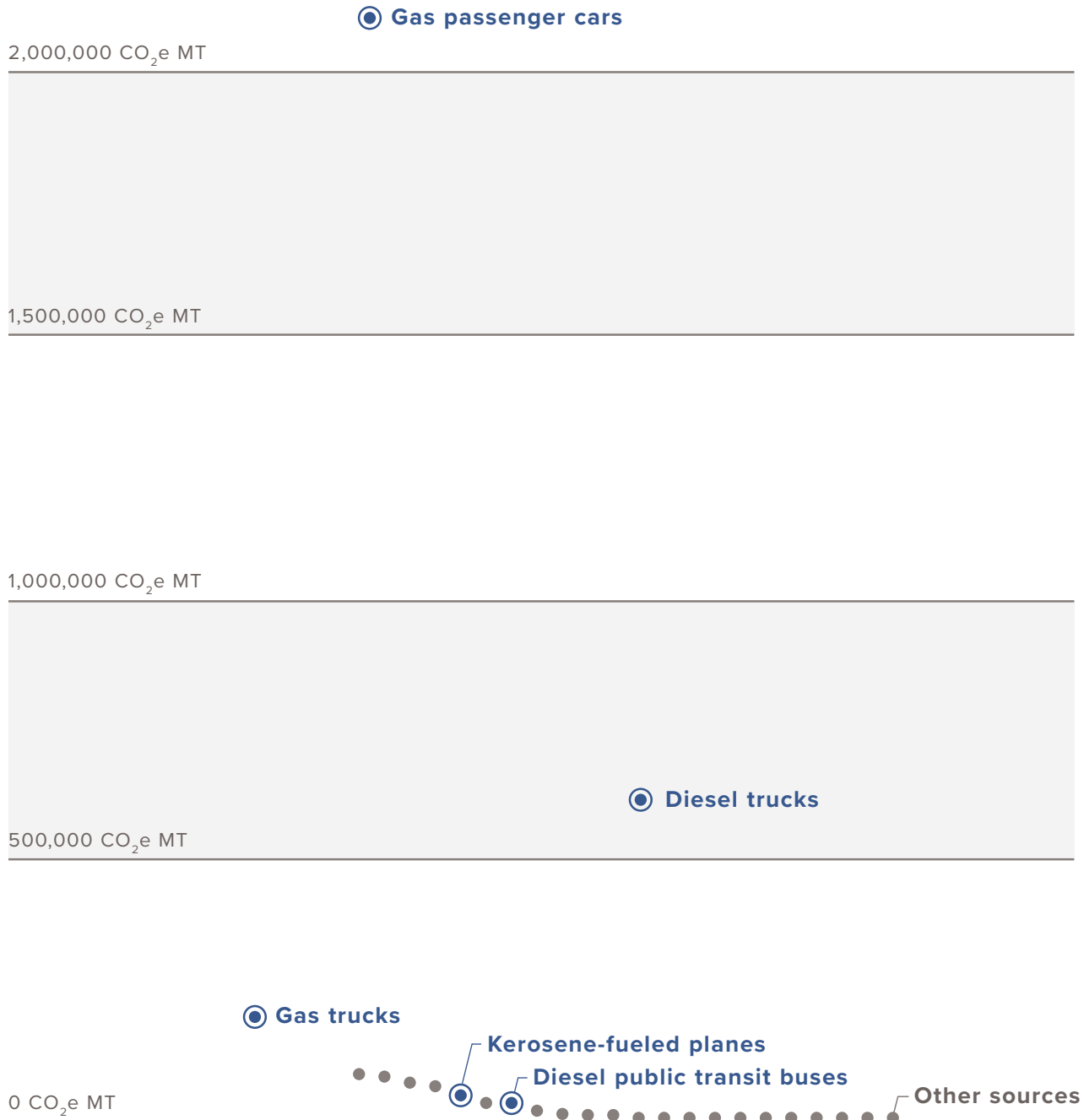


Most transportation emissions come from gasoline-powered vehicles (58%).

1 All data from 2019.

Total Emissions, 2019

2,500,000 CO₂e MT



Gasoline powered cars are the biggest sources of emissions, followed by diesel trucks.

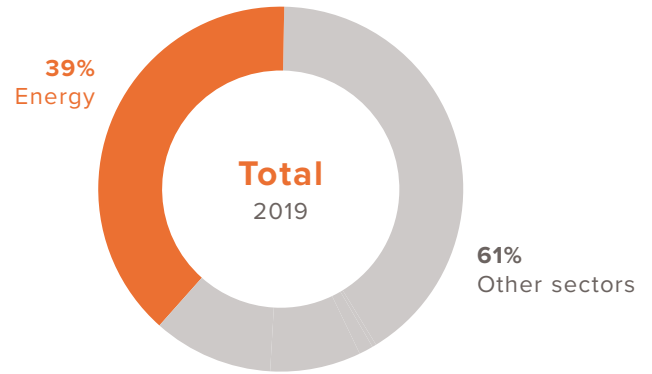
Energy Use

Energy use makes up 39% of total emissions in Monroe County. Residential energy use is the largest contributor to emissions at 43%, followed by industrial and commercial energy use at 31% and 26%.

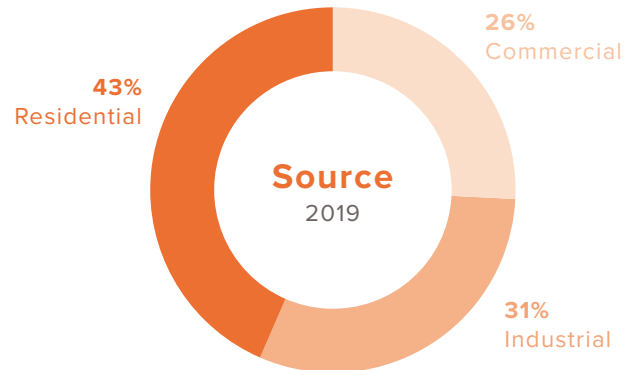
Most energy emissions come from natural gas-powered sources. This suggests that most emissions are resulting from heating needs. There are several ways to reduce heating demands including through weatherizing buildings (i.e., better insulation and building envelopes), transitioning to renewable heat sources like geothermal, and using more energy efficient heating systems like heat pumps.

Key Finding

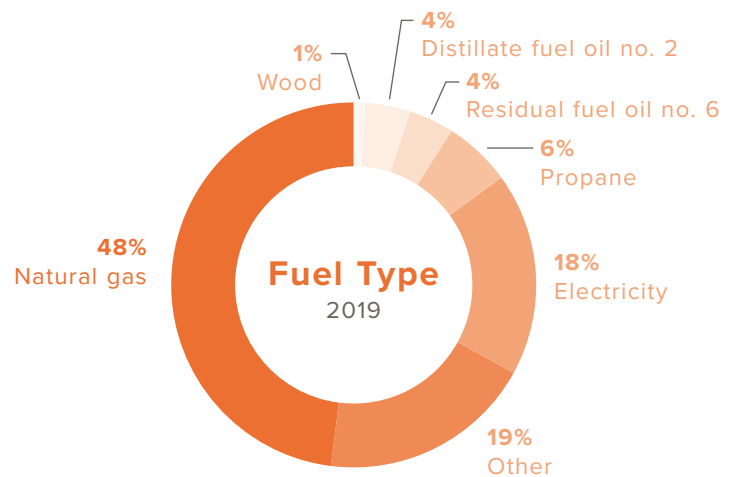
Mitigating heating demands will have the greatest impact on reducing emissions from energy use. Better weatherization of buildings, transitioning to renewable energy options, and using energy efficient heating systems can help mitigate heating demands.



Energy is the second largest contributor to total emissions, accounting for 39%.



Most energy emissions come from residential energy use (43%).

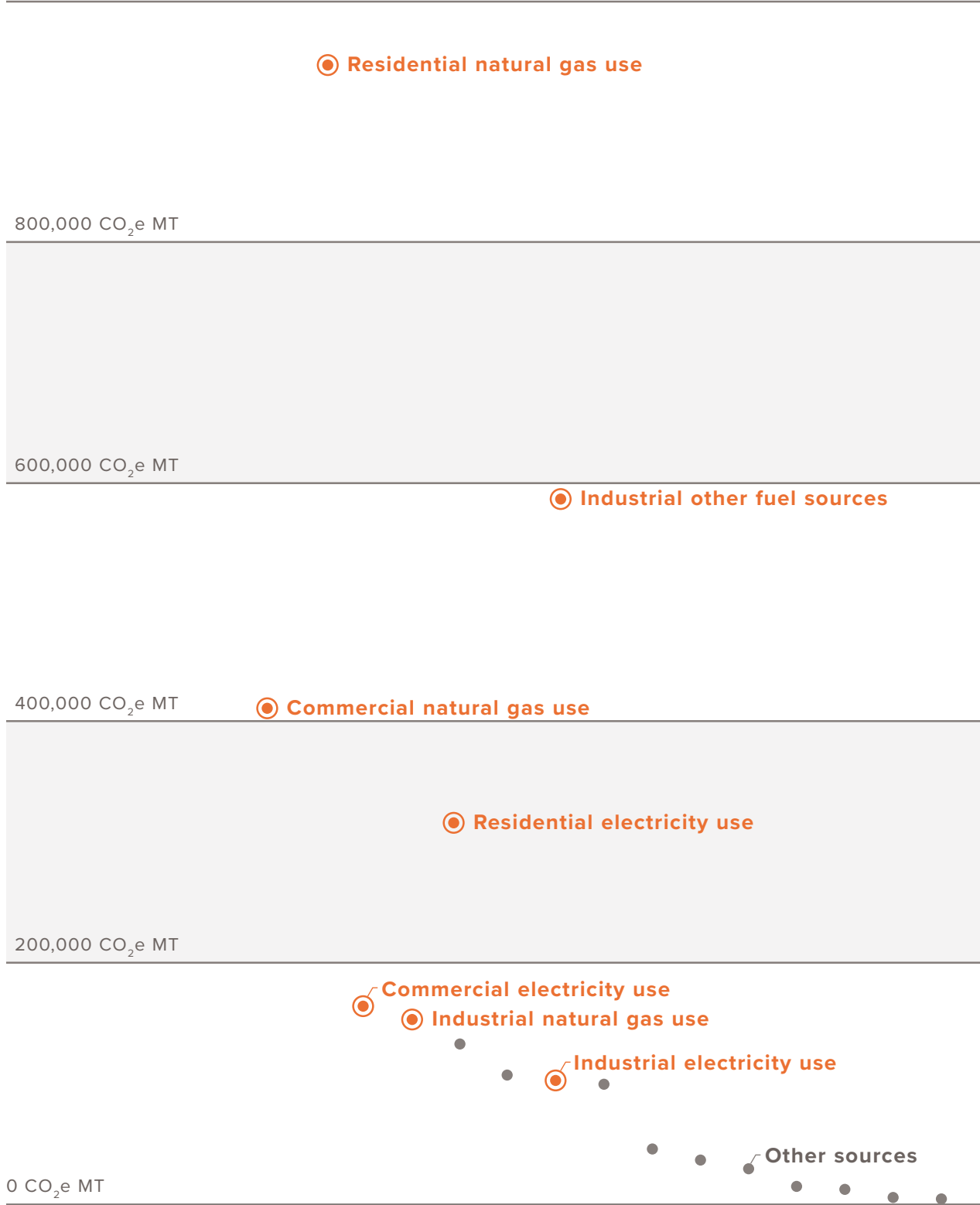


Most energy emissions come from natural gas-powered sources (48%).

1 All data from 2019.

Total Emissions, 2019

1,000,000 CO₂e MT



Natural gas sources account for most residential and commercial emissions.

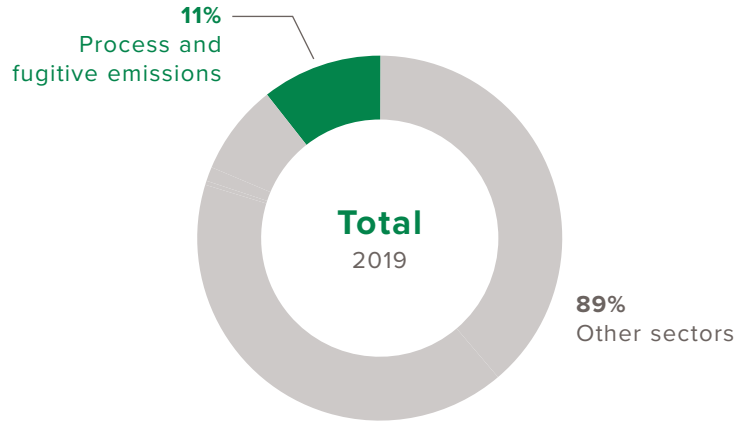
Process and Fugitive Emissions

Process and fugitive emissions make up 11% of total emissions in Monroe County. These types of emissions result from the intentional or unintentional release of GHGs. Process emissions are generated from the production of raw materials. Fugitive emissions come from the production, processing, transmission, storage and use of fuels or other substances, often through leaks in joints, seals, and in pipelines. Examples include HFCs from refrigeration leaks and leaks in natural gas distribution systems.

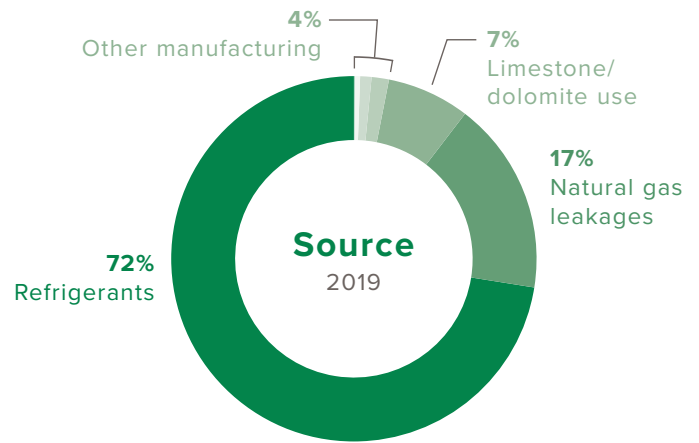
Refrigerants are the largest source of process and fugitive emissions in Monroe County. Emissions from refrigerants are expected to grow in Monroe County and across the country as climate change increases the number of days requiring air conditioning.

Key Finding

Reducing refrigerant use and better managing refrigerants will have the greatest impact on reducing emissions.



Process and fugitive emissions are the third largest contributor to total emissions, accounting for 11%.



Most process and fugitive emissions come from refrigerants (72%) and natural gas leakages (17%).

1 All data from 2019.

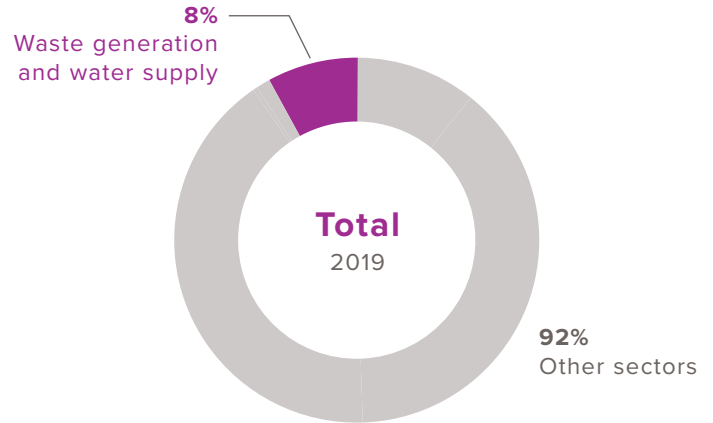
Waste Generation and Water Supply

Waste generation and water supply emissions account for 8% of total emissions in Monroe County. Almost all emissions in this sector come from solid waste operations (99%). Direct methane emissions from the Mill Seat and High Acres landfills (both owned by WM) are the largest source of emissions in this sector, accounting for 96% of all emissions. The next largest sources of emissions also result from waste operations – solid waste collections at 2% and landfill gas (LFG) flaring/combustion at 1.5%. Emissions from wastewater and water supply operations are minimal, accounting for less than 1%.

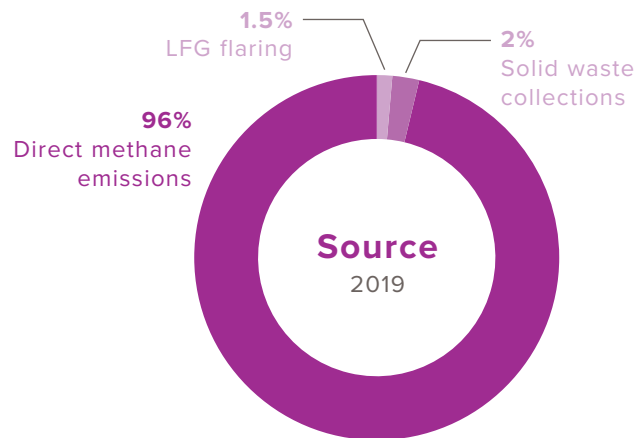
Though not reflected in the data used for this community-wide GHG inventory (2019), WM has recently achieved emissions reductions by upgrading its gas collection and control systems. By year end 2023, Mill Seat Landfill reduced its landfill emissions by 22% from 2021 baseline levels and High Acres Landfill reduced its landfill emissions by 46% from 2021 baseline levels.²



Want to learn more about WM's sustainability initiatives? Check out page 67.



Waste generation and water supply makes up 8% of total emissions.



Most waste emissions come from direct methane emissions (96%).

Key Finding

Continuing to reduce methane emissions from landfills will have the greatest impact on reducing overall emissions.

1 All data from 2019.


2 WM 2023 Sustainability Report. Page 8.

Agriculture, Forestry, and Land Use


Agriculture, forestry, and land use account for 1% of total emissions in Monroe County. Most emissions in this sector come from fertilizer use (50%), followed by livestock (29%) and dairy (21%).

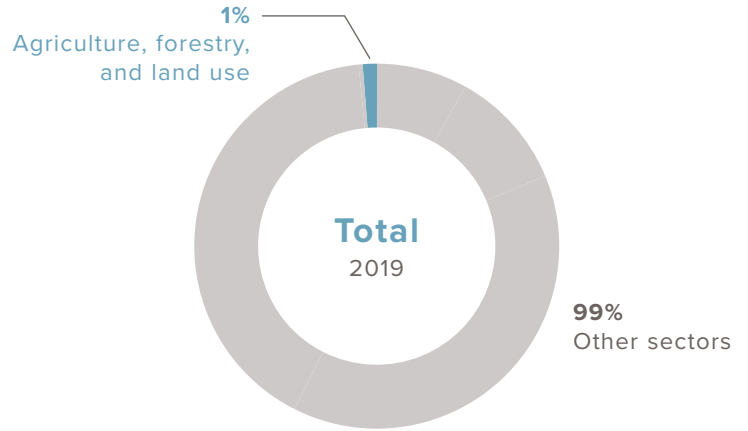
Key Finding

Increasing use of sustainable agriculture practices such as managing fertilizer use will have the greatest impact on reducing emissions.

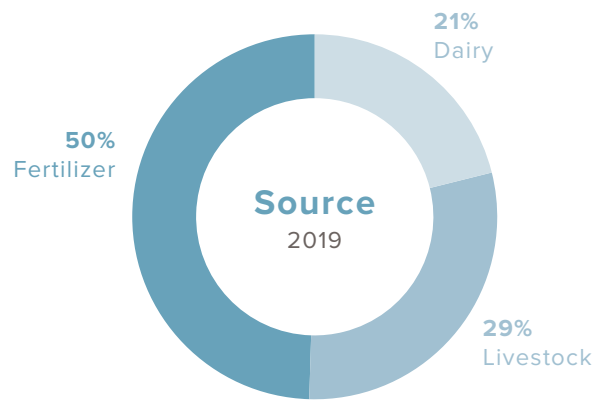
 **Want to learn more** about climate resilient farming techniques being used in Monroe County? Check out page 64.

Though not reflected in this community-wide GHG inventory, Monroe County's tree canopy sequesters around 400,000 MT CO₂e every year. In 2019, this meant that the tree canopy removed about 5% of total community-wide emissions from the atmosphere.

 **Want to learn more** about the benefits of Monroe County's tree canopy? Check out page 61.



Agriculture, forestry, and land use account for **1% of total emissions**.



Most agricultural emissions come from fertilizer (50%), followed by livestock (29%), and dairy (21%).

1 All data from 2019.

2 Emissions from tractors and other agricultural equipment are included in the transportation sector and not in the agriculture, forestry, and land use sector. If emissions from agricultural vehicles were included in the agriculture, forestry, and land use sector, they would account for less than 1% of total emissions.

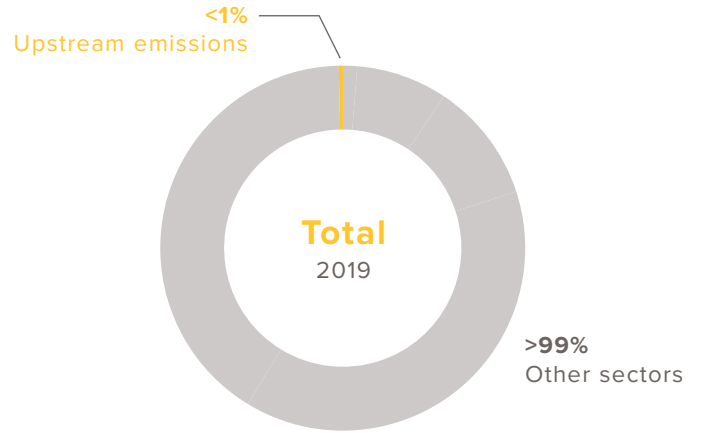
Upstream Emissions

Upstream emissions account for less than 1% of total emissions in Monroe County. Upstream emissions include the transmission and distribution (T&D) impacts of purchased electricity used by the community, as well as the emissions associated with extracting, producing, and delivering the fossil fuels used to generate electricity.

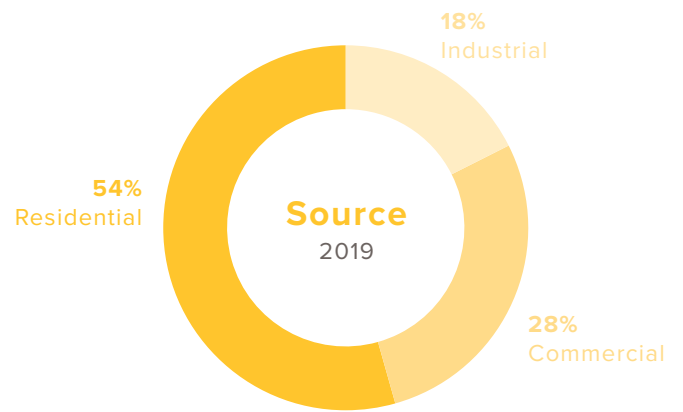
Most upstream emissions in Monroe County are related to energy distribution to residential users.

Key Finding

Transitioning to renewable energy sources will have the greatest impact on reducing upstream emissions.



Upstream emissions make up **less than 1% of total emissions.**



Upstream emissions from distribution to residential users account for the most emissions (54%).

1 All data from 2019.

“Business as Usual” Forecast

The “business as usual” (BAU) forecast estimates future emissions in Monroe County through the year 2050 assuming today’s status quo continues unmitigated into the future. This means that the BAU projection assumes **no additional actions** will be taken within the Monroe County boundary to reduce emissions beyond what is already regulated or policies that have already been adopted as of 2023. The BAU projection will be used as the baseline against which to measure potential emissions reductions from the strategies proposed in Part 5.

The BAU forecast includes the following assumptions:

- **Monroe County’s population will grow** to 768,123 by 2050.¹
- All sales or leases of new light-duty passenger vehicles in New York will be **zero-emission vehicles** by 2035.²
- All sales or leases of new medium- and heavy-duty vehicles will be **zero-emission vehicles** by 2045.²
- **Transportation emissions from on-road passenger and heavy-duty vehicles will decrease** by 1.5% per year through 2050 because of increased fuel efficiency and electric vehicle use.
- **Vehicle miles traveled will increase** for all vehicle types.
- **New York’s grid will produce 100% zero-emission electricity** by 2040.³

The BAU projects that emissions in Monroe County will decrease through 2050 without any additional actions being taken. It should be emphasized that the BAU projection relies on achievement of the State’s ambitious goals for zero-emission vehicles and a zero-emission grid. If these goals are not met, future emission reductions are likely to be lower.

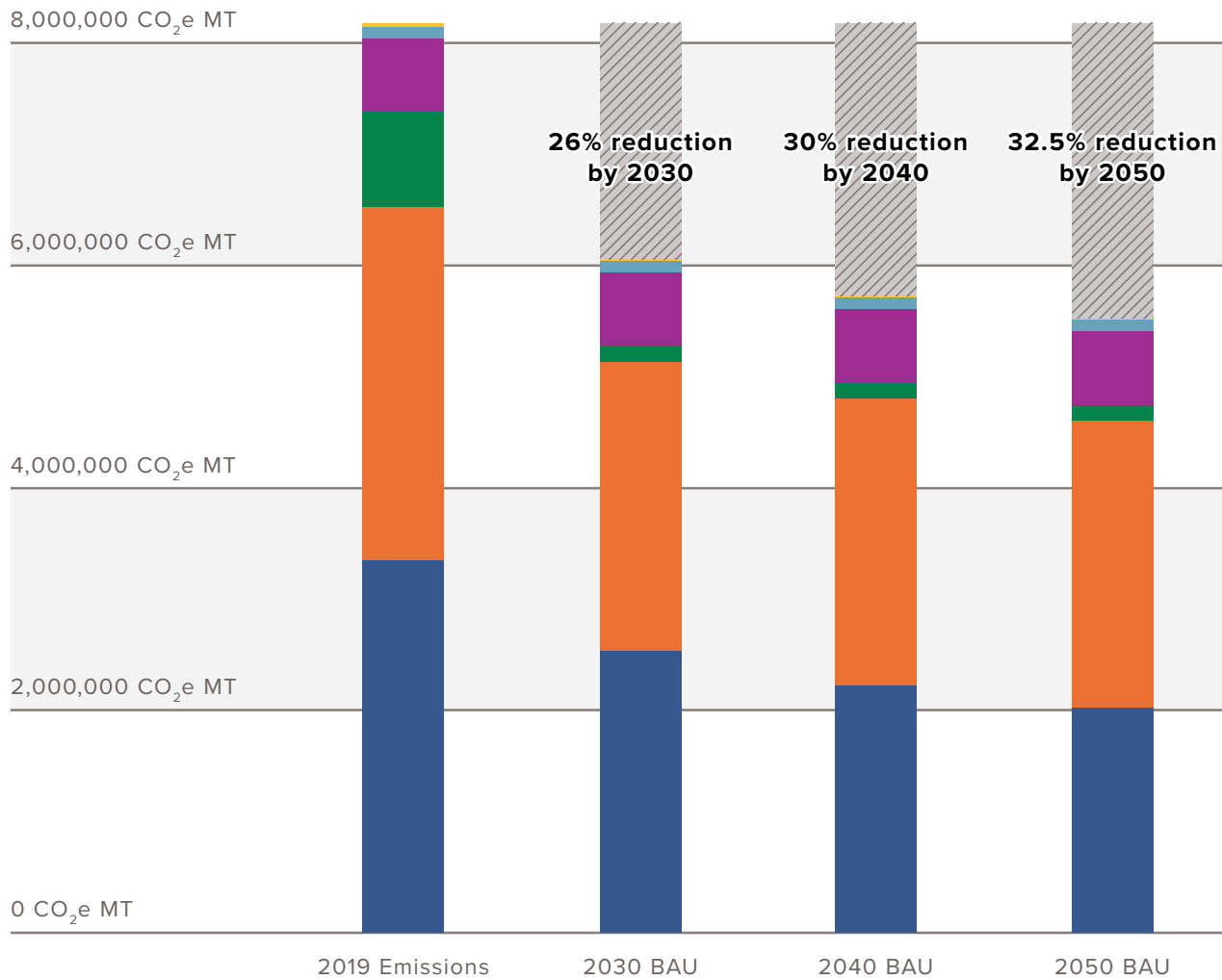
Key Finding

If New York State’s ambitious emissions reduction goals are met, emissions in Monroe County are projected to decrease 32.5% by 2050.

The strategies proposed in Part 5 are anticipated to result in additional reductions beyond the BAU baseline.

-
- 1 Based on the Regional Population Forecasts County, City, Town and Village Projections for the Genesee/Finger Lakes Region out to the year 2050 prepared by the Genesee/Finger Lakes Regional Planning Council (2013, Revised 2015).
 - 2 Based on New York’s Clean Transportation Roadmap prepared by NYSERDA (2021). The roadmap also calls for decreases in aviation, rail and marine vessels emissions but as the regulations around those sources are less developed, emission reductions are not assumed in this BAU scenario.
 - 3 Included as a goal in the 2019 Climate Leadership and Community Protection Act (CLCPA). The state is already projected to achieve renewable energy for 66% of the grid based on the current pipeline of renewables under contract and in development projects. Therefore, the BAU assumes the state achieves this goal.

“Business as Usual” Forecast



	2019 Emissions (CO ₂ e MT)	2030 BAU (CO ₂ e MT)	2040 BAU (CO ₂ e MT)	2050 BAU (CO ₂ e MT)
Transportation	3,347,100	2,532,750	2,223,916	2,017,852
Energy Use	3,166,408	2,597,632	2,570,954	2,582,188
Process and Fugitive Emissions	870,589	148,597	149,658	150,595
Waste Generation and Water Supply	658,199	656,077	660,872	665,110
Agriculture, Forestry, and Land Use	102,917	102,917	102,917	102,917
Upstream Emissions	29,748	2,564	276	30
Total:	8,174,961	6,040,537	5,708,593	5,518,692

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Part 5

CLIMATE ACTION GOALS & STRATEGIES

Goal Framework Overview

Introduction

The Climate Action Goals and Strategies section of this plan provides a dynamic framework that outlines objectives and the necessary steps for achievement. This effort, structured around key impact areas, aims to engage a broad coalition of stakeholders from government, business, and civic groups to advance these initiatives. Monroe County seeks to reduce its environmental footprint, enhance resilience, and pave the way for a sustainable legacy. Stakeholders have actively contributed to refining the goals and strategies throughout the planning process, together building the foundation for significant, sustainable changes for current and future generations.

Framework

To guide Monroe County's Phase II CAP efforts, a detailed Goal Framework was developed. This structured approach ensures efficient and effective resource allocation. The framework maps out specific areas of focus, articulates clear and achievable goals, and pinpoints the actions—some spearheaded by county authorities and others powered by the community. Each component of the framework is designed to provide a comprehensive approach, helping the county to not only meet but exceed the designated environmental targets. With this structured strategy, Monroe County is set to make meaningful and measurable strides towards a sustainable and resilient future.



FOCUS AREA: A sector or theme that has been identified as critical for addressing the environmental challenges in Monroe County. The focus areas help to guide the allocation of resources, development of policies, and implementation of strategic actions. They serve as the foundational elements around which this plan is structured.



GOAL: A broad statement that outlines the county's ambition to reduce GHG emissions and diminish Monroe County's contribution to global climate change.



ACTION: Tangible steps that Monroe County and its community partners can take to achieve the outlined goals. This includes the development and execution of detailed plans, projects, policies, and programs.

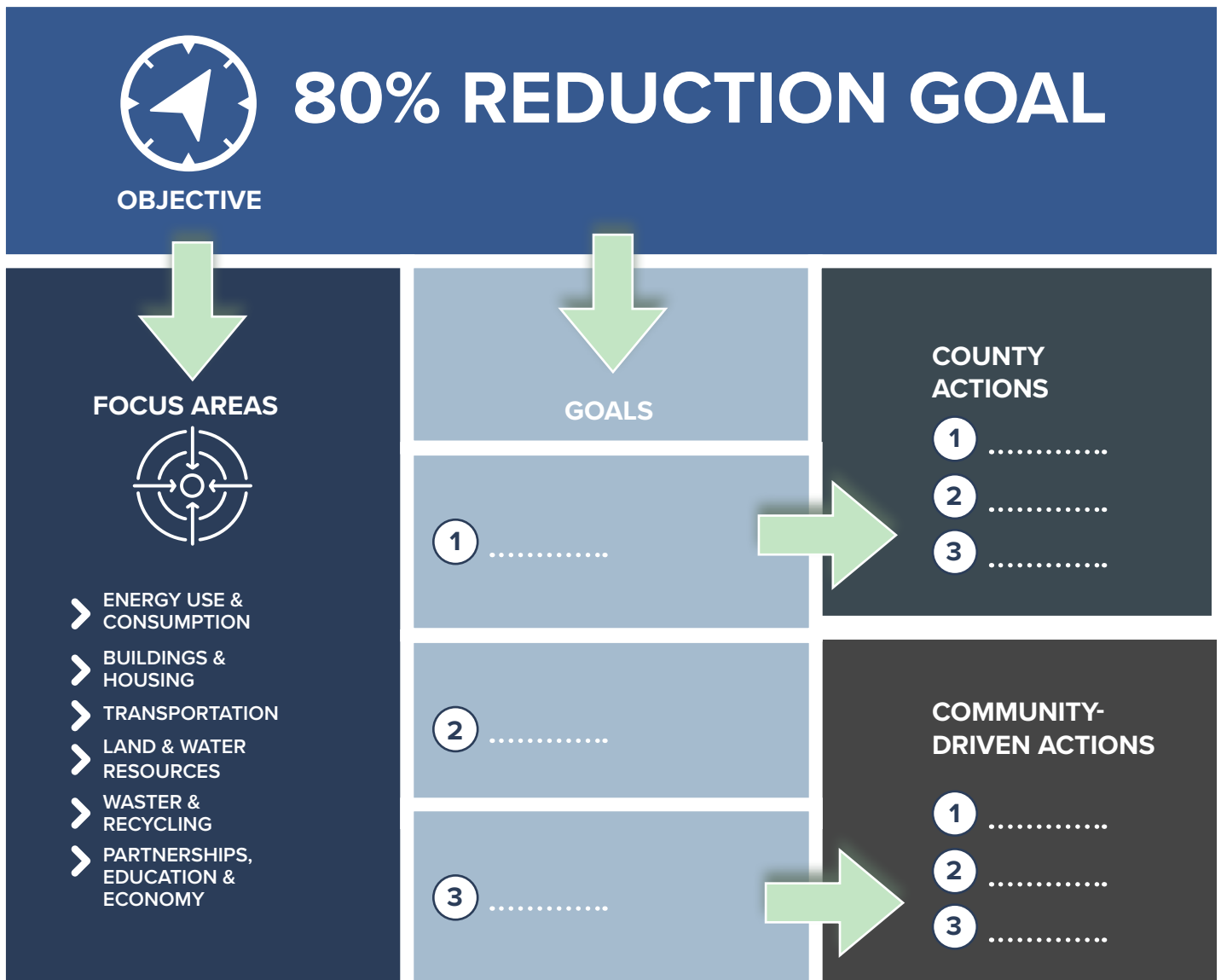
To further organize these efforts, two distinct action tables have been developed.

- **County Actions.** Proactive measures that Monroe County can directly undertake to support specific goals within each focus area, aimed at reducing GHG emissions where applicable.
- **Community-Driven / County-Supported Actions.** Potential actions municipalities, residents, businesses, and organizations may initiate at their discretion, with the county providing support as a funder, coordinator, connector, and informational resource.

JOINING FORCES TO ADDRESS GLOBAL CHALLENGES

Target Goal

Phase II of Monroe County’s CAP commits to an ambitious target of reducing greenhouse gas (GHG) emissions by 80%, marking a decisive step toward sustainability. This phase broadens the scope from county operations to include community-wide efforts, tackling GHG emissions across multiple sectors such as housing, industry, transportation, and infrastructure. In response to the pressing need to address climate change, Monroe County is dedicated to establishing specific GHG reduction goals and developing practical strategies that engage all community segments. The plan outlines a collaborative approach, involving both the county and the community, to achieve these comprehensive reduction targets across the specified focus areas.



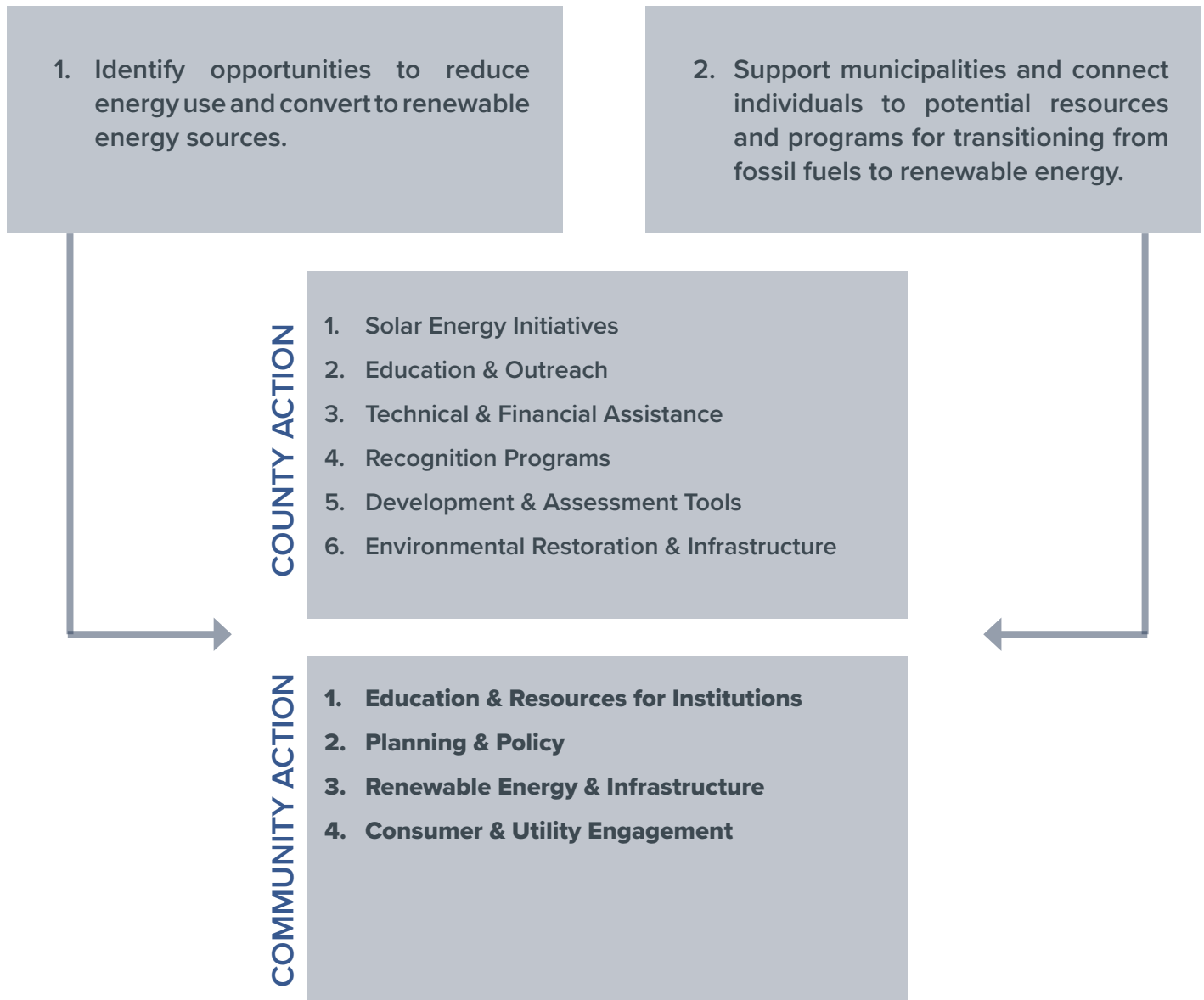
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1 ENERGY USE & CONSUMPTION



- The type and quantity of energy sources used have a direct impact on climate change due to their associated greenhouse gas emissions.
- Transitioning away from fossil fuels (gas, oil, coal) towards more sustainable energy alternatives like solar, wind, and geothermal will reduce climate impacts.
- The practical solution involves shifting to electricity-powered technologies while simultaneously decarbonizing the sources of electricity generation.

Goals



FOCUS AREA

COUNTY ACTION

1

ENERGY USE & CONSUMPTION

<p>1. Solar Energy Initiatives</p> <ul style="list-style-type: none"> • Provide resources for zoning and planning boards to consider incentivizing a certain coverage of solar panels above parking areas. • Incentivize the installation of solar panels above parking areas. • Identify potential sites that may be suitable for incentivized renewable energy projects
<p>2. Education & Outreach</p> <ul style="list-style-type: none"> • Provide educational material on energy conservation, fuel switching, and reduction practices. • Expand outreach for C-PACE financing and similar programs. • Encourage the development of a county-wide toolkit that facilitates sustainable practices among local organizations through resources, training, networking, incentives and/or performance tracking tools.
<p>3. Technical & Financial Assistance</p> <ul style="list-style-type: none"> • Provide technical assistance to businesses, organizations, and institutions to develop energy reduction goals, seek funding, etc. • Create a database of renewable energy resources, incentives, and tax credits, and connect residents and businesses to these resources. • Encourage municipalities to consider community choice aggregation and demand response programs. • Complete a county-wide EV plan. Identify appropriate locations for installation of additional Level 2 and Level 3 charging stations.
<p>4. Recognition Programs</p> <ul style="list-style-type: none"> • Recognize residents, and community and business leaders for their achievements in energy use reduction and sustainability. • Recognize businesses and organizations that achieve sustainable goals and objectives.
<p>5. Development & Assessment Tools</p> <ul style="list-style-type: none"> • Develop a tool that includes metrics and benchmarking to assist companies and organizations with their energy use goals. • Consider incorporating evaluations of increased electric energy demand with ongoing infrastructure maintenance and improvement programs.
<p>6. Environmental Restoration & Infrastructure</p> <ul style="list-style-type: none"> • Identify opportunity areas for eco restoration that could offset and sequester emissions from energy use. • Identify potential locations for battery storage facilities.

COMMUNITY-DRIVEN ACTION

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<p>1. Education & Resources for Institutions</p> <ul style="list-style-type: none"> • Implement a toolkit to public schools (including example School District Sustainability Plans, suggestions for actions/areas of opportunity, available local/state/federal grants to fund energy audits and other activities).
<p>2. Planning & Policy</p> <ul style="list-style-type: none"> • Encourage zoning and planning boards to require a certain coverage of solar panels above parking areas. • Identify targets for new development to connect with renewable energy sources, in line with New York State requirements for advancing zero emission construction in new buildings. • Incentivize large employers to develop robust sustainability plans with measurable outcomes. • Consider supporting diversification of energy generation and supply models county-wide. • Consider incentivizing geothermal HVAC systems county-wide. • Provide incentives to homeowners and businesses to convert to solar energy. • Consider supporting development of community thermal energy networks.
<p>3. Renewable Energy & Infrastructure</p> <ul style="list-style-type: none"> • Support shifting public buildings and schools to renewable energy sources. • Support wide-spread implementation of heat pumps in residential, commercial, and institutional properties. • Encourage the use of agrivoltaics on renewable energy sites. • Implement the installation of additional Level 2 and Level 3 charging stations, per findings in proposed county-wide EV plan. • Identify the gap between existing and projected needs for electrified heating systems and EV stations related to the county-wide energy grid.
<p>4. Consumer & Utility Engagement</p> <ul style="list-style-type: none"> • Support shift to electric small equipment and tools (leaf blowers, lawn mowers).

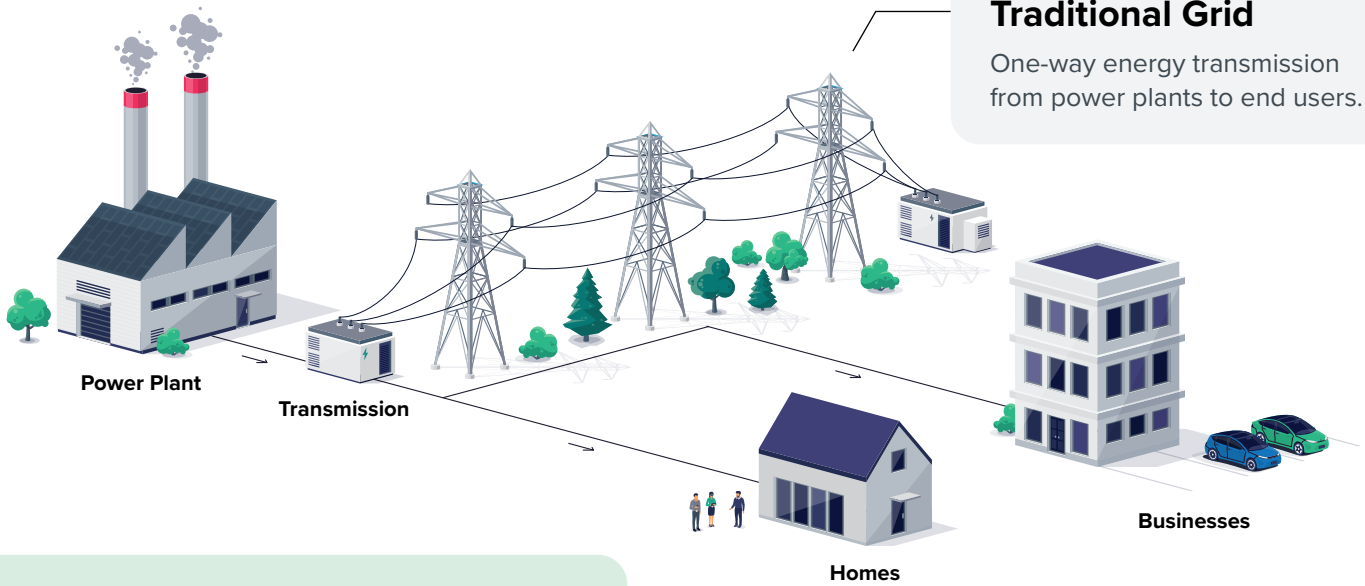
A closer look at...



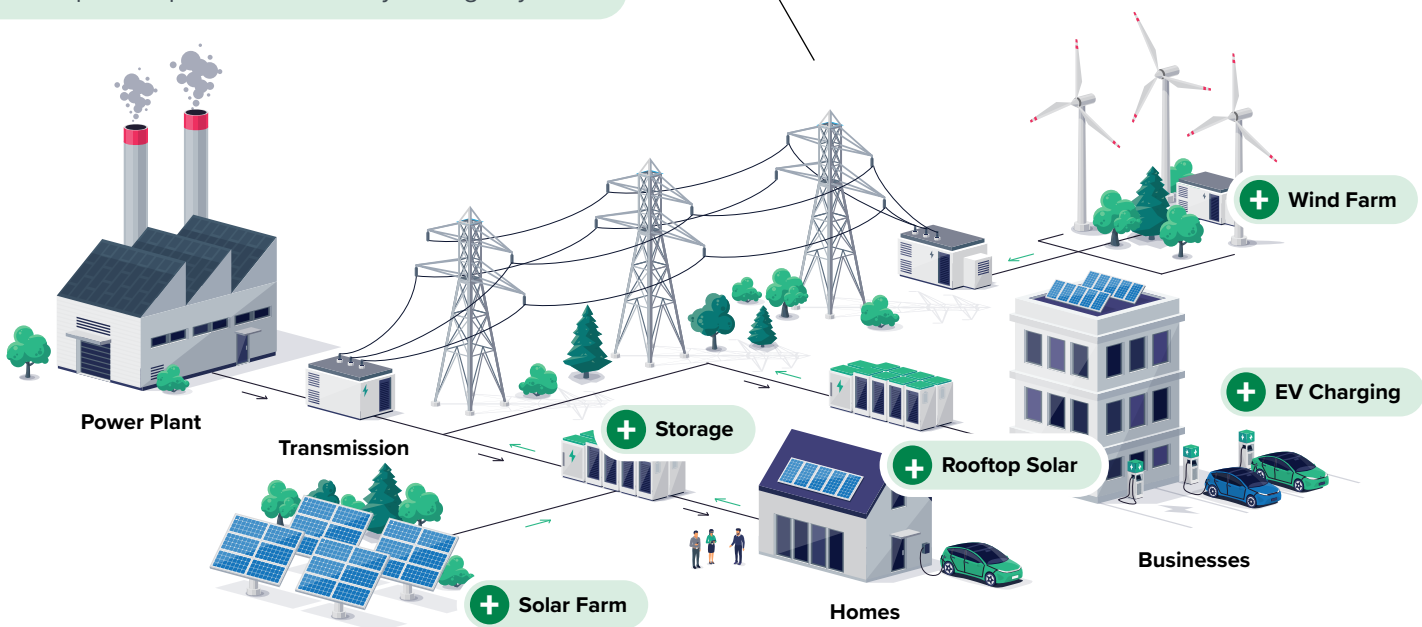
Decentralizing the Grid

Traditionally, our power grids have been built as centralized grids, with large power plants that produce electricity and deliver it to homes and businesses through a series of transformers and power lines. Traditional power plants often depend on non-renewable sources like fossil fuels and experience significant electricity loss during transmission. Decentralized grids help solve these problems by bringing power generation closer to where it is used. They facilitate the integration of renewable energy sources like solar and wind into the grid, use batteries to store power, and enable the feeding of excess energy back into the grid. These elements collectively contribute to a significant reduction in our carbon footprint.

Traditional Grid
One-way energy transmission from power plants to end users.



Decentralized Grid
Decentralized grids allow energy to flow both ways, from power plants to homes and businesses and back thanks to renewable technologies like rooftop solar panels and battery storage systems.

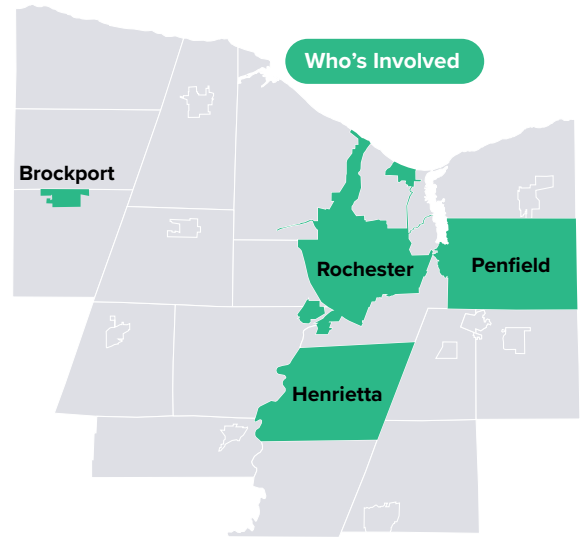




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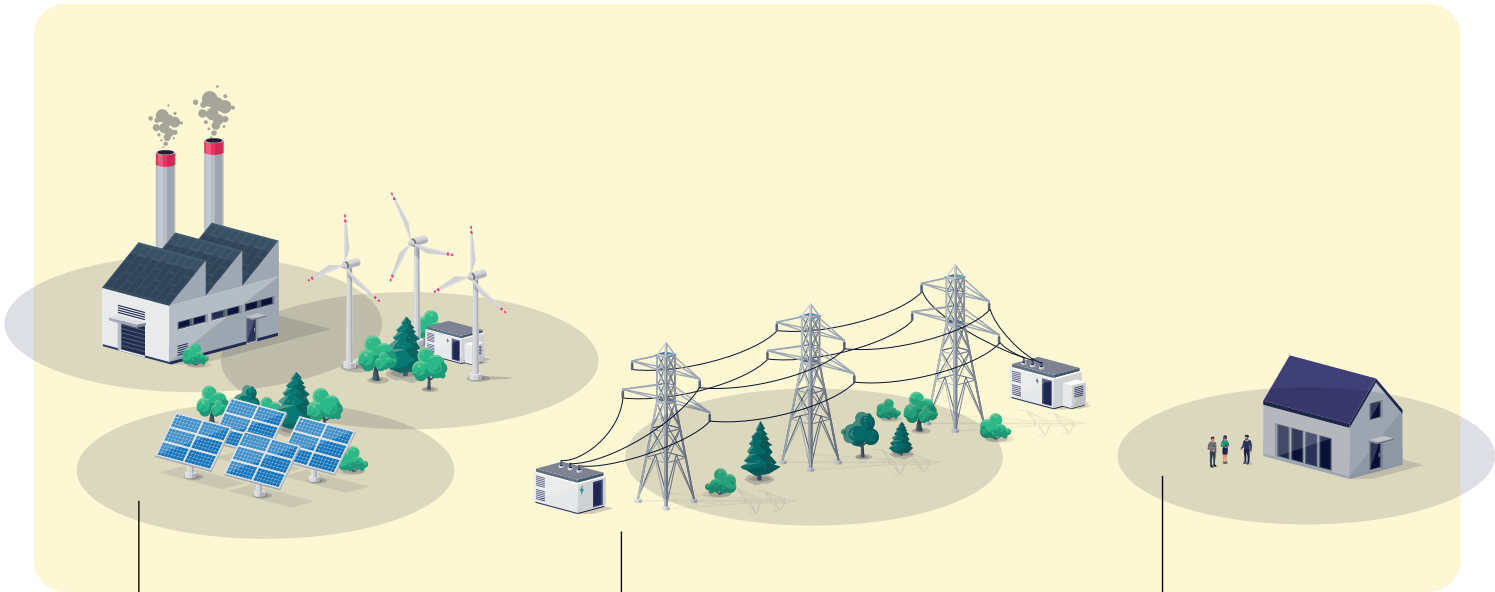
Community Choice Aggregation

Community Choice Aggregation (CCA) allows local municipalities choose where the energy comes from for their community. It's a program to purchase power in bulk for virtually all homes and small businesses within the participating jurisdiction. A CCA can allow whole communities to participate in the clean energy economy by ensuring that a greater percentage of electricity is coming from renewable sources. Because CCAs can purchase energy at wholesale prices, customers often see reduced rates. CCA participation is optional and customers will have the opportunity to opt out.



Want to know more?

Find out more about how CCAs work on the [EPA's website](#).



How it Works

Supply

Participating municipalities choose where they want to purchase electricity from, which may include renewable sources, like wind and solar, along with more traditional sources.

Delivery

RG&E and National Grid continue to deliver energy, maintain power lines, and respond to service outages using their existing utility networks.

Customer

Homeowners who have opted in to the CCA will receive energy from the CCA supply sources. Consumers oftentimes see savings because the CCA can purchase energy at wholesale rates.



What does this mean in New York State?

NYSERDA offers several resources with specific guidance for how CCAs operate in New York State.

2 BUILDINGS & HOUSING



- Includes commercial, industrial, and residential buildings we live and work in.
- Buildings vary in appearance, footprint, and density across rural, suburban, and urban areas.
- The types of buildings, their construction methods, and daily usage patterns impact the environment, energy consumption, and micro-climates.

Goals

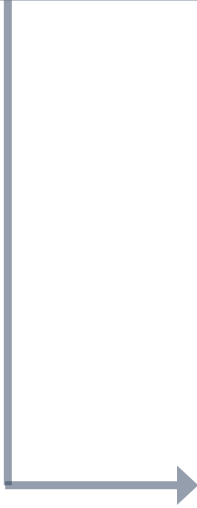
1. Consider existing development, redevelopment, and new development scenarios to reduce or eliminate GHG emissions.
2. Reduce energy use of buildings powered by fossil fuels, and transition to renewable energy sources where possible.
3. Implement green building infrastructure and renewable energy generation policies on new development and encourage the retrofitting of existing and redevelopment.

COUNTY ACTION

1. Urban Planning & Development
2. Workforce Development & Training
3. Educational Campaigns & Community Engagement

COMMUNITY ACTION

1. Land Use Regulations
2. Renewable Energy & Building Conversions
3. Energy Efficiency in Buildings





A closer look at...

Passive House Design

Passive House is one of several building systems, like LEED or Energy Star, that certify sustainable, energy efficient buildings. Passive House design techniques achieve high levels of energy efficiency by controlling elements of the indoor environment, such as temperature, indoor air quality, moisture levels, and the amount of sunlight that gets in. These design techniques reduce the building’s heating and cooling demands, significantly lower energy costs, and can cut carbon emissions by over 40%.



Local Spotlight

Midvale Commons, Perinton

A 76-unit affordable senior housing complex designed by SWBR to achieve Passive House “Plus” Certification.



High-Performance Windows

Triple-pane windows and well-insulated frames minimize heat transfer.



Airtight Building Envelope

Edges, corners, and connections are sealed to prevent conditioned air from escaping.



Image Source: SWBR



Heat-Recovery Ventilation

A continuous supply of fresh, filtered air provides healthy indoor air quality and a consistent temperature.



Continuous Insulation

Framing cavities are filled with high-performance insulation and rigid insulation is applied to the exterior to prevent heat transfer.



Reduced Thermal Bridging

Advanced framing and insulation techniques reduce energy loss through solid objects.



Want to know more?

Visit Phius's website (phius.org), the leading authority on Passive House design in the U.S., to learn more about Passive House design principles.

FOCUS AREA

COUNTY ACTION

2

BUILDINGS & HOUSING

<p>1. Urban Planning & Development</p> <ul style="list-style-type: none"> • Work with COMIDA (County of Monroe Industrial Development Agency) and MCIDC (Monroe County Industrial Development Corporation) to encourage redevelopment of areas targeted for infill that are within public transit or walkable neighborhoods. • Work with COMIDA to implement a scoring policy to encourage high density development/infill. • Develop a target use of renewable energy sources in new development, retrofits, and rehabilitation projects for projects with COMIDA/IDC support.
<p>2. Workforce Development & Training</p> <ul style="list-style-type: none"> • Provide workforce development services to connect community members with jobs in energy efficiency fields (i.e., online job board, training services). • Expand workforce training and education in relevant fields such as vocational programs and apprenticeship programs in skilled trades like Electricians, HVAC/R industries. • Provide support for contractors to complete NYSERDA (New York State Energy Research and Development Authority) paperwork on projects. • Provide support to increase contractor workforce with Building Performance Institute (BPI) certification.
<p>3. Educational Campaigns & Community Engagement</p> <ul style="list-style-type: none"> • Provide community-wide education on rebates and incentives related to grant funding for climate-related improvements. Partner with trusted contractors to educate customers on available rebates and incentives. • Consider supporting a county-wide educational campaign on the health benefits of housing upgrades and resources (i.e., Rochester Energy Efficiency and Weatherization program).

COMMUNITY-DRIVEN ACTION

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<p>1. Land Use Regulations</p> <ul style="list-style-type: none"> • Explore the benefits to municipalities of modifying zoning policies to allow multi-family units to be built on single-family lots and increasing mixed-use development zoned areas to create more walkable areas. Assist and incentivize municipalities willing to modify zoning. • Provide resources for municipal zoning codes to increase development density in targeted areas by re-evaluating and reducing minimum lot sizes, required setbacks, and parking requirements.
<p>2. Renewable Energy & Building Conversions</p> <ul style="list-style-type: none"> • Increase renewable energy use in municipal buildings, including conversions to heat-pumps and aiming for net-zero municipal buildings. • Incentivize residential renewable energy use (e.g., solar, wind) and electrification of homes.
<p>3. Energy Efficiency in Buildings</p> <ul style="list-style-type: none"> • Encourage the accommodation of historic building adaptations in local building and zoning codes to allow for opportunities to increase energy efficiency in historic preservation districts and leverage related funding programs. • Encourage municipalities to increase inspection frequency, thoroughness, and performance requirements of insulation and weatherizing practices in residential homes and apartment buildings. • Consider supporting benchmarking and disclosure programs to help renters and buyers identify energy efficient properties. • Encourage municipalities to share information about state weatherization and energy efficiency programs with local residents, organizations, and businesses. • Support local organizations to educate municipalities and other eligible organizations for green energy grant-funding and assist with grant applications.

3 TRANSPORTATION



- The different modes of transportation (driving, public transit, bicycling, walking) connect us to homes, jobs, businesses, and the environment.
- Transportation networks and infrastructure are required to support these varying modes of transport.
- The modes of transportation used, the infrastructure to support them, and the travel distances between destinations directly impact our carbon footprint and greenhouse gas emissions.

Goals

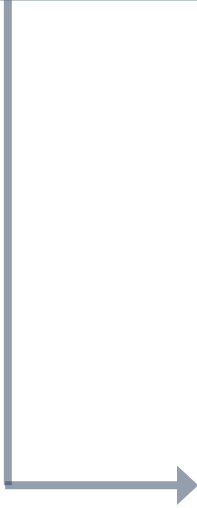
1. Increase connectivity surrounding high trip potential and population centers.
2. Reduce vehicle miles traveled.
3. Increase zero emission personal and fleet vehicles, equipment, and facilities.

COUNTY ACTION

1. Education & Awareness Campaigns
2. Active Transportation & Infrastructure Development
3. Facilities & Amenities for Transportation Modes
4. Electric & Alternative Transportation Incentives
5. Transportation Planning & Policy Development

COMMUNITY ACTION

1. Land Use Regulations
2. Alternative Transportation & Reduction of Car Dependence
3. Public Transit & Active Transportation Infrastructure
4. Sustainable Development Features



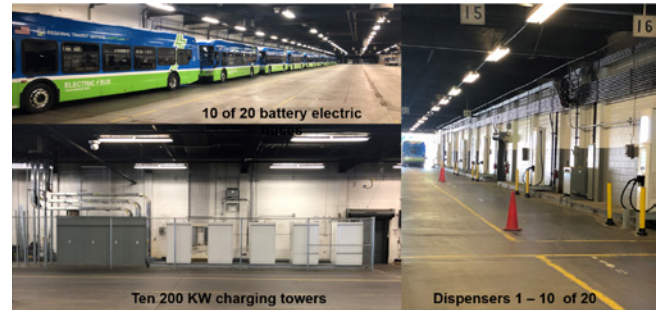


A closer look at...

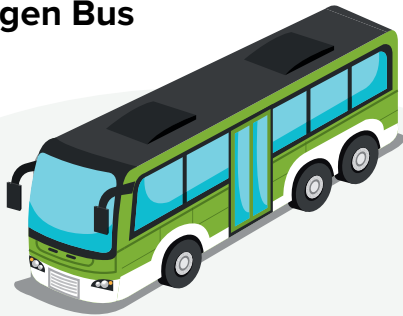
RTS's Green Fleet



The Rochester-Genesee Regional Transportation Authority (RGRTA) provides fixed-route, on-demand, paratransit and deviated fixed-route service to the Greater Rochester area, Monroe County and the seven surrounding counties. RGRTA is currently transitioning their fixed-route fleet to zero-emission and currently has 20 battery-electric buses in service. Given the significant operational challenges experienced with battery-electric buses in a cold-weather transit use case, RGRTA is pivoting to hydrogen fuel cell technology as a better zero-emission solution. RGRTA is installing a portable liquid hydrogen fueling station and will be putting 2 hydrogen fuel cell buses in service in 2024. The portable fueler will be able to support 10 to 15 buses until a permanent hydrogen fueling station can be built.



Hydrogen Bus



Annual Emissions
0 metric tons CO₂



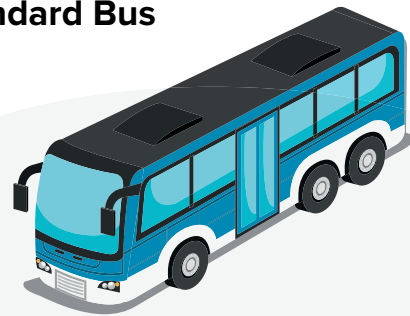
Fuel Economy
7 to 9 mpg

Range
300 miles



Maintenance Costs
\$225,000 per year

Standard Bus



Annual Emissions
22 metric tons CO₂

Fuel Economy
5 to 6 mpg



Range
500 miles

Maintenance Costs
\$300,000 per year



Want to know more?

Learn more about hydrogen vehicles on the EPA's website at epa.gov/greenvehicles/hydrogen-transportation.

FOCUS AREA

COUNTY ACTION

3

TRANSPORTATION

1. Education & Awareness Campaign
<ul style="list-style-type: none"> Invest in an educational campaign to educate all road users on best practices for using alternative modes of transportation.
2. Active Transportation & Infrastructure Department
<ul style="list-style-type: none"> Implement the Monroe County Active Transportation Plan. Increase bike infrastructure county-wide and improve the connectivity between bike infrastructure networks. Work with municipalities to fill gaps in sidewalks on County roads with support of the County DOT Municipal Sidewalk program. Further develop online bike and trail maps across the county that link both on-road and off-road facilities.
3. Facilities & Amenities for Transportation Modes
<ul style="list-style-type: none"> Encourage bike storage and facilities at major employment centers that are connected to bike networks. Encourage state and local jurisdictions to replace traffic lights with roundabouts where feasible to reduce time idling and improve traffic safety.
4. Electric & Alternative Transportation Initiatives
<ul style="list-style-type: none"> Provide incentives to increase electric bikes and scooters. Provide incentives to increase private EV ownership through local, state, federal or private grant opportunities. Support the development of electric car sharing programs.
5. Transportation Planning & Policy Development
<ul style="list-style-type: none"> Continue to implement Monroe County Complete Streets policy to reduce traffic congestion. Advocate for greater state and federal funding for public transit and multi-modal transportation infrastructure.

COMMUNITY-DRIVEN ACTION

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1. Land Use Regulations
<ul style="list-style-type: none">• Provide resources to municipalities to incentivize higher density development to promote walkability and development along existing public transit routes.• Implement COMIDA policy to incentivize higher density development and development along existing public transit routes to enhance walkability and accessibility.
2. Alternative Transportation & Reduction of Car Dependence
<ul style="list-style-type: none">• Encourage large employers to reduce car dependence through hybrid work environments, shuttle services to employees outside of public transit services, and other means.• Encourage a reduction of single passenger personal vehicle trips under 5 minutes through an educational campaign and consider supporting a county-wide educational campaign on the health benefits of using active transportation.• Reinforce road user safety education, especially to provide consideration to alternative transportation users.
3. Public Transit & Active Transportation Infrastructure
<ul style="list-style-type: none">• Improve maintenance of bike and pedestrian facilities within the county-wide network during all seasons, including plowing bike lanes during winter months.• Expand resources for public transit systems to increase frequency of services, increase awareness of locations and schedule, and reach of public transit county-wide.
4. Sustainable Development Features
<ul style="list-style-type: none">• Incentivize high density and large developments to provide EV charging stations to residents and businesses.

4 LAND & WATER RESOURCES



- Monroe County has a wealth of open space and water resources (parks, streams, rivers, canals, Lake Ontario).
- There is a direct link between water quality in Monroe County and the Great Lakes water system.
- Water resources, open spaces, and trees help regulate stormwater, wastewater, and GHG emissions.
- These natural resources are vulnerable to impacts from development and human intervention.

Goals

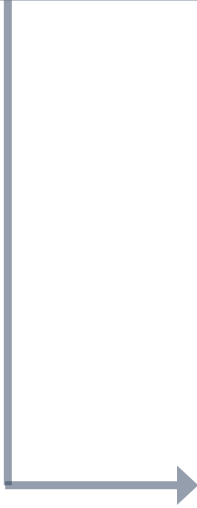
1. Protect and conserve existing open spaces, agricultural lands, and natural areas.
2. Improve access to and awareness of local natural resources at both a micro and macro scale to build environmental stewardship community-wide.
3. Mitigate and reduce heat island impacts from the built environment.

COUNTY ACTION

1. Policy Guidance & Support for Municipalities
2. Environmental Conservation & Land Management
3. Biodiversity & Habitat Restoration

COMMUNITY ACTION

1. Green Infrastructure & Land Use
2. Water Management & Conservation
3. Biodiversity & Habitat Connectivity
4. Community Engagement & Education





A closer look at...

Expanding the Tree Canopy

Trees in Monroe County provide significant environmental benefits, including carbon sequestration, removal of air pollutants, and avoided runoff. Planting more trees will help expand Monroe County’s tree canopy and increase the benefits it can provide. The chart below looks at how the tree canopy might change in the future and what this will mean for Monroe County’s environment.



Today

Almost one-third of Monroe County’s land area is covered by trees. Every year, this tree canopy provides the following environmental benefits:



approximately **8 million trees**



450,000 tons of CO₂ sequestered



3,500 tons of air pollutants removed



800 mil. gallons of avoided runoff



\$41 million in savings from CO₂ sequestration, air pollution removal, and avoided runoff



Tomorrow?

If 1 out of every 2 single- or two-family homes in Monroe County planted a tree in the next 5 years, tree canopy benefits could increase by:



+119,000 trees



+6,400 tons of CO₂ sequestered



+19 tons of air pollutants removed



+14 mil. gallons of avoided runoff



\$553,000 in savings from CO₂ sequestration, air pollution removal, and avoided runoff



USFS Grant

Monroe County received a U.S. Forest Service (USFS) grant to plant 8,645 trees over the next 2 years. These new trees will provide the following benefits:



+8,645 trees



+465 tons of CO₂ sequestered



+1.4 tons of air pollutants removed



+1 mil. gallons of avoided runoff



+\$40,000 in savings from CO₂ sequestration, air pollution removal, and avoided runoff



Try it for yourself!

The data above were generated by iTree, a free tool from USFS that estimates tree canopies and tree benefits. Visit itreetools.org to try it out!

FOCUS AREA

COUNTY ACTION

4

LAND & WATER RESOURCES

<p>1. Policy Guidance & Support for Municipalities</p> <ul style="list-style-type: none"> • Provide guidance to municipalities on climate smart development practices and land use decisions through the development of a green code or promotion of existing regional and state codes. • Provide municipalities guidance/support to offer local incentives for green infrastructure like fee discounts, development incentives, rebates and installation financing, and awards and recognition programs. • Provide resources to municipalities to incentivize infill development in areas identified for higher density and/or near transit stops.
<p>2. Environmental Conservation & Land Management</p> <ul style="list-style-type: none"> • Identify natural ecosystems and open space and opportunities for protection through planning and policies. • Support programs to increase tree cover, establish tree canopy goals across the County, and consider creating a tree fund, prioritizing planting trees in vulnerable areas. Consider supporting an expansion of the City of Rochester’s Reforest Rochester Fund. • Support programs to conserve more land in collaboration with land trust organizations and to conserve more wooded lots.
<p>3. Biodiversity & Habitat Restoration</p> <ul style="list-style-type: none"> • Use the Monroe County’s Environmental Management Council (EMC) provide recommendations for increasing biodiversity and protecting pollinators and birds. • Support local groups and organizations involved with habitat restoration and provide guidance on educational material and signage at restoration sites.

COMMUNITY-DRIVEN ACTION

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<p>1. Green Infrastructure & Land Use</p> <ul style="list-style-type: none"> • Increase green infrastructure to reduce stormwater runoff from large impervious spaces county-wide. • Encourage local zoning laws and local practices to incentivize no-mow or low-mow lawns and native plantings. • Provide resources to municipalities to encourage farmland protection in accordance with the County’s agricultural land use planning efforts. • Identify potential green space expansion, areas to be preserved as green space county-wide, and opportunities for higher density development in conjunction with Monroe County Comprehensive Plan (or other established planning principles). • Consider developing brownfields for clean energy generation.
<p>2. Water Management & Conservation</p> <ul style="list-style-type: none"> • Identify grants and educational resources for homeowners to adopt rainwater collection and graywater systems.
<p>3. Biodiversity & Habitat Connectivity</p> <ul style="list-style-type: none"> • Connect habitat areas, open spaces, and native ecosystems. Encourage maintenance based on best practices. • Provide education on the conversion from lawn space to native plantings on both public and private property.
<p>4. Community Engagement & Education</p> <ul style="list-style-type: none"> • Identify areas with limited food access, and incentivize accessible, full-service grocery stores locating in those areas to increase walkability to local food sources. • Create a youth and community program for volunteer maintenance of local green spaces.



GREEN INFRASTRUCTURE

Green infrastructure refers to a network of natural and semi-natural spaces and systems that deliver a wide array of benefits to urban areas. This approach uses vegetation, soils, and natural processes to manage water and create healthier urban environments. Key components include:

- Rain gardens
- Green roofs
- Permeable pavements
- Urban tree canopies

POTENTIAL BENEFITS

- **Enhances Biodiversity:** Supports a variety of flora and fauna.
- **Improves Water Quality:** Filters pollutants from runoff.
- **Reduces Urban Heat:** Lowers temperatures in urban areas.
- **Boosts Mental Health:** Green spaces contribute to overall well-being.



A closer look at...

Climate Resilient Farming

New York State’s Climate Resilient Farming (CRF) Program provides grant funds to increase the resiliency of farms to flooding, drought, and other impacts of climate change. Grant funds can also be used to reduce greenhouse gas emissions from farms and mitigate the impact of agricultural operations on climate change. The Monroe County Soil and Water District has implemented a number of projects with CRF funding. Several local success stories are listed below.



Local Spotlight Irrigation System

Grant funds were used to install 2,200 feet of irrigation pipe on a dairy farm. This irrigation system will help the farm deal with increasingly common drought conditions brought on by climate change.



Local Spotlight Irrigation Reservoir

Grant funds were used to create a 0.6-acre irrigation reservoir on a dairy farm. The reservoir can store over 500,000 gallons of water, which can be used to irrigate the farm’s alfalfa fields during periods of drought.



Local Spotlight Biomass Planting

Grant funds were used to convert 60 acres of farmland to hay production. The hay field is planted with oats and alfalfa. Converting this land from cash crops to permanent crop makes it easier for carbon to be sequestered in the soil over time.



Future Opportunity for Funding Cover Cropping

Cover crops, like legumes, cereals, and grasses, are grown to enhance soil health and water quality between cash-crop plantings. They increase resiliency by improving water infiltration, sequestering carbon, and reducing erosion among numerous other benefits.



Want to know more?

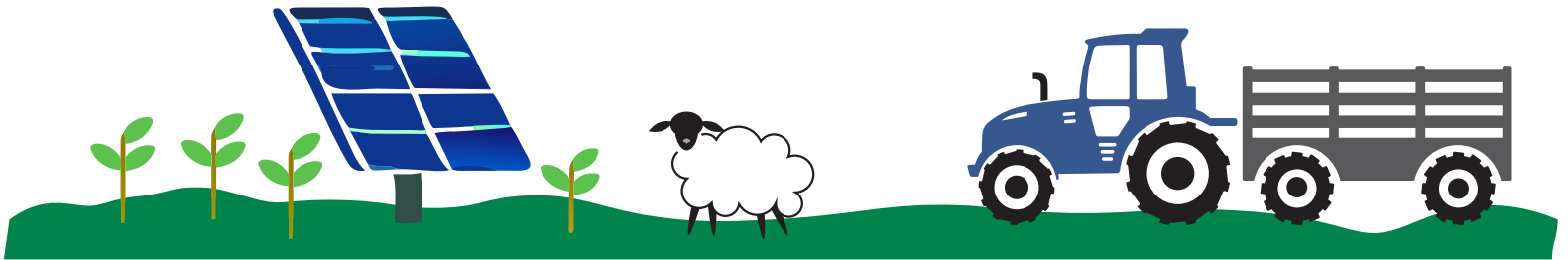
Interested in the CRF Program? Visit agriculture.ny.gov/soil-and-water/climate-resilient-farming for more information.



A closer look at...

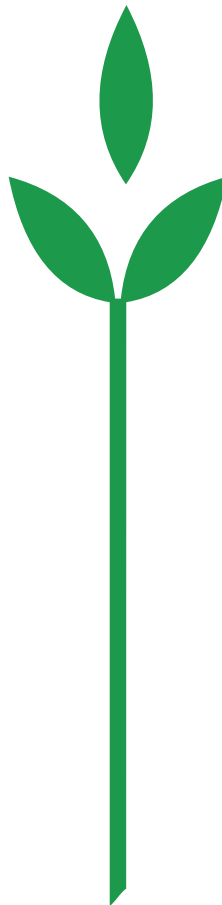
Agrivoltaics

Agrivoltaics, the innovative practice of co-locating agriculture and solar energy production, represents a promising intersection of renewable energy and sustainable agriculture. While its potential benefits are increasingly recognized, such as land use efficiency, crop protection, and energy independence, agrivoltaics remains an evolving industry that requires further development and refinement. In New York State, where agricultural lands are valuable and renewable energy goals are ambitious, agrivoltaics holds particular promise. However, challenges such as land competition, aesthetic concerns, and the need for tailored regulatory frameworks highlight the importance of continued research, investment, and collaboration to unlock the full potential of agrivoltaics in the state.



Pros

- **Climate Resilience:** Solar panels mitigate urban heat island effects and protect crops from extreme weather, enhancing agricultural resilience.
- **Community Benefits:** Agrivoltaic projects foster local economic development, job creation, and community resilience.
- **Dual Land Use:** Maximizes agricultural land productivity by co-locating with renewable energy generation.
- **Water Conservation:** Solar panels reduce soil evaporation, potentially saving water in regions with limited availability.
- **Income Diversification:** Farmers gain additional revenue streams through solar leasing, stabilizing income against fluctuating agricultural prices.
- **Energy Independence:** Increased solar energy production reduces fossil fuel dependency, promoting local and state energy autonomy.



Cons

- **Initial Investment:** High infrastructure costs pose barriers to entry for farmers and investors in agrivoltaic systems.
- **Land Competition:** Competition between agriculture and solar energy raises land prices and displaces traditional farming practices.
- **Aesthetic Concerns:** Some communities oppose solar installations due to perceived visual impact, creating regulatory hurdles.
- **Maintenance Challenges:** Regular maintenance of solar panels may be challenging and expensive for farmers or small-scale operations.
- **Biodiversity Impact:** Improperly managed solar installations can disrupt local ecosystems and wildlife habitats.
- **Crop Compatibility:** Not all crops are suitable for cultivation under solar panels, limiting agricultural integration in agrivoltaic systems.



Want to know more?

Visit <https://www.nyserda.ny.gov/PutEnergyToWork/Industry-Energy-Solutions/Agriculture/Agrivoltaics> for more information.

5 SUSTAINABLE MATERIALS MANAGEMENT



- Products have a life cycle consisting of production, transportation, use, and ultimately disposal.
- The impact of each phase of this cycle may vary from the amount of resources used to produce it, emissions created during production, transportation and use, and the amount of waste created upon disposal.
- Activities that lessen impacts include reducing, reusing, recycling, and composting materials.

Goals

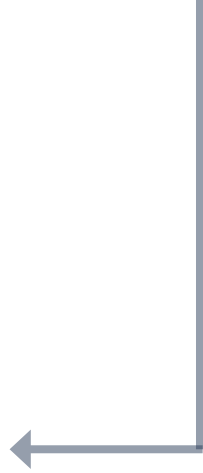
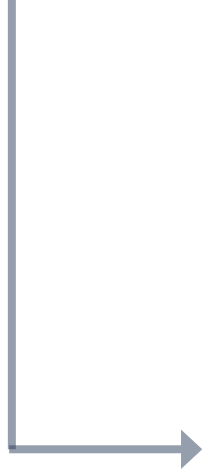
1. Support, connect, and enhance access and awareness of diverting waste from landfills by reuse, recycling, or waste reduction.
2. Increase innovative re-purposing of waste byproducts and consider opportunities to harvest waste products for energy.
3. Waste reduction and minimization, such as composting and organics recycling programs.

COUNTY ACTION

1. Waste Reduction & Diversion Programs
2. Recycling Enhancement & Education
3. Sustainable Procurement Policies
4. Community Engagement & Reuse Initiatives
6. Restaurant Waste Policies

COMMUNITY ACTION

1. Business Practices & Corporate Responsibility
2. Infrastructure & Resource Efficiency
3. Community & Consumer Engagement





A closer look at...

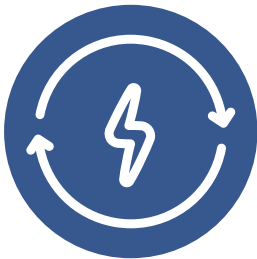
WM's Sustainability Report

WM's 2023 Sustainability Report offers a insight into the company's dedicated efforts towards environmental stewardship and sustainability. The "Energy is Renewable" chapter underscores WM's strategic initiatives to innovate in renewable energy production, significantly reduce greenhouse gas emissions, and transition towards a more sustainable operational model. Through leveraging advanced technologies for waste-to-energy conversion, committing to ambitious emissions reduction targets, and emphasizing the recycling and re-purposing of materials, WM not only addresses its environmental impact but also sets a precedent for responsible waste management practices. The report highlights the following key achievements in renewable energy sourcing:

WM'S IMPACT



Over \$2 billion in growth investments in recycling and renewable energy infrastructure from 2022 through 2026 to further sustainability goals.



WM's services in 2022 potentially avoided more than three times the GHG emissions generated by operations, also creating four times more renewable electricity than used.



WM operates the Monroe County Ecopark, Mill Seat, and High Acres.

Innovation for Climate Progress

- Leveraging advanced technologies to convert waste decomposition in energy, powering communities and reducing carbon footprint
- Achieved a 10% reduction in Scope 1 and 2 GHG emissions year-over-year.
- Utilizing landfill gas as a renewable energy source, thus generating biogas and renewable energy.

Emissions Reductions & Targets

- Aims to reduce absolute Scope 1 and 2 GHG emissions by 42% by 2031 from a 2021 baseline.
- Reduced landfill emissions by 10% from 2021 due to upgrades in gas collection and control systems.
- Increased beneficial use of captured landfill gas to 45% in 2022, generating significant renewable energy.
- Transitioned over 60% of WM's collection fleet to compressed natural gas vehicles by 2022.

Climate Impacts & Strategy

- WM is addressing climate change by setting science-based targets for GHG emissions reduction and offering services like recycling and renewable energy generation to help customers reduce their carbon footprint.
- In 2022, direct Scope 1 and 2 GHG emissions were reduced by 10% over a 2021 baseline, with a significant portion of landfill gas captured for beneficial use.

Landfill Gas & Emissions Management

- Landfills are a major focus for emissions reduction efforts, contributing over 90% of WM's direct emissions.
- Major steps were taken in 2022 to reduce landfill gas emissions, including enhanced gas collection and control systems.
- Increased the amount of landfill gas captured for beneficial use to 45% and plans to increase this to 65% by 2026.

Fleet Transition to Alternative Fuels

- Over a decade, WM has transitioned its fleet to use alternative fuels, significantly reducing emissions.
- Over 60% of the fleet has been converted to alternative fuel vehicles, including compressed natural gas vehicles, with a plan to increase this further.

Electricity Usage & Efficiency

- Electricity use constitutes about 1% of WM's total carbon footprint, with efforts to increase energy efficiency and source renewable electricity.
- In 2022, 42% of WM's electricity came from renewable sources.



Want to know more?

Visit <https://drive.google.com/file/d/1ktbW-3bvrhqdd57skQi2QBzkjPoTLuqp/view> for the full report.

FOCUS AREA

COUNTY ACTION

5

SUSTAINABLE MATERIALS MANAGEMENT

<p>1. Waste Reduction and Diversion Programs</p> <ul style="list-style-type: none"> • Complete a county-wide organic waste diversion plan to reduce landfill disposal. • Explore deconstruction opportunities for salvaging construction and demolition (C&D) materials. • Implement recommendations of the forthcoming Organics Management Plan. • Provide educational material on the benefits of reducing and diverting organic waste.
<p>2. Recycling Enhancement & Education</p> <ul style="list-style-type: none"> • Continue efforts to increase awareness of recycling processes county-wide and educate community members on how to reduce contamination. • Explore opportunities to expand recycling programs through WM/Monroe County Ecopark. • Consider expanding education campaign about WM/the Monroe County Ecopark and the services it provides to the public.
<p>3. Sustainable Procurement Policies</p> <ul style="list-style-type: none"> • Explore green procurement policies and programs and offer local municipalities opportunities to participate. • Explore more circular solutions (such as a virtual material marketplace) for appliances, textiles, building materials, electronics, furniture, and office supplies
<p>4. Community Engagement & Reuse Initiatives</p> <ul style="list-style-type: none"> • Encourage Recycling Advisory Committee (RAC) to further explore reuse education and opportunities in the community. • Support and promote repair cafes.
<p>5. Restaurant Waste Policies</p> <ul style="list-style-type: none"> • Encourage restaurants to serve on reusable dishes, when practicable. • Encourage restaurants to accept customers' clean containers for take-out. • Support such efforts by sharing information, case studies, and resources available.

COMMUNITY-DRIVEN ACTION

NOTE: The following is a summary of potential actions that may be initiated by County stakeholders with an interest in furthering the goals and strategies of this Community-wide Climate Action Plan. For some actions, the County may be a partner in implementation through supportive measures such as assistance securing funding, serving as a coordinator or connector of stakeholders, and/or providing informational resources and guidance, as appropriate.

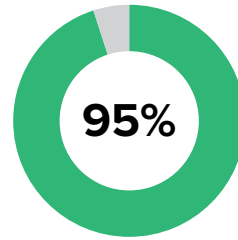
1. Business Practices & Corporate Responsibility
<ul style="list-style-type: none">• Incentivize increased usage of sustainable packaging.
<ul style="list-style-type: none">• Encourage businesses to track waste, energy, and water data and recognize/celebrate those achieving waste reduction/diversion goals.
<ul style="list-style-type: none">• Develop partnerships with municipalities and schools and provide technical assistance to businesses to support pilot programs on organics management/waste reduction.
2. Infrastructure & Resource Efficiency
<ul style="list-style-type: none">• Identify grant opportunities for electrification of refuse fleets and the use of more efficient routes.
<ul style="list-style-type: none">• Consider opportunities to provide services to assist in the reduction and diversion of organic waste and/or collaborate with other agencies that may already be operating.
3. Community & Consumer Engagement
<ul style="list-style-type: none">• Support community groups with their waste reduction goals.
<ul style="list-style-type: none">• Educate and encourage consumers and businesses to use reusable products, like refillable containers, the reuse or up-cycling of used goods, goods repair, etc.
<ul style="list-style-type: none">• Support of food donation network to increase food security and reduce food waste.



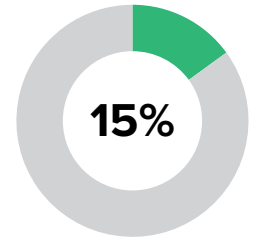
A closer look at...

Textile Recycling

The textile industry is a major contributor to global pollution and waste. Textile production accounts for 20% of global wastewater and 8% of greenhouse gas emissions, and textile waste makes up 6% of global waste generation each year. In the U.S., the average American throws away approximately 82 pounds of clothes per year. Each of these pieces of clothing can take up to 200-plus years to decompose in a landfill! Reusing and recycling textiles can help promote sustainability in the textile industry. Re-sellers like Goodwill sell donated clothing to keep it out of landfills. Textiles that aren't resold can be recycled and turned into other goods like cleaning rags and home insulation.



95% of textiles can be recycled



but only 15% are actually recycled



Local Spotlight

Goodwill of the Finger Lakes



Image Source: Goodwill



Shirts

Recycled into cleaning rags



Denim

Recycled into home insulation



Socks

Recycled into pillow stuffing



Shoe Soles

Recycled into paving material



Want to know more?

Learn more about the environmental issues caused by textile waste by [clicking here](#).



A closer look at...

Food Scraps Collection Pilot Program

What is Organics Recycling?

Organics is a general term that refers to food waste (food scraps, inedible items like eggs shells, fruit/vegetable peels, coffee grounds and more) and yard waste (leaves, grass/plant clippings, and more). This discussion specifically addresses food waste management, a subset of the broader organics category, which also includes other substantial volumes like biosolids.

- Rochester’s Community-wide Climate Action Plan recommends the implementation of an organics collection program to reduce the amount of waste sent to landfills and, as a result, reduce landfill GHG emissions.
- Compost produced from the organics recycling program is a useful end-product that can improve the quality of soil on city and residential properties and promote the expansion of flower and vegetable gardens that will benefit the community as well as wildlife.
- Adding compost to soil reduces the need for chemical fertilizers which can be expensive and can pollute our water bodies or harm wildlife.
- By collecting and composting organics, the City can divert more waste from landfills, reducing its landfill disposal costs.

Goals of the Monroe County Food Scraps Recycling Pilot Program

- Increase food waste diversion at County-owned facilities
- Divert food waste from landfill disposal
- Develop a working model for residential food scraps collection with a County/municipal partnership that can be easily replicated
- Provide proof of concept and identify solutions for implementing food waste diversion programs
- Data collected used in development of Organics Management Plan

Program Participation

Cumulative Data as of February 19th, 2024:



2,725 recorded drop-offs



435 Total Individual Users



Most drop-offs on a single day (37):
Saturday, November 4th, 2023



Pounds Diverted:
Based on September through January Invoices
67,440 POUNDS

FOOD SCRAPS RECYCLING

Please scan the QR code each time you drop off scraps to help us track our progress!

ACCEPTABLE

- Meat/Fish/Dairy
- Fruit/Vegetables
- Shells/Bones
- Pasta/Rice
- Eggshells/Nutshells
- Bread/Grains
- Leftovers
- Coffee Grounds/Fibers - **NO K CUPS**
- Tea Bags
- Soiled Paper Bags
- Kitchen Paper Towels
- Paper Napkins
- Non-coated Paper Plates
- Approved Compostable Containers
- Plants/Flowers
- Jack-O-Lanterns

NOT ACCEPTABLE

- Plastic Bags
- Plastic Film/Wrap
- Plastic-Coated Food Containers (i.e. Milk Cartons, Ice Cream Containers)
- Styrofoam
- Cups (Any Type)
- Glass
- Metal
- Grease/Liquids
- Pet Waste
- Diapers
- K Cups
- Soil/Rocks
- Stumps/Branches
- Lumber/Fencing
- Yard Waste

www.townofpittsford.org/food-scraps-recycling



Want to know more?

Interested in the CRF Program? Visit www.townofpittsford.org/food-scraps-recycling for more information.

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6 PARTNERSHIPS, EDUCATION & ECONOMY

- Our quality of life has always been linked to nurturing existing partnerships and fostering new ones.
- Our success in reducing individual and collective climate impacts will be directly related to understanding what initiatives have or are taking place and opportunities for social, educational, and economic sector partnerships for implementation.

Goals

1. Identify and foster connections between private and public organizations, local and county governments, and regional initiatives.
2. Increase awareness and access to online platforms, tools, and networks to leverage partnerships between these groups.



FOCUS AREA

COUNTY ACTION

6

**PARTNERSHIPS,
EDUCATION &
ECONOMY**

1. Community Engagement & Forums

- Support county-wide community campaigns in partnership with existing community groups working on commercial and residential building and vehicle electrification, solar, and other forms of clean energy.

2. Business Engagement & Support

- Develop a Climate Action Toolkit to provide a “roadmap for success” for businesses and organizations, guiding them in implementing effective sustainability strategies.

3. Educational Development

- Develop educational materials about the health impacts associated with greenhouse gases and climate change.

COMMUNITY-DRIVEN ACTION

NOTE: The following is a summary of potential actions that may be initiated by County stakeholders with an interest in furthering the goals and strategies of this Community-wide Climate Action Plan. For some actions, the County may be a partner in implementation through supportive measures such as assistance securing funding, serving as a coordinator or connector of stakeholders, and/or providing informational resources and guidance, as appropriate.

<p>1. Partnerships & Collaboration</p> <ul style="list-style-type: none"> • Foster partnerships with local educational institutions and industries to innovate technologies and siting for renewable energy projects that preserve open space and productive agricultural land. • Foster partnerships with educational institutions and industry leaders that have training programs to support and attract a labor force skilled in green technologies.
<p>2. Economic Development & Business Support</p> <ul style="list-style-type: none"> • Identify, support, and protect local economic drivers such as outdoor tourism, recreational assets, and agriculture. • Work with economic development agencies to highlight available programs and resources to support businesses and create jobs related to addressing climate change. • Establish a regional Sustainable Business Roundtable to help guide and facilitate the implementation of sustainable practices in the business community.
<p>3. Community Engagement & Environmental Stewardship</p> <ul style="list-style-type: none"> • Work with and support local organizations, schools, and employers to plant trees, preserve mature trees, and identify renewable projects. • Support community organizations serving underrepresented populations within the county to assist with the accessibility of affordable clean energy and energy efficiency improvements in disadvantaged communities through informational and funding resources. • Encourage local agencies to collaborate to identify climate-vulnerable populations and develop programs to address their needs.
<p>4. Educational & Informational Resources</p> <ul style="list-style-type: none"> • Encourage municipal officials, residents, and commercial entities to explore renewable energy options such as battery storage and load shifting. • Provide an educational platform advancing regenerative economics.



WESTERN NEW YORK SUSTAINABLE BUSINESS ROUNDTABLE (SBR)

The Western New York SBR is a dynamic network of forward-thinking businesses committed to promoting environmentally and economically sustainable business practices. Proudly serving the Western New York area, we bring together organizations from all sectors to exchange ideas, support, and foster partnerships.

MISSION: The mission of SBR is to foster collaboration that enables our member businesses to create, build and act on sustainability goals, grow prosperity, and promote healthy communities.

MORE INFO >> www.wnysustainablebusiness.org/about-us



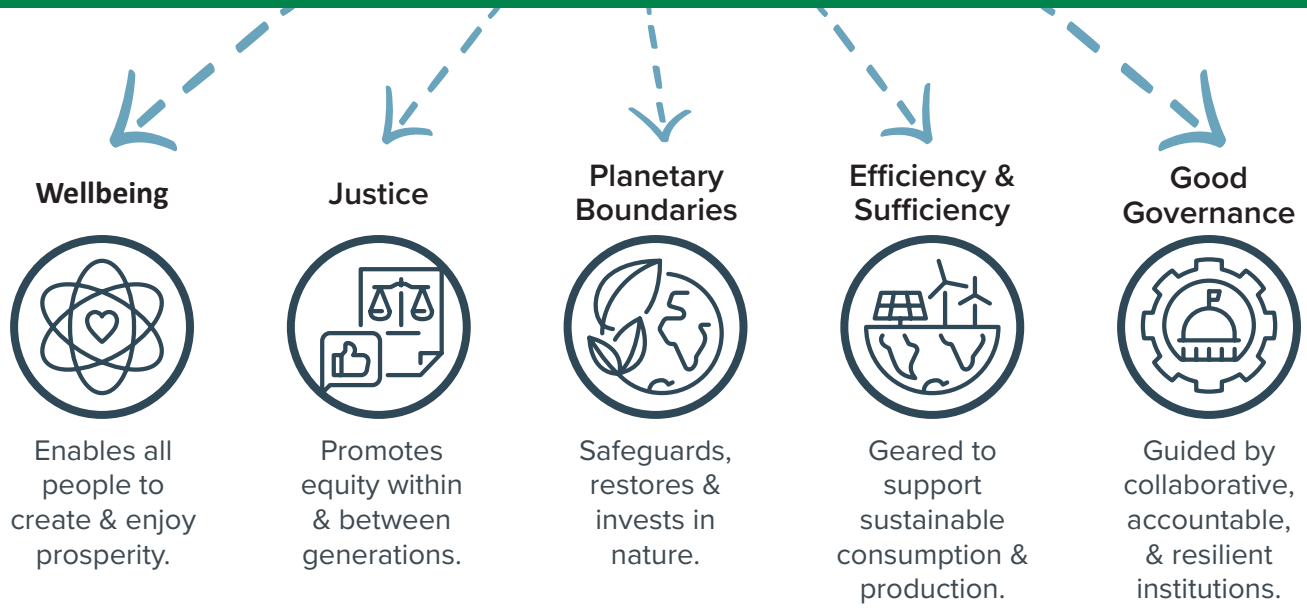
A closer look at...

Regenerative Economy

A regenerative economy is one that is low carbon, resource-efficient, and socially inclusive. In a green economy, both public and private investments focus on activities, infrastructure, and assets that lead to lower carbon emissions and pollution, improved energy and resource efficiency, and the protection of biodiversity and ecosystem services.

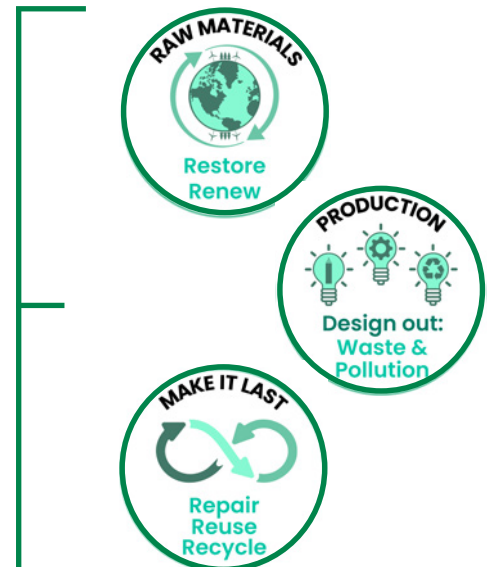


5 PRINCIPLES OF A REGENERATIVE ECONOMY



METHODS OF IMPLEMENTATION

- 01** Transition from mineral-dependent processes.
- 02** Divest from fossil fuels and prioritize renewable energy sources.
- 03** Rethink production, consumption, and resource management with environmental sustainability at the forefront.
- 04** Implement waste reduction strategies during production.
- 05** Offset fossil fuel impacts with carbon sequestration.



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MAY 2024
