

SPRING 2022

The Genesee-FLX Climate Action Strategy



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THE GENESEE-FLX CLIMATE COLLECTIVE

AN INITIATIVE OF



Climate Solutions Accelerator

of the Genesee-Finger Lakes Region

A Message from the Genesee-FLX Climate Collective Co-chairs

Dear Members of the Genesee-Finger Lakes Community,

We are truly grateful to everyone who contributed their time and talent to developing the Genesee-FLX Climate Action Strategy - whether providing input on your vision for a thriving region on a healthy planet, serving on the steering committee, reviewing quantitative models and reports, assessing the feasibility of mitigation measures, or inviting us to your neighborhood or place of business to demonstrate climate solutions at work. This strategy would not be possible without you. We also hope that many more will see themselves in the future put forth here, and find an area of interest, a community, or a solution that inspires them to take action.

What follows, in the Genesee-FLX Climate Action Strategy, is not a prescription for regional action over the next 25 years that guarantees we reach carbon neutrality. To think that we could, or should, develop such an edict for the entire region would be foolish in light of the dramatically shifting political, technological, and economic landscape shaping climate action. Rather, what follows is a framework for action that aims to build the capacity of our community to navigate these impending changes, while capitalizing on existing assets and remaining rooted in our shared community values.

The Genesee-FLX Climate Action Strategy is, therefore, also an invitation for individuals, organizations, and municipalities to become active participants in co-creating a regenerative economy and building resilient communities capable of tackling climate challenges. In this sense, addressing climate change is not only about reducing greenhouse gas emissions. It is about putting climate solutions to work for our community - by maximizing the co-benefits of taking climate action to address other areas of community concern. If we work collaboratively, the Genesee-Finger Lakes can be a leader in the state's transition to a clean energy economy and can reap the economic, environmental, and social benefits associated with climate solutions.

The time is now for climate solutions. Join us today by taking the organizational or individual pledge for climate action. The possibilities for participation are nearly endless, as are the possibilities for building a thriving region on a healthy planet. We look forward to working with you to accomplish this critical goal.

Sincerely,
Simeon Banister and Jan Nyrop



SIMEON BANISTER



JAN NYROP

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Executive Summary

The Intergovernmental Panel on Climate Change's (IPCC) most recent report (Feb 2022) states that the science is unequivocal - climate change is a grave threat to the health of people and planet - requiring ambitious, accelerated, and local climate action. In New York, the Climate Leadership and Community Protection Act (CLCPA) calls for greenhouse gas emissions reductions of 40% by 2030, electrical grid decarbonization by 2040, and a net-zero economy by 2050, with 30-40% of the benefits of investment going to environmental justice communities. Transitioning the Genesee-Finger Lakes away from fossil fuels swiftly and equitably will necessitate the coordination, commitment, leadership, and investment of a broad range of stakeholders. While the CLCPA has clear targets, it does not, as of yet, provide clear guidance for implementation or tracking progress. As such, the Genesee-FLX Climate Action Strategy provides a framework for collaborative action for the next 3-5 years that 1) focuses on key enablers of systems-level change, 2) utilizes already existing technologies, 3) optimizes the co-benefits of taking climate action, and 4) provides the chance for everyone to meaningfully contribute.

“Climate change is a grave threat to the health of people and planet - requiring ambitious, accelerated, local climate action.”

Our analysis shows that regional greenhouse gas emissions come largely from transportation (33%), agricultural sector (22%), and residential and commercial buildings (25%). Furthermore, decarbonizing and improving our electrical grid will provide year-over-year gains in emissions reductions as we move to electrify other sectors. Accordingly, the Genesee-FLX Climate Action Strategy focuses



on reducing greenhouse gas emissions in the transportation, buildings, agriculture, and energy generation sectors, while advancing equity, public health, economic development, and ecological stewardship for the benefit of all regional residents.

Given the interdependence of our natural, social, and economic systems, particularly with regard to our transportation and electricity infrastructure and our local food-system, regional action provides the most strategic way forward. A regional approach is large enough to have a meaningful impact on the state's overall emissions, while small enough to engage local actors in making a positive impact in their community. The intention here is to integrate existing efforts into a comprehensive framework for collaborative action that advances the good work already underway and provides direction for those yet to undertake climate or sustainability initiatives.

While climate change poses significant challenges, it also offers significant opportunities to reimagine and reinvigorate our region's future. Successfully mitigating and adapting to climate change will require rehabilitating our aging housing stock, reconceptualizing our transportation system, modernizing the energy grid, and creating a sustainable food supply. It also provides the chance to reduce the

energy burden of low-income households, improve indoor and outdoor air quality, create living-wage jobs, and facilitate cooperation between members of our diverse community. These actions stimulate our local economy and make our neighborhoods cleaner, stronger, healthier, and more resilient. According to an analysis by NY Climate Action Council, achieving CLCPA goals will save approximately \$260 billion by reducing the damages associated with climate change. Moreover, improvements in air quality, increased active transportation, and energy efficiency interventions will generate \$160-170 billion worth of health benefits. Climate action makes financial sense - in New York State, the cost of inaction exceeds the cost of action by at least \$80 billion.

To ensure the Genesee-Finger Lakes is a leader in the state's transition to a clean energy economy and can reap the economic, environmental, and social benefits associated with climate solutions requires we take coordinated, collaborative action at the regional level now. Accordingly, the Genesee-FLX Climate Collective, with the Climate Solutions Accelerator of the Genesee-

*“To ensure the Genesee-Finger Lakes is a leader in the state’s transition to a clean energy economy and can reap the economic, environmental, and social benefits associated with climate solutions **requires we take coordinated, collaborative action at the regional level now.**”*

Finger Lakes Region as the backbone organization, is employing the collective impact approach to advance a regional climate action strategy that moves the region forward in meeting CLCPA goals. Collective impact facilitates large-scale, cross-sector collaboration to

address complex, urgent, social issues that cannot be solved within a single sector or by a single entity. The Climate Collective chose this approach because we believe that the only way to thwart the climate crisis is to work collaboratively. Addressing climate change provides the opportunity for every individual, business, organization, and municipality to work together in cultivating the future we want to see for the Genesee-Finger Lakes region.

Because climate change is a structural issue with multiple touchpoints and intersections, the actions selected for this strategy must also multitask, reducing emissions, while addressing other areas of community concern. To accomplish this, the Genesee-FLX Climate Action Strategy moves beyond a singular focus on climate mitigation, adaptation, or resilience, focusing instead on actions that reduce greenhouse gas emissions and contribute substantially to improving quality of life, adaptability, and resilience of individuals and communities to the climate impacts we already experience and those to come. The Genesee-FLX Climate Action Strategy prioritizes climate action that

addresses 1) vehicle miles traveled (VMT) 2) energy efficiency, 3) building electrification, 4) soil health and agricultural waste management, 5) the local food system, 6) the electrical grid, and 7) economy-wide greenhouse gas reducing measures.

The power of this strategy lies in the many committed individuals engaged daily in service to others and to the community. Consequently, this is an emergent strategy, one that can, and will, evolve as we continue to engage stakeholders, learn from one another, and build the capacity of our community to take climate action. Therefore, we offer the following strategy in the spirit of collaboration, and with the promise of possibility, expecting that local communities adapt the strategy to fit their needs, while seeking regional synergies and opportunities to share resources and best practices that advance the state's goal of a net-zero economy. *Together, WE are the solution to climate change.*

1. Introduction

Located on the land of the Seneca Nation, a member of the Haudenosaunee Six Nations Confederacy,¹ the Genesee-Finger Lakes region of Upstate New York is nestled between the City of Buffalo to the west, Lake Ontario to the north, and the bucolic Finger Lakes to the southeast. The nine-county region boasts bountiful natural resources, particularly fresh water, relatively clean air, and the most farmland in all of New York State.² A diverse population of 1.2 million lives in the region’s many rural villages, suburban towns, and the cities of Rochester (the third-largest in NY), Geneva, Canandaigua, and Batavia.

Unfortunately, climate change poses multiple threats to the people and places of the region, through temperature increases, extreme flooding, fluctuations in precipitation patterns, and increases in heat-related and vector-borne illnesses (See Figure 1: Regional Climate Impacts). While climate change will impact all 1.2 million residents of the region, it will not impact

everyone equally. According to the City of Rochester’s Climate Vulnerability Assessment, climate change will disproportionately impact seniors/elderly, children, people of color, low-income residents, renters, people without access to vehicles, disabled individuals, individuals without the ability to access resources in a crisis, individuals dealing with substance abuse, non-native English speakers, undocumented immigrants, refugees, visually/hearing impaired individuals, individuals with mental illness and farmworkers.³ Climate change impacts, therefore, threaten to undermine the ecological, economic, and social vitality of the region, as well as overall public health.

Against the backdrop of the COVID-19 pandemic, international public health officials warn that climate change is set to become the “defining narrative of human health,”⁴ calling for immediate action to stem the rise of global temperatures. Significant health

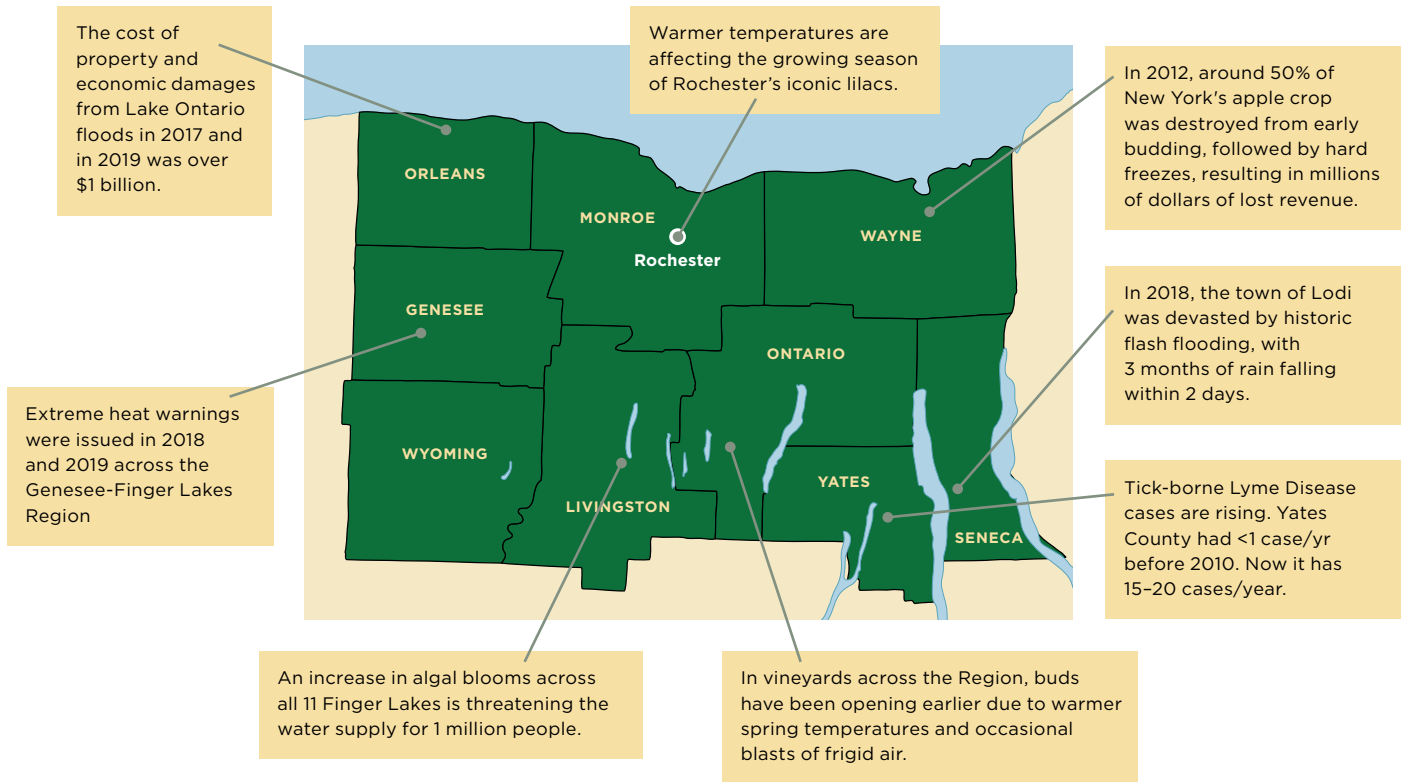


FIGURE 1: REGIONAL CLIMATE IMPACTS

inequities already plague the Genesee-Finger Lakes region,⁵ and these inequities will worsen with further climate change. During the summer of 2021, as wildfire smoke from California impacted air quality in New York,⁶ UN Secretary-General António Guterres declared the Intergovernmental Panel on Climate Change's (IPCC) latest report a "code red for humanity" stating that "we must act decisively to keep 1.5 (degrees) alive," referencing the temperature needed to minimize the most severe consequences of climate change.⁷ Yet, if we move swiftly, the world's scientists say, there is still time to avoid the most devastating impacts to human health and to our natural and economic systems.

While climate change poses significant challenges, it also offers significant opportunities to reimagine and reinvigorate our region's future. Climate impacts and solutions touch nearly every aspect of our lives (e.g., where we live, what we eat, how we travel, our community design, and the products and services we use), thereby providing opportunities for climate

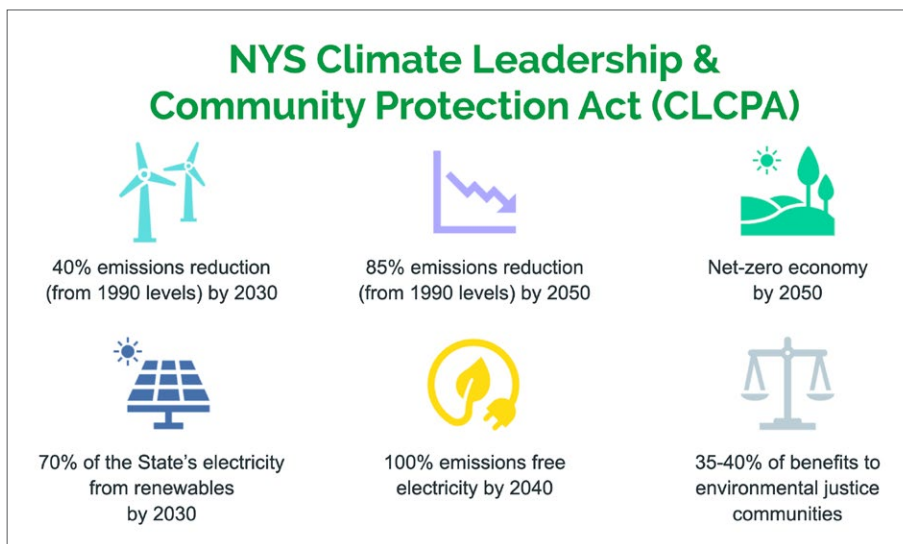
solutions to address other areas of community concern (e.g., improving public health, providing jobs, and reducing poverty and racial inequality). Successfully mitigating and adapting to climate change will require rehabilitating our aging housing stock, reconceptualizing our transportation system, modernizing the energy grid, and creating a sustainable food supply. It also provides the chance to reduce the energy burden of low-income households, improve indoor air quality, build relationships, and facilitate cooperation between members of our diverse community. These actions create jobs, stimulate our local economy, and make our neighborhoods cleaner, stronger, healthier, and more resilient. Working collectively, we can maximize the abundant natural resources and considerable human capital of the Genesee-Finger Lakes region to embed environmental and economic sustainability, resilience, and climate justice into all aspects of our lives.

NY State's Climate Leadership and Community Protection Act

At the state level, the nation-leading Climate Leadership and Community Protection Act (CLCPA) establishes targets to cut emissions 40% by 2030, to decarbonize the electrical grid by 2040, and to reach a net-zero economy by 2050, with 30-40% of all benefits of investments going to environmental justice

communities. In addition to reducing greenhouse gas emissions, the economic benefits of implementing the CLCPA are significant. According to an analysis by New York State's Climate Action Council, achieving CLCPA goals will save the state approximately \$260 billion by reducing the damages associated with climate

change. Moreover, improvements in air quality, increased active transportation, and energy efficiency interventions in low- and moderate-income homes will generate health benefits ranging from \$160-170 billion. Implementing climate action makes financial sense - the cost of inaction exceeds the cost of taking action by *at least* \$80 billion.⁸ By taking climate action now, the Genesee-Finger Lakes region can reap the economic, environmental, and social benefits associated with climate solutions and become a leader in the state's clean energy economy.





To inform the implementation of the CLCPA, the state convened a Climate Action Council, and in January of 2022, released a draft Climate Action Scoping Plan providing state-level recommendations for achieving emissions reductions. As of this writing, the scoping plan is out for public review, with a final scoping plan expected by early 2023. By the end of 2024, the Department of Environmental Conservation (DEC), the entity tasked with regulating and enforcing the CLCPA,

must develop a series of rules and regulations to ensure compliance with emissions reductions goals.⁹ The CLCPA timeline, likely pushing into 2024 before going into full effect, leaves us only 6 short years to reduce emissions in line with

IPCC recommendations.¹⁰ Moreover, while the CLCPA has clear targets, it does not, as of yet, provide clear guidance on local implementation or tracking local progress. **By taking coordinated, collaborative action at the regional level *now*, we are setting the Genesee-Finger Lakes on a clear path to meeting CLCPA goals and realizing a shared vision for a healthier, more equitable, and environmentally sustainable community.**

Why Collective Impact? The Genesee-FLX Climate Collective

Transitioning the Genesee-Finger Lakes region away from fossil fuels swiftly and equitably will require the coordination, commitment, leadership, and investment of a broad range of stakeholders from across the region. As such, the Genesee-FLX Climate Collective is employing the collective impact approach to advance locally relevant, systems-level climate solutions via a regional climate action strategy. Collective impact is a proven method for facilitating large-scale, cross-sector collaboration to address complex, urgent, social issues - often referred to as “wicked problems.” Collective impact focuses on establishing strategic partnerships, supporting mutually reinforcing activities, fostering continuous communication and learning, and building accountability through a shared measurement system.¹¹ The Climate Collective chose this approach because we believe that the only way to thwart the climate crisis is to work collaboratively. And, we are confident in our community and its capabilities - in the creativity, commitment, and compassion of our neighbors, working diligently to improve our region, with hopeful anticipation of the burgeoning opportunities to come. Together, WE are the solution to climate change.

After a year of conversations with community partners and research into collective impact best practices, the Genesee-FLX Climate Collective officially launched in February 2021. The Climate Solutions Accelerator serves as the backbone organization, working to convene the steering committee and facilitate the Collective thus far. The committee co-

*“...we are confident in our community and its capabilities - in the creativity, commitment, and compassion of our neighbors, working diligently to improve our region, with hopeful anticipation of the burgeoning opportunities to come. **Together, WE are the solution to climate change.**”*

chairs are Professor Jan Nyrop, Goichman Family Director at Cornell AgriTech, and Simeon Banister, Vice President of Community Programs at the Rochester Area Community Foundation. Although they come at this work from varied backgrounds, both are committed to advancing climate solutions

that promote regional vitality, prosperous, resilient communities, and a regenerative local economy. The Accelerator recruited the remainder of the steering committee in this spirit, recognizing that each member brings a unique perspective that reflects the needs and interests of the broader community. The steering committee consists of a combination of rural and urban participants, representatives from large organizations, as well as grassroots organizers, and individuals with diverse lived experiences. Steering committee representation includes membership from: resident and youth consultants, agriculture, business, community development, social and racial justice, housing, workforce development, renewable energy, transportation, planning, health, higher education, and philanthropy.¹²

Over the course of the year (mainly on Zoom due to the pandemic), the steering committee and backbone staff worked to identify regional assets, brainstorm a vision for the future, evaluate systems-level conditions maintaining the problem, gather public input and feedback, understand regional emission sources, and explore climate solutions through regional field trips. As part of this work, the committee identified four “cross-cutting considerations” or values to inform the work: **equity, public health, economic development, and ecological stewardship**, that serve as the basis for decision-making and assessing the suitability of climate solutions for the region (See Figure 2: Cross-cutting Considerations).

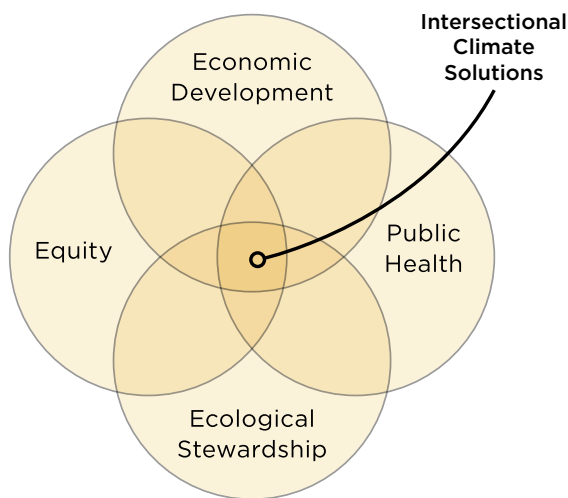
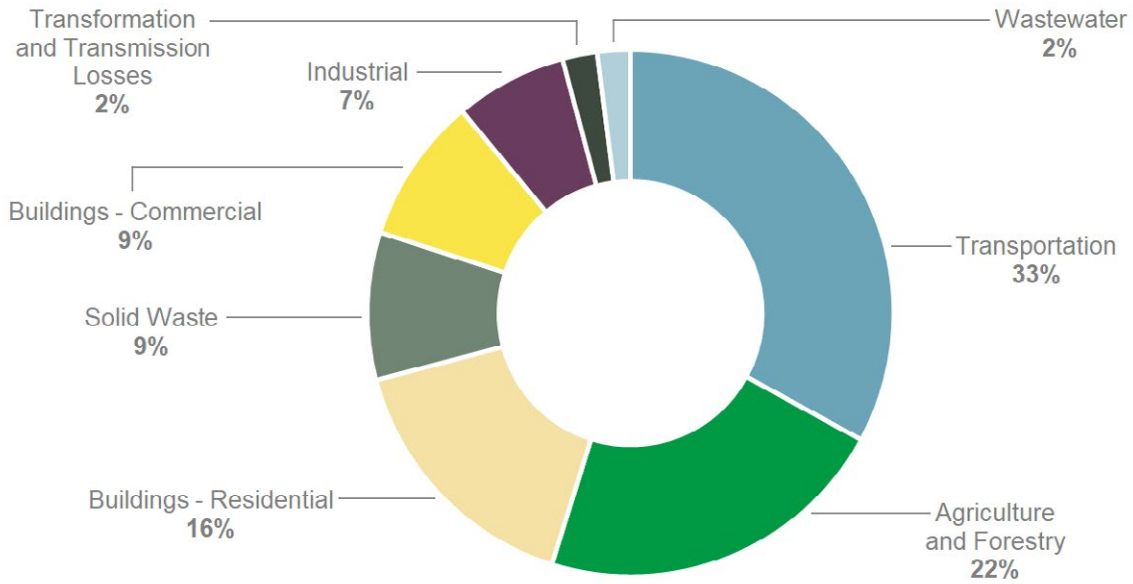


FIGURE 2: CROSS-CUTTING CONSIDERATIONS

The Collective’s steering committee also consulted with the [Stockholm Environment Institute](#) (SEI) to complete a greenhouse gas (GHG) inventory of the nine-county region (See Appendix A: *Genesee-Finger Lakes Emissions Inventory*), with a public presentation of the findings. Analysis shows gross regional emissions coming from: transportation (33%), agriculture (22%), residential buildings (16%), waste (9%), commercial buildings (9%), industrial (7%), and electricity transmission and distribution losses (2%) for 2018 (See Figure 3: *Regional Emission Sources*). Consequently, the regional climate action strategy focuses largely on the transportation, agriculture, building, and energy generation sectors.¹³

The committee also worked to incorporate diverse public feedback from a range of stakeholders through an initial climate solutions survey and a series of sector-specific and population-specific focus groups. The objective of the sector-specific focus groups was to understand the opportunities and barriers to equitably reducing emissions in that sector and transitioning to a clean energy economy in the Genesee-Finger Lakes region.¹⁴ The population-specific focus groups, in particular, sought to include the voices of those most vulnerable to climate change and most often left out of decision-making processes. Conversations focused on participants’ vision for a thriving region on a healthy planet, as well as the opportunities and barriers to implementing climate solutions.¹⁵ These sessions provided the foundation for selecting the mitigation measures included in subsequent scenario modeling and the broad categories of action included in this strategy. Additionally, we held consultations with municipal leaders and elected officials to present the results of the greenhouse gas inventory and community input, before discussing opportunities and barriers to meeting CLCPA goals. Public engagement efforts will be ongoing to ensure that the climate action strategy and climate solutions meet community needs.

Regional Greenhouse Gas Emissions Inventory 2018 Contributions to Gross Emissions by Sector



MMtCO2e calculations based on 20GWP

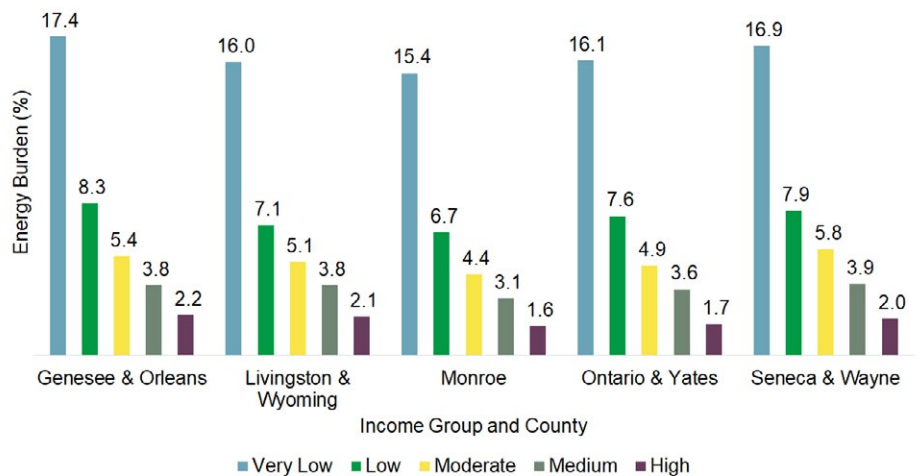
FIGURE 3: REGIONAL EMISSION SOURCES

Cultivating Climate Justice through Collective Impact

Besides the emphasis on data (shared measurement) and cross-sector collaboration, collective impact is well-suited for addressing climate change given its emphasis on equity. Research shows that inequity both drives climate change and is accelerated by climate change¹⁶ - those who **contribute least to the problem will be impacted first and worst** by the effects of climate. While the Genesee-Finger Lakes region is relatively insulated from extreme natural disasters (e.g., hurricanes, forest fires, sea-level rise, etc.) the community's struggle to ameliorate poverty and structural racism means that the climate impacts we do experience will exacerbate existing inequalities in health, energy burdens, housing affordability and quality, transportation burdens, and economic outcomes, amongst others. For example, in all nine counties of the Genesee-Finger Lakes region, the energy burden

for low-income households is over 6.5% and over 15% for very low-income households,¹⁷ despite NY State's Energy Affordability Policy that low-income households spend less than 6% of their income on energy (See Figure 4: Energy Burden by County).¹⁸ Without careful planning and thoughtful policy to transition low-income

Residential Energy Burden by Income Group and County in 2019



Source: US Census Bureau. American Community Survey 1-Year Data (2005-2019)

FIGURE 4: ENERGY BURDEN BY COUNTY



CONNECTED COMMUNITIES AND HEAT SMART MONROE CANVASSING EVENT TO EDUCATE ABOUT THE BENEFITS OF ENERGY EFFICIENCY AND THE POSSIBILITIES FOR ENROLLING IN STATE INCENTIVE PROGRAMS. PHOTO: EVAN LOWENSTEIN

households to clean, renewable energy, this burden is likely to increase with rising fossil fuel prices, with the need for more energy to heat and cool homes due to temperature changes, and with fewer utility gas customers remaining to pay for outdated fossil fuel infrastructure, as more customers transition to all-electric heat pumps.

Although there are many definitions of climate justice, they typically include 1) recognizing the disproportionate impacts of climate change, 2) addressing the root causes of climate change, 3) centering the voices and needs of those most impacted in decision-making processes, and 4) ensuring climate solutions are equitably distributed.¹⁹ In New York State, the Climate Action Council's Climate Justice Working Group (CJWG) developed evaluation criteria to identify "disadvantaged communities" (DACs) for the purpose of ensuring that "frontline and otherwise underserved communities benefit from the state's historic transition to cleaner, greener sources of energy, reduced pollution and cleaner air, and economic opportunities."²⁰ In March 2022, the state released 45

draft criteria for identifying disadvantaged communities, based on census tract, along the dimensions of a) Potential Pollution Exposure, b) Land use and facilities associated with historical discrimination or disinvestment, c) Potential Climate Change Risks, d) Income, e) Race and Ethnicity, f) Health Outcomes and Sensitivities, and g) Housing, Mobility, and Communications.²¹ Examples of criteria include a) proximity to diesel truck, bus, and vehicle density, b) proximity to active landfills, c) driving time to hospitals or urgent/critical care, d) percent <80% Area Median Income (AMI), e) percent from racial/ethnic minority groups, f) percent adults age 65+, and g) manufactured housing.²² Additionally, any household outside of the designated census tracts earning 60% State Median Income (SMI) is included as DACs for the purposes of clean energy and energy efficiency investments.

In the Genesee-Finger Lakes, 35% of the census tracts are identified as DACs, which is on par with the state average. When including the income-eligibility criteria for the purposes of allocating clean energy and energy efficiency, the Genesee-Finger Lakes has approximately 45% of households that fit within the eligibility criteria, 29% within the designated census tracts,²³ and an additional 15% of income-eligible households.²⁴ Whether due to "Environmental Burden and Climate Change Risk" or "Population Characteristics and Health Vulnerability," the region has a significant proportion of the population that should be given special consideration when implementing climate solutions. The state's designation shows that climate justice concerns extend across urban centers, suburban towns, and rural areas, each with its own unique needs, challenges, and assets ready to address climate change.

To ensure the spirit and substance of the CLCPA's climate justice provisions, **we must work shoulder-to-shoulder to implement climate solutions in ways that redress past environmental and economic harms and create new relationships of power needed to transition to a clean energy future.** Bringing more people to the table with differing perspectives to tackle the intersectional nature of climate change is imperative for fostering climate justice and creating a cleaner, greener, more equitable Genesee-Finger Lakes region.

Why a Regional Approach?

Although there are diverse needs and concerns across the nine-county region, there is much we have in common, including similarities in climate and geography, as well as our electrical grid and transportation system, which provide a foundation for collaborative action. The geographic scope of this climate action strategy aligns with the state’s Finger

outlets can magnify neighborhood and community actions, thereby raising awareness and building momentum for further participation.²⁵ Because local residents know their community best - understanding their strengths and needs - they are best equipped to develop and implement a climate action strategy that is equitable, inclusive, and can optimize the co-benefits of climate action.



PHOTO BY BLACKBIRD SON PRODUCTIONS

Lakes Regional Economic Development Council (FLREDC) boundaries, providing possibilities for community collaboration on sustainable economic development and generating a shared regional identity as leaders in the clean energy economy. Moreover, and perhaps most obviously, greenhouse gas emissions traverse county boundaries. Our mitigation efforts will be amplified when combined, given the interdependence of our natural, social, and economic systems. A regional approach is, therefore, large enough to have a meaningful impact on the state’s overall emissions, while small enough to engage local actors in making a positive impact in their community. Coordinating action at the regional level provides the opportunity for communities, local institutions, and businesses to collaborate on projects and learn from one another, with the possibility of creating economies of scale. Media

Despite the many advantages of a local approach, there are also some difficulties associated with a regional approach to a global problem. For perspective, the Genesee-Finger Lakes region emits slightly more emissions than both the entire state of Rhode Island (with 1.1 million people) and the entire country of Nepal (with its 29 million inhabitants). See Table 1: Emissions Comparison by Geography²⁶. The effects of climate change that we experience in the nine-county region pale in comparison to those experienced in developing countries, wherein individuals struggle to meet basic needs and where sea-level rise, severe storms, and drought, for example, threaten the very existence of entire nations. Though our region is privileged to have not experienced the most devastating impacts of climate change, we have contributed to the problem,²⁷ and are obligated to

TABLE 1: EMISSIONS COMPARISON BY GEOGRAPHY

Region	CO₂ Emissions (Million Metric Tons)	Population (Millions)
Rhode Island	11.5	1.4
Nepal	12.0	29.1
Genesee-Finger Lakes Region	12.8	1.2
Delaware	13.3	1.0
Slovenia	14.1	2.1

For comparison purposes, emissions calculated using the 100 year Global Warming Potential, in line with IPCC accounting

do our part to ensure a healthy planet for all. To be truly committed to equity means recognizing the implications of our regional decision-making for the global community. Along the same lines, because our region does not exist in a vacuum, we could effectively achieve net-zero emissions, only to have emission-generating activities increase elsewhere - in other parts of the state, outside of New York, and even globally. As such, meeting our state goals depends on many aspects outside of our immediate control or influence.

But this does not mean we can, or should, opt to do nothing. Rather, we must make decisions to reduce our own impact, honor local ecosystems, and reduce harm to those within, and outside of, our regional borders. While we recognize that climate change must also be addressed at the international and national levels, we believe we can be most impactful by mobilizing action across our shared networks to influence change at the local and state level.

Other Plans and Reports

There are a multitude of sector-specific and strategic plans throughout the nine-county region, from municipal and county governments and regional entities alike. Many of them focus exclusively on, or pay mention to, transportation, agriculture, buildings, energy generation, or the environment, generally. There are some plans focused exclusively on climate change or sustainability. In 2013, the Genesee/Finger Lakes Regional Planning Council completed a comprehensive Finger Lakes Regional Sustainability Plan that served as the roadmap for our own emissions inventory and climate action strategy.²⁸ Other climate and sustainability focused plans include the City of Rochester's Climate Action Plan (2017),²⁹ Climate Vulnerability Assessment (2018),³⁰ and Climate Resilience Plan (2019),³¹ the Village of Fairport's Sustainability Plan (2010)³², and the Green Genesee/Smart Genesee Plan and Resiliency Plan (2021).³³ There are also several initiatives underway (e.g., Monroe County Climate Action Plan, and Brighton Climate Action Plan) or under revision.

To that end, the ideas we are presenting are not new, and we are grateful and encouraged to see that there is broad support for the types of actions we suggest. However, to our knowledge, there are no other entities that are working to coordinate action at the *regional* scale necessary to transition the Genesee-Finger Lakes to a clean energy economy and meet the goals of the CLCPA. To the extent that existing plans do not align with CLCPA goals, or align with the scientific consensus on

the pace of change needed to tackle climate change, these plans will require revision. It is our hope that when municipal or county entities look to develop their plans or revisit them in light of the state's law, they will turn to the larger collaborative network facilitated by this regional climate action strategy to advance our mutual goals. *Overall, the intention here is to integrate existing efforts into a comprehensive framework for collaborative action that advances the good work already underway, and provides direction for those yet to undertake climate or sustainability initiatives.*

Furthermore, the intention here is to ensure that climate action does not occur in isolation, but rather aligns with other local priorities around safety, resilience, equity, and economic development, amongst others. Reports from [FLREDC](#), [RMAPI](#), and the [RASE Commission](#) all identified workforce development, increased income, and improved access to essential needs (e.g., housing, utilities, food, and medical care) as priorities. [ROC 2025](#) identified downtown revitalization, regional brand development, and business attraction and retention as priorities. Investments that facilitate our region's transition to a clean energy economy will advance these priorities, while also improving public health and wellness, reducing poverty and racial inequities, and creating resilient and sustainable communities.

A Climate Action Strategy for the Genesee-FLX

Given the urgency of the climate crisis and the magnitude of the transition needed to reach net-zero, we must start reducing our greenhouse gas emissions now. **There are things *we know* we have to do and can start doing now,** while the state finalizes its policy framework. *We know* we need to build a renewable and reliable electrical grid to support the electrification of our buildings and our vehicles. *We know* we have to improve efficiency—not only of the technologies we use—but in how we move through the world, in how we use energy, in how we design our communities, and in how we produce our food. *We know* this will be no small feat; but *we also know* that the technology and information to take action already exist, and we must do so swiftly and equitably.

What follows, therefore, is a climate action strategy for the next 3-5 years that 1) focuses on key enablers of systems-level change, 2) utilizes already existing technologies, 3) optimizes the co-benefits of taking climate action, and 4) provides the chance for everyone to plug-in and meaningfully contribute. Although we have the data to project emissions trajectories well into the future (See Appendix B: Scenario Analysis Report), there are too many unknowns to create a detailed plan out until 2050. And while we cannot shy away from the big challenges and the hard tasks that lie ahead, focusing on short-term enablers allows us to eliminate barriers that keep these bigger challenges in place. As such, this is an emergent strategy, one that

can, and will, evolve as we continue to engage more stakeholders, learn from one another, and build the capacity of our community to take climate action.

Building a healthier, more equitable, and sustainable community involves a lot of moving parts and requires shifts at every level - including policy, infrastructure,



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financing, and individual behaviors (See Figure 5: Systems-Level Change).³⁴ When considered in its entirety, this can feel like an overwhelming endeavor. But it also presents an opportunity - an opportunity

“...this is an emergent strategy, one that can, and will, evolve as we continue to engage more stakeholders, learn from one another, and build the capacity of our community to take climate action.”



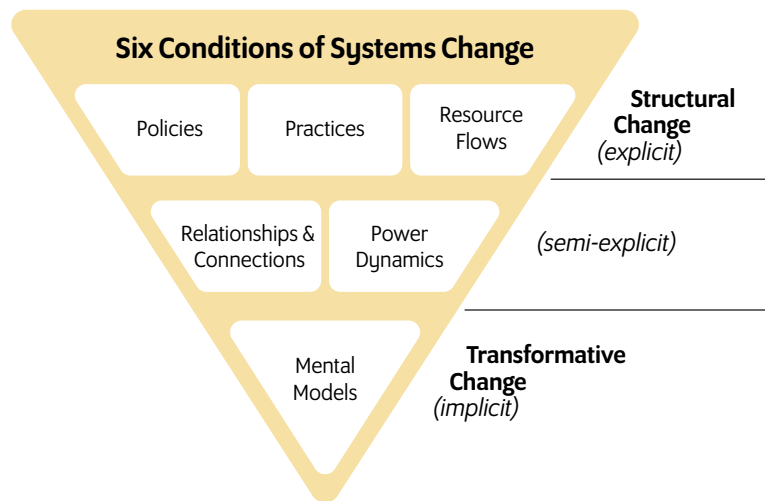
ALEXANDER AVE MURAL. PAINTED BY NICOLÁS ROMERO ESCALADA | PHOTO BY EVAN LOWENSTEIN

for every individual, business, organization, and municipality - to cultivate the future we want to see for the Genesee-Finger Lakes region. Consequently, the Genesee-FLX Climate Action Strategy provides a framework for collaborative action that aims to transform the policies, inequitable resource flows, and stale mental models preventing the adoption of equitable climate solutions in our region. It focuses on employing existing technologies to reduce greenhouse gas emissions in the transportation, building, agriculture/food/forestry, and energy generation sectors while emphasizing the cross-cutting considerations of equity, public health, economic development,

and ecological stewardship. This approach enables us to move beyond a singular focus on climate mitigation, adaptation, or resilience. Rather, mitigation and adaptation strategies work together to reduce the impact of climate change and build community resilience. This broad approach to climate action means that climate mitigation and adaptation become regular co-benefits of all community decision-making. As such, the strategy contains some calls to action that may not have a sizable upfront impact on greenhouse gas reductions, but

contribute substantially to improving the quality of life, adaptability, and resilience of individuals and communities to the climate impacts we already experience and those to come.

FIGURE 5: SYSTEMS-LEVEL CHANGE



2. Regional GHG Emissions and Local Challenges and Assets for Emissions Reductions:

As we enter our second full year of the coronavirus pandemic, in many ways our community is hurting - suffering from the impacts of COVID-19, suffering from the cumulative effects of structural racism and poverty, suffering from disinvestment in our urban core, and languishing economic opportunity in our rural communities, suffering from toxic and divisive politics, and suffering from the uncertainty and the existential threat of climate change. COVID laid bare the systemic inequities underpinning the disparate racial, economic, and health outcomes in our region, and climate change is poised to do more of the same if left unabated.

These challenges increase the region's vulnerability to climate impacts and present obstacles to implementing equitable climate solutions. The Genesee-Finger Lakes region, however, also possesses a myriad of natural and human assets that can be leveraged to build a healthier, more equitable, and environmentally sustainable community. Thoughtful, coordinated, and collaborative planning targeted at systems-level change can help ameliorate many of the disparate outcomes facing the regional community, while also reducing the harms associated with greenhouse gases and climate change.

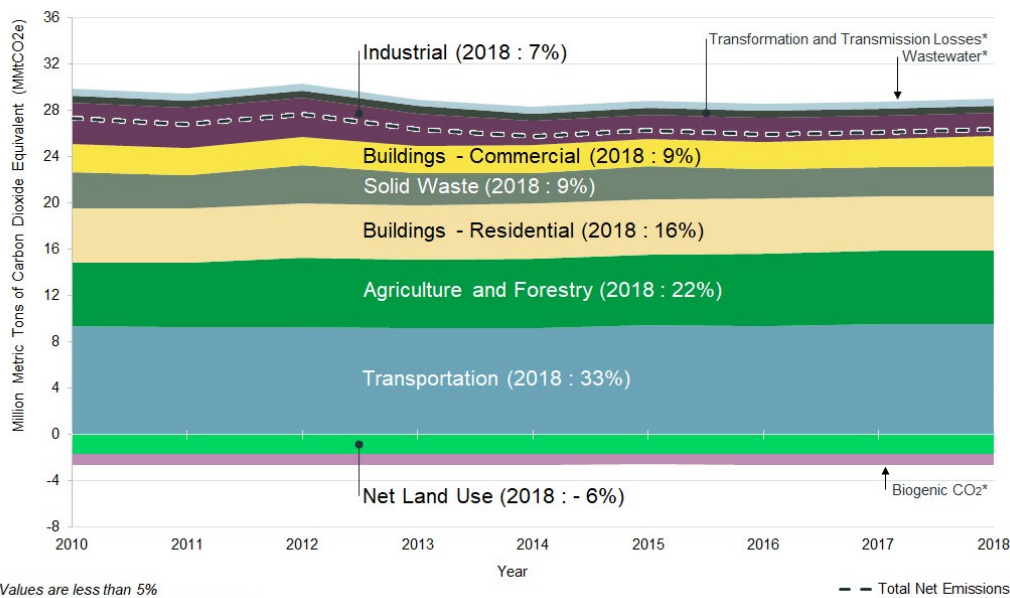
Developing a Shared Understanding of the Problem: Regional GHG Emissions

Developing a shared understanding of our regional emission sources is a necessary first step in determining where we can be most effective in taking climate action. To accomplish this, Genesee-FLX Climate Collective consulted with the Stockholm Environment Institute to conduct a high-level baseline inventory of our regional emissions sources. Greenhouse gas emissions are calculated for the historical period 2010-2018, and a baseline projection of emissions is provided through 2050 based on historical emission rates. The historical period was chosen based on data availability; there is a lack of available data before 2010 and after 2018. See Appendix A for a full description of data sources, assumptions, and methodology.

The emissions inventory is currently being stored in the Low Emissions Analysis Platform (LEAP)³⁵ with future plans to create a publicly accessible emissions inventory. Historical and future energy demands are modeled for all economic sectors and sources including industry, transport, households, commercial and institutional, agriculture and waste. It also includes non-energy emissions, such as from livestock and crop production, waste, and industrial processes. The model covers the consumption of all major fuels and non-energy emission sources in the region.

In line with the state's CLCPA, the model uses the 20-year global warming potential (GWP), with methane making up the largest share of emissions, followed by carbon dioxide and nitrous oxide. The results show a slight reduction in emissions from 29.92 million metric tons of carbon dioxide equivalent (MMtCO₂e) in 2010 to 29.02 MMtCO₂e in 2018. This decrease is from the decline in industry in the early 2010s and a shift to cleaner forms of electricity production. Among the different sectors, transport-related emissions are the highest in the region at 33% of 2018 emissions, followed by the agricultural sector (22%), and the residential sector (16%). See Figure 6.

Overall, historical emissions are largely from consuming energy rather than non-energy emissions. The availability, accessibility, and use of alternative modes of transport, including electric vehicles, is low across the region keeping transport emissions high. Residential energy consumption continues to be driven by water heating, space heating, and cooling. Agricultural emissions from energy consumption are low, but non-energy emissions, particularly from dairy farming, make up almost the entire 22% registered to the Agriculture and Forestry sector.



* Values are less than 5%
MMtCO2e calculations based on 20GWP

FIGURE 6: REGIONAL GREENHOUSE GAS EMISSIONS INVENTORY

Among fuels, gasoline consumption in vehicles represents 24% of 2018 emissions. This is followed by natural gas use in the residential, commercial and industrial sectors resulting in 17% of 2018 emissions. Natural gas use appears to jump in 2018 compared to previous years. This coincides with a substantial

Regional Challenges

Climate change is already impacting the Genesee-Finger Lake region in terms of direct environmental impacts, such as flooding, changes in precipitation patterns, the presence of algal blooms, changes in vector ecology, and agricultural production, amongst others. For example, in 2016 much of the region experienced drought and local farmers reported significant losses in corn, hay, forage, and other feedstock crops.³⁷ Increasing algal blooms across all 11 Finger Lakes threaten the water supply for a million people, as well as recreational opportunities.³⁸ The number of extreme heat days is on the rise, posing health challenges and impacting agricultural production.

A lack of education about regional climate impacts and misinformation about climate change and clean energy is widespread in the region, both among community leaders and the general public. Political polarization fuels the perpetuation of misinformation. Furthermore, people do not have a clear understanding

of how climate change intersects with other regional challenges, such as poverty, structural racism, a housing stock unable to withstand environmental changes, and health concerns. Moving people to take climate action is difficult in light of this misunderstanding and in the face of persistent regional challenges that are more front and center in people's everyday lives.

Many in the region share the struggle for an improved quality of life, and improved economic, health, and housing outcomes. Poverty rates prior to the COVID-19 pandemic hovered around 13% in the nine-county region, just shy of the state average of 14%, but with considerably higher rates concentrated in the City of

increase in heating degree-days in the months of March, April, and October in 2018, suggesting that households may have kept their heating on later in the year (April) and turned it on earlier in the year (October). In the future, heating degree-days are expected to decline as a result of climate change.³⁶

The regional greenhouse gas inventory is important for developing a shared understanding of our



PHOTO BY EVAN LOWENSTEIN

Rochester at 31%, and near 20% in Batavia and Geneva.³⁹ There are also pockets of poverty in rural areas outside of regional cities, in Sodus, Lyons, Geneseo, Mt. Morris, parts of Penn Yan and Naples, among others.⁴⁰ Across the region, poverty has a significant racial dimension (See Table 2 - Race, Ethnicity, and Poverty by County⁴¹).

and Policing.⁴⁴ Beyond the RASE Commission's recommendations, several measures to ameliorate racial inequities have been put into place, including [Interrupt Racism](#), the [Police Accountability Board](#), and the [Person in Crisis Team](#). Widespread disparities in racial outcomes mean that communities of color are

TABLE 2: RACE, ETHNICITY, AND POVERTY BY COUNTY

	NY State	G-FLX Region	Genesee	Livingston	Monroe	Ontario	Orleans	Seneca	Wayne	Wyoming	Yates
Asian	15%	14%	4%	19%	14%	10%	2%	58%	19%	17%	N/A
Black or African American	21%	32%	27%	35%	33%	26%	29%	42%	36%	36%	36%
Hispanic or Latino	22%	30%	21%	33%	32%	23%	43%	19%	20%	33%	14%
White	10%	10%	10%	12%	10%	8%	12%	11%	11%	10%	12%

COVID-19 served to deepen economic insecurity in the region, with the local economy losing one-in-five jobs at the height of the pandemic in April 2020. Economic recovery has improved since the pandemic's deepest downturn, but the regional economy, even prior to the pandemic, was not meeting the basic needs of many local residents.⁴² Households living in poverty are particularly vulnerable to climate impacts and least likely to access costlier climate solutions, posing a challenge for achieving climate justice.

Inequities in wealth accumulation and the disproportionate number of Black, Indigenous, and People of Color (BIPOC) in poverty can be attributed, in part, to the history of residential segregation and redlining that scars the region's landscape, particularly in the City of Rochester. Discrimination in the housing sector continues, despite the end to formal segregation policies, impacting housing quality and access to resources and opportunities - such as employment and neighborhood safety - all of which negatively impact the social determinants of health.⁴³ Racial disparities are not limited to the housing sector. The Commission on [Racial And Structural Equity \(RASE\)](#) found that structural racism persists across every sector and system, and issued several recommendations to address racial inequality in Business Development, Criminal Justice, Education, Healthcare, Human Services, Housing, Job Creation, Mental Health and Addiction Services,

more likely to experience the most significant impacts of climate change. Ensuring equitable access to climate solutions will require an anti-racist and inclusive local climate movement to counteract these various longstanding inequities. A systems-level approach to addressing climate change and racial inequity increases our likelihood of success in addressing both.

Climate change worsens existing health conditions, disproportionately impacts vulnerable communities, increases health care costs, and exacerbates the effects of other social determinants of health.⁴⁵ In the Genesee-Finger Lakes region, Common Ground Health found poverty to be a major contributor to poor health outcomes.⁴⁶ According to the report, *Overloaded: The Heavy Toll of Poverty on Our Region's Health*, individuals living in neighborhoods with a poverty rate of 30% or more die on average eight years earlier than individuals living in communities with poverty rates below 5%. During the period from 2014-2016, roughly 44% of emergency room visits could be attributed to health inequality, translating to 194,000 excess emergency room visits and \$340 million in additional insurance costs for the region.⁴⁷ In rural communities in the Genesee-Finger Lakes region, access to transportation and poverty are barriers to receiving emergency and preventative medical care.⁴⁸ Farmworkers in the region are more susceptible to poor working conditions and their associated health impacts.

Many farmworkers delay medical care because of concerns about immigration status.⁴⁹ The opioid epidemic has also made its mark on the Genesee-Finger Lakes, with rates of opioid overdose increasing



PHOTO BY DTRACZ/PIXABAY

drastically starting in 2017 and exceeding those across the state in recent years.⁵⁰ Black populations in the region experience higher rates of premature mortality due to heart disease, diabetes, and cancer.⁵¹ Furthermore, BIPOC community members with lower incomes experience higher rates of asthma-driven emergency room visits.⁵² Finally, food insecurity is a major concern throughout the region, with at least 11% of the population reporting food insecurity prior to COVID. With the onset

of the COVID pandemic, the number of households experiencing food insecurity is projected to increase another 22%-27%.⁵³

Inequitable health outcomes will only worsen as climate impacts intensify. For example, burning fossil fuels associated with climate change causes both indoor and outdoor air pollution that can worsen existing respiratory illnesses. Similarly, increased exposure to extreme heat exacerbates respiratory illness and cardiovascular disease, as well as raises the possibility of heatstroke. Extreme heat disproportionately impacts farmworkers, children, the elderly, and those without access to air conditioning. Extreme weather can impact the ability of individuals to access needed or emergency medical care and cause additional stress that worsens associated health conditions (e.g., heart disease and substance abuse). Changes in precipitation patterns and temperature, both locally and globally, can also disrupt agricultural production, impacting food prices and food security.

Failure to take swift and bold climate action will only worsen the region's existing illnesses and health inequities and increase health care costs.

Given the wide range of immediate concerns (e.g., poverty, racism, and health), many in the community see climate change as a distant or less pressing issue. Furthermore, taking action on climate change is not necessarily easy, in part because of a lack of clarity on what actions and options are available, and in part due to a lack of resources. The upfront costs for transitioning to clean energy can be a barrier, especially for low-to-moderate (LMI) households and smaller businesses and nonprofits. Similarly, our public engagement efforts revealed that many community and municipal leaders are interested in being more sustainable but do not have the financial resources, the bandwidth, or the knowledge to do the work. Individuals and organizations are also struggling to take advantage of existing clean energy programs and financial incentives because the programs are difficult to navigate. Therefore, the transition to clean energy that is happening in our region risks leaving behind climate justice communities and LMI households.

While many cite affordable housing as a regional asset, the benefits do not necessarily extend to low-to-moderate income households, and the aging and deteriorating housing stock pose challenges to improving efficiency and sustainability. Deferred maintenance on homes leads to expensive projects and requires extensive coordination between service providers, which does not consistently happen. Our region has a significant number of mobile/manufactured homes, which typically consume about 35% more energy per square foot than detached single-family homes and can be challenging to upgrade.⁵⁴ Rental units also pose a challenge to improving



PHOTO BY WIKIMEDIA

efficiency and sustainability. Our region is struggling to overcome the “split incentive” that is created when tenants pay the energy bills, but landlords are responsible for investing in energy improvements. Over 50% of households in the City of Rochester live in rental units, and there are a disproportionate number of BIPOC residents living in rental units.⁵⁵ The split incentive slows the adoption of weatherization measures and heat pump installations, posing equity concerns and barriers to progress.

Clean energy installations and home energy upgrades are also being hampered by supply chain problems, worker shortages, salespeople promoting gas, poorly coordinated workforce development/placement programs, and lack of wrap-around services. Moreover, the clean energy workforce in our region currently lacks diversity. To ensure that the transition to a clean energy economy does not leave behind those most impacted by climate change, there is a need for programs that support diverse participation and create more equitable employment opportunities in the clean energy sector (e.g., a clean energy business incubator,

a clean energy workforce development training center, and “school to green jobs pathways” for members of historically underserved communities). Thus far, the majority of the local workforce development programs have yet to integrate the clean energy sector into their own goals and objectives.

Of course, cultural shifts and systems-level change take time, in part because of the relationship building that is necessary to open hearts and minds to the possibility of change. Given that sustainability and climate solutions are not currently seen as priorities for most individuals and organizational leaders in our region, engaging them and securing their commitment to meaningful action will not be a quick or easy process. That said, we believe that slow and effective is better than fast but ineffective or superficial. **The intention behind the climate action strategy presented here is to create a space where all individuals, organizational leaders, and municipalities can identify an area of interest, community, or specific action that inspires them to engage and meaningfully contribute.**

Regional Assets

Despite these challenges, we see great potential for mobilizing the region’s significant natural and human assets to mitigate climate change and improve the quality of life for local residents. The region boasts a temperate climate with fertile soils, clean air, ample fresh water, and is fairly protected from severe natural disasters, such as wildfires, hurricanes, and sea-level rise. With nearly 6,000 farms, the Genesee-Finger Lakes region is a leader in NY State agriculture. Several counties rank first in sales on various agricultural products, including: milk, cattle, and maple syrup in Wyoming County, vegetables, potatoes, sweet potatoes and melons in Genesee County, grains, oilseeds, dry beans, and dry peas in Livingston County, and fruits, tree nuts, and berries in Wayne County. Five of the state’s top ten



PHOTO BY GRANT TAYLOR PHOTOGRAPHY, INC.

counties in agricultural sales are in the Genesee-Finger Lakes, and the region is home to 111 wineries, the most of any in New York.⁵⁶ These natural assets help buttress

the region against climate disruption and position it well to develop a diverse, resilient food and agricultural ecosystem to increase local food security and respond to the threats of climate change.

The area's built infrastructure and human capital can also be leveraged in responding to climate change. The electrical grid is already relatively clean - with just over 50% of electricity generated from non-carbon emitting sources⁵⁷ - thereby giving the region a leg up in its efforts to reduce GHG emissions via beneficial electrification. The region has a long history of innovation and entrepreneurship, from the Erie Canal to the imaging, optics, and communication industries

Frederick Douglass, and suffragette, Susan B. Anthony, who fought vociferously for the dignity, inclusion, and civil rights of African Americans and women. The legacy of these social and racial justice movements persists today and can be seen most recently in the community's response to incidents of racial violence. Furthermore, there is a strong social service and nonprofit sector, particularly in the areas of housing and racial justice. Organizations such as the Urban League of Rochester, Ibero-American Action League, Rochester Refugee Resettlement Services, City Roots Community Land Trust, Connected Communities, S2AY Rural Health Network, Foodlink, Cornell Cooperative Extension Services, and Rural Migrant Ministries, amongst others,

work to empower and support the area's most marginalized populations. To ensure that climate justice principles are incorporated into the transition to a clean energy future will require partnerships and coordinated involvement of these varied movements and organizations.

The region is home to a diverse population and a number of important cultural institutions that are assets to developing an equitable and

inclusive community response to climate change. Within the City of Rochester, approximately 68% of individuals identify as people of color, with a sizable Puerto Rican, Dominican, Chinese, and Nepalese population.⁵⁸ According to ACT Rochester, between 2015-2019, the region saw significant growth in Asian and Hispanic populations.⁵⁹ Wayne County has the largest migrant population in NY State, largely due to on-farm employment, as is the case in Ontario County, resulting in a burgeoning Hispanic population. Members of the Haudenosaunee can be found across the region, with a small concentration on the portion of the Tonawanda Reservation that extends into



PHOTO BY BLACKBIRD SON PRODUCTIONS

of Eastman Kodak, Bausch & Lomb, and Xerox. This history and infrastructure, coupled with the many local institutions working in this space, including Rochester Institute of Technology's Golisano Sustainability Institute and Pollution Prevention Institute, and Venture for ClimateTech, amongst others, enables the region to become a leader in clean energy technology and clean manufacturing as we transition to a clean energy economy.

The Genesee-Finger Lakes region also has a history as the nation's wellspring for racial and social justice movements, serving as the home to famed abolitionist,

Genesee County. Wayne and Yates counties have a growing Amish and Mennonite population, but the exact numbers are difficult to determine.⁶⁰ Beyond the region's diversity, the area's network of cultural institutions such as Ganondagan, the Wyoming County Arts Council, the George Eastman Museum, The Avenue Blackbox Theatre, Memorial Art Gallery, The Eastman School of Music, The Little Theatre, the Naples Grape Festival, the Puerto Rican Festival, the Jazz Festival, and Fringe Festival, amongst others, cultivate a sense of community and connection to place through the power of art. The idea that "art moves hearts" is especially important given the pressing need for widespread cultural shifts and new mental models necessary to respond to climate change.

Although the region is struggling to address several overlapping and persistent challenges, such as widespread poverty, structural racism, poor health outcomes, and an aging and deteriorating housing stock, the region's natural and human assets provide major advantages to responding to climate change and their potential should be thoroughly recognized and celebrated. The Genesee-FLX Climate Action Strategy seeks to capitalize on the region's natural and human assets to mount a systems-level response to the climate crisis that positions the region as a leader in cultivating an inclusive and prosperous community response to climate change.



PHOTO BY EVAN LOWENSTEIN

3. A Vision for the Future: Building a Thriving Region on a Healthy Planet

NY State's Climate Leadership and Community Protection Act is momentous for signaling the state's commitment to addressing climate change and in providing ambitious, quantitative targets for reducing greenhouse gas emissions. But *how* the CLCPA is implemented and what successful implementation looks like in each region of the state will vary

The Genesee-Finger Lakes in 2050

After the worst of the COVID pandemic laid bare the vulnerabilities and inequities in the region's transportation infrastructure, health networks, and food systems, many residents in the Genesee-Finger Lakes began rethinking their relationships with their neighbors and with the Earth. They had grown tired of *reacting* to the world in ways that increased their vulnerability and chose, instead, to become *proactive* in creating a community that nurtured their relationships with each other and their environment. Even prior to the COVID pandemic, many community leaders and local organizers had the commitment, courage, and persistence to take on social change work in the community, struggling to improve the safety, prosperity, and quality of life for local residents. Existing social movements, neighborhood associations, rotaries, faith communities, and other civically engaged organizations provided the necessary infrastructure for more widespread community engagement and planted the seeds for building a sustainable future. Increasingly, town board meetings, county legislative sessions - even local zoning meetings - became hotbeds of civic engagement, with individuals eager to take action that would stem the tide of climate change, while also improving outcomes in public health, access to local food, employment opportunities, and housing quality.

Local residents, working in concert with their elected officials and community leaders, seized the opportunities and possibilities of the clean energy economy as a means of reinvigorating the region. Now, regional citizens enjoy the fruits of their labor and

significantly. For that reason, we asked local residents, sector-specific experts, and community leaders what a thriving region on a healthy planet looks like in the Genesee-Finger Lakes region. How should we implement the goals of the CLCPA in our community? This is what we heard.

the benefits of an equitable and resilient community, wherein people and places can respond to disruption - whether social or natural. Overwhelmingly, local residents are able to achieve their full potential, maximize self-sustainability, and realize their self-worth. Respect for one another, for one's community, for one's self, and for the Earth is widespread across the Genesee-Finger Lakes region. Members of the Haudenosaunee community led the way in integrating the Seventh Generation Principle into local decision-making, which considers how decisions today to preserve natural and cultural resources impact the next seven generations to come. To actualize this principle, information and



resources are readily available, and inclusive decision-making and robust civic engagement are the norm in neighborhoods and towns across the area.

Building on its history of innovation and creativity, the region is a leader in closed-loop economic development and there is a regenerative local economy with targeted investments in local people and local



communities. Gone are the days of take, make, and waste. Now, the economy operates on the ethos of reclaiming, returning, and renewing. Consumer goods have been redesigned and reimaged to require fewer natural resources. Planned obsolescence is no longer the industry standard. Rather, “Take Back Programs” require companies and manufacturers to disassemble electronics, vehicles, appliances, and other retail items to recapture precious metals, minerals, and additional natural resources and regenerate them as part of the manufacturing process. There is an emphasis on building out local supply chains wherever possible to maximize self-sufficiency and minimize vehicle miles traveled. And waste is now a valuable commodity used to generate community wealth. Local unemployment is minimal, as more and more people are needed to fill positions from production to reclamation. Clean energy workforce development programs, local technical schools, and institutions of higher education focused on engineering and advanced manufacturing turn out a technically literate workforce and attract students from across the state. Clean, renewable energy powers the entire economic system. A combination of micro-grids, Community Choice Aggregation, and appropriately

sited renewable energy and storage provide consistent and affordable energy for all.

Convenient, affordable, safe, and comfortable forms of transportation are the norm. Residents can access employment and community amenities in a safe, efficient, and car-free manner with improved public transportation, walk and bike-ability, and widely available micro-mobility options, such as electric scooters. All-electric public transportation is an attractive, viable, and cost-effective option that meets the everyday travel needs of residents and is the preferred mode of transport. Bus stops and park-and-rides bustle with commuters and individuals taking advantage of recreational resources, restaurants, and the region’s cultural assets. An interconnected network of trails that criss-cross the region also provides a safe and aesthetically pleasing option for people to access community amenities and local recreation. Remote work is widespread due to affordable and reliable broadband and incentives that encourage working from home. For any remaining transportation needs that cannot be

met otherwise, a network of publicly available electric vehicle charging stations, electric car-sharing programs, and on-demand electric shuttles are available.

Town centers and urban neighborhoods provide opportunities for shopping, recreation, entertainment, and

community gathering, without going far from home. An expansive tree canopy, flourishing community gardens, well-maintained and accessible parks, green roofs, and other green infrastructure projects blanket the region, providing shade, cooling neighborhoods, absorbing excess precipitation, improving air and water quality,





and supplying welcoming spaces for recreation and relaxation. The region is home to a variety of indigenous flora and fauna, while songbirds trilling, crickets chirping, and bees buzzing dominate the soundscape. Children flood local neighborhoods, playing in nearby

parks and frolicking through area green spaces, free from the noxious fumes and particulate matter associated with vehicle exhaust and dirty industry.

The region has become a national leader in converting an aging and dilapidated housing stock into well-maintained, affordable, and efficient housing that is heated and cooled with high-efficiency heat pumps. Elderly populations, young children, and those struggling with chronic illness no longer have to endure sweltering heat during the summer months, as their efficient homes, cooled with an electric heat pump and ample shade, provide relief from the area's hot, humid mid-August weather. Thanks to the efforts of local tenants' rights organizations, problems with absentee landlords are no longer. Rather, money spent on monthly rent stays in the local community. Widely available healthy homes and energy efficiency programming, including for rental properties, dramatically improved the quality of the area's housing stock. Municipalities developed a building benchmarking and rating system that is easy to navigate and provides residents with upfront information on energy efficiency and utility costs, so they are well informed to make the best housing choices possible. As a result, rental properties are quieter, have good indoor air quality, are pest and mold-free, and have reduced energy costs. The average household's energy burden is well under the state's recommended six percent. And rooftops glisten as the sun dances off the ubiquitous

solar panels on the region's municipal buildings, schools, homes, and businesses.

Local residents, regardless of their location in urban centers or rural hamlets, enjoy access to locally sourced, healthy, and nutritious food. Revisions to regional procurement strategies mean that grocery stores carry local fruits, vegetables, meats, dairy, and other value-added products as well as a network of farm stands, farmers' markets, and produce carts. Universities, K-12 schools, and hospitals led the way in adopting local procurement, but the practice has become widespread and the "Grown in the Genesee-FLX" label has become commonplace. Agricultural lands and livelihoods are safeguarded against climate impacts and remain productive and resilient, thanks to the efforts of local land trusts and area soil and water conservation districts. Agricultural production and agro-tourism are major employers in the region. Proximity to Cornell University and its vast network of resources, as well as efforts to improve access to local farmland, has resulted in younger and more diverse farmers taking to the land. Retiring farmers are assured that bequeathing their land or selling it to the next generation will result in continued stewardship and production of the land.



In accordance with regional economic development strategies, local agricultural producers, including dairies and commodity crop producers, lead the nation in closed-loop, regenerative practices. Due to well-funded Soil and Water Conservation District Offices,

the vast majority of the region's farms have integrated resource management plans, including carbon plans, which assist farmers in the essential work of tracking their farm's inputs and outputs. Local farms are the cornerstone of the area's rural economies and climate considerations permeate operations throughout. Improved soil health from cover-cropping, reduced and no-till practices, and the addition of compost, manure, and biochar, maximizes productivity while promoting resilience and adaptation to climate change.

In line with national trends, plant-based, seasonal diets have become more common-place, and area demand for produce is largely met by local farmers. The region has become a beacon for agro-ecological farming practices, including organic, most notably in dairy production, and a widespread apprenticeship program ensures younger or less experienced farmers can learn from the vast knowledge of the local farming community. The elimination of synthetic fertilizers and reductions in pesticides and herbicides has improved farmworker health through reduced chemical exposure.

Thanks to public-private partnerships, the region's dairy industry has become a leader in emissions reduction practices, in part from changes to animal diet, and the widespread adoption of manure management practices.

The region's extensive healthcare network led a wide-reaching community campaign about the public health implications of climate change and the benefits of taking climate action. Healthcare providers regularly distribute information about energy efficiency, clean heating and cooling, and the importance

of eating locally sourced, plant-based diets to their patients. Upgrades to the regional transportation system have meant that more and more people can access quality healthcare, particularly in rural areas. Improved air quality, access to healthy, nutritious food, and better recreational opportunities have led to enhanced public health. For example, there has been a significant reduction in the number of individuals with cardiovascular disease and respiratory illnesses and far fewer premature and low-weight babies being born. Given the previous health disparities, much of these benefits have accrued for the region's communities of color - but health improvements can be seen across racial and income lines. Access to viable employment opportunities and quality housing, coupled with progressive neighborhood design and safety, and a renewed sense of community and possibility have resulted in improved mental health and fewer people struggling with addiction.

Developing equitable climate mitigation, adaptation, and resilience strategies required the commitment, leadership, and investment of a broad range of stakeholders from across the region. But by working collaboratively, the Genesee-Finger Lakes region has become a healthier, more equitable, and environmentally sustainable community. Local residents now live in concert with their local environment, with cascading benefits for public health and social and economic vitality.



PHOTO BY EVAN LOWENSTEIN



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4. The Genesee-FLX Climate Action Strategy

The Genesee-FLX Climate Action Strategy provides a shared understanding of our regional emission sources, a framework to guide regional actors in taking impactful climate action, and the basis for a shared system of measurement to track progress and accountability. It is not a detailed plan or a prescription for action until 2050. Rather, the recommended action items are short-term enablers targeted at different scales (e.g., individual behaviors to infrastructure projects) and advanced through varied mechanisms (e.g., advocacy and policy change, market shifts, programmatic support). Some of the action items are already underway and will build off current momentum, and others will require the development of new partnerships, programs, or educational campaigns. While the intention is to provide immediate guidance for the next 3-5 years, many of these actions will continue to be ongoing priorities. Yet, tackling immediate short-term enablers at different scales, and through varied means, should spearhead the structural changes needed to move the region toward meeting the goals of the CLCPA.

What is presented here cannot be implemented by any single entity, and is not a one-size-fits-all approach. The Genesee-FLX Climate Collective welcomes local leaders, regional experts, and enthusiastic citizens to join the various working groups and citizen action teams charged with spearheading implementation. Working groups will focus on those areas where we can make the largest impact on regional emissions - housing/buildings, transportation, renewable energy generation and storage, and agriculture. There will also be two cross-sector working groups, focused on workforce development and advocacy/community organizing. Working group participants will include key stakeholders from each issue area and lived experience experts who will identify and develop the necessary partnerships to advance strategy implementation.

As such, we offer the following strategy in the spirit of collaboration, and with the promise of possibility, expecting that local communities adapt the strategy to fit their needs, while seeking regional synergies and

*“...we offer the following strategy in the spirit of **collaboration**, and with the promise of **possibility**, expecting that local communities adapt the strategy to fit their needs, while seeking regional synergies and opportunities to share resources and best practices that advance the state’s goal of a net-zero economy.”*

opportunities to share resources and best practices that advance the state’s goal of a net-zero economy.

Experience thus far indicates that although each sector will have its unique challenges, there are several critical elements for success that span across sectors - dollars and data, amongst them. Experience also shows that climate action is a quickly evolving and changing landscape, in terms of policy, research, data, political context, and funding. As one local farmer noted - the only constant we have is change. So rather than viewing the quantitative scenario analysis work that follows as concrete representations of our regional future, we view the scenarios as schemas, directing our focus to those areas where we can make the most impact to reduce greenhouse gases and improve quality of life for all residents. The scenario analyses do, however, concretely demonstrate that time is of the essence, and that we must be much more ambitious than we might expect. Finally, experience shows that because climate change is a structural issue with multiple touchpoints and intersections, the actions selected for this strategy must also multitask, reducing emissions, while advancing equity, and yielding improvements for the everyday lives of citizens today.

Critical Elements for Success

There are several critical elements needed to successfully implement the systems-level changes necessary to address climate change. Access to regionally specific data, equitable investment, and a streamlined system for navigating service providers and relevant resources are needed to ensure that progress is being made, to fund solutions, and to facilitate community action.

REGIONALLY SPECIFIC, RELIABLE DATA

A key feature of collective impact work is a shared system of measurement to track progress, improve transparency, and maintain accountability. Therefore, access to regionally specific, reliable, and consistent data is necessary to have a clear understanding of regional impacts and to measure progress on regional indicators. Currently, relevant data is not consistently or reliably collected, not available for our region, not publicly available, and/or not available at the correct resolution (e.g., timeframe, level of aggregation, etc.). Additionally, depending on the sector, there is not always scientific consensus on the best means of measuring greenhouse gas emissions and potential carbon sequestration. Agricultural production provides a salient illustration. The complexity of agricultural production, generally, and the variation in farm practices make generalizations about agricultural emissions and the impact of various mitigation measures complicated. Moreover, changes in weather, feed type, cow behavior (e.g., amount of food consumed), manure management practices, and markets can cause farm-based estimates to change year over year, making future projections difficult.

There is little historical precedent for collecting and analyzing the scope and scale of data needed to track local progress on climate change. Addressing data challenges will require coordination and collaboration amongst the many stakeholders already working with regionally relevant data, and that process has already begun. In some instances, changes in state and federal practices about what data is collected, and at what scale, are needed. Yet, the urgency of the climate crisis means that we cannot wait for perfect data. Rather, we must critically analyze the data we do have, and

identify opportunities for taking impactful action that reduces emissions and improves equity and quality of life for local residents. (For a full explanation of the data assumptions and methodologies, see Appendix B.)

Moving forward, we will continue to advocate for guidance and direction from the state and federal government to improve data tracking and collection. But simply having data is insufficient; it also has to be accessible. As such, our intention is to develop a locally relevant and user-friendly interface to measure regional progress, learn from our efforts, ensure equitable outcomes and processes, and refine and evaluate the strategy as needed.

EQUITABLE INVESTMENT

While we know the transition to a clean energy economy is happening, there is no guarantee that it will be equitable. Currently, climate-friendly products and services are typically more expensive than their polluting counterparts, so until this market failure is corrected (e.g., through carbon pricing), fully transitioning to clean energy may be unaffordable for many households and businesses. Local municipalities also struggle with financing and affording climate-friendly upgrades and investments, particularly in smaller, rural communities. **Without securing access to climate solutions for all community members, an equitable net-zero economy is not possible.**

Thus far, the state has not provided a funding mechanism for the CLCPA. We will continue to advocate for full funding of the law. Even with state investment, it will be necessary to leverage federal dollars and private investment to scale up solutions at the rate needed to stem climate change. Therefore, local decision-makers must develop an understanding of the various financial tools available to implement climate solutions, with a focus on deploying resources in a manner that does not reproduce or exacerbate existing inequalities. This will require that we prioritize investments in disadvantaged and vulnerable communities first, and explore innovative financing solutions that create opportunities for community wealth-building. Local funders will have an important role to play in developing a philanthropic network to increase funding accessibility and to identify

financing gaps. Possibilities for funding solutions include American Rescue Plan Act dollars and other federal infrastructure dollars, green municipal bonds, donor-advised funds through local foundations, federal and state grants and incentives, Property Assessed Clean Energy programs, on-bill financing and repayment programs, the New York Green Bank, crowdfunding projects, revolving loan programs, climate funds, no and low-interest loan programs, and other creative financing solutions.

“Investing in climate solutions is critically important, but so is stopping investment in anything that contributes to the climate crisis.”

Investing in climate solutions is critically important, but so is stopping investment in anything that contributes to the climate crisis. Public money is currently supporting development projects that use fossil fuels, are not accessible by public transit, produce excessive waste, and/or extend our reliance on fossil fuel infrastructure. We believe this to be an unwise use of taxpayer dollars and will continue to advocate for an end to the investment of public dollars in projects that do not bring us closer to meeting CLCPA goals.

Scenario Analyses

After completing the baseline inventory of regional greenhouse gas emissions, the Stockholm Environment Institute modeled a suite of actions, or mitigation measures, to better understand the potential for emissions reductions. Although SEI's model did not quantitatively assess the economic or health benefits of different mitigation measures, priority was placed on modeling measures that 1) aligned with the visionary elements from the focus groups, 2) maximized co-benefits for the community, and 3) reduced greenhouse gas emissions. SEI developed three different scenarios:

STREAMLINED SYSTEM OF PROVIDERS AND RESOURCES

In addition to accessing data and financing, there is considerable need to streamline existing service providers and coordinate programs and resources.

Currently, there is a dizzying array of local, state, and federal programs to improve housing access, health, and clean energy adoption. For example, there is the federally administered Weatherization Assistance Program (WAP) and the Housing and Urban

Development (HUD)'s HOME program.

State programs include the Home Energy

Assistance Program (HEAP), and the

Affordable Housing Corporation (AHC),

while NYSERDA administers the EmPower

program, Assisted Home Performance

program, Clean Heating and Cooling

Campaigns, and NY-Sun, amongst others.

There are also local lead and mold

abatement resources, and programs

through Action for a Better Community

(ABC), RENEW, NeighborWorks, PathStone, and the local

utilities, to name a few. It is not surprising that residents

can easily become confused and overwhelmed when

trying to access these programs. Therefore, it will be

necessary to establish a “no wrong door” network of

partners, including healthcare providers, that work

together to increase access to home/building energy

upgrades, using a comprehensive “healthy homes”

approach.

1) existing federal and state policy, 2) existing policy plus low ambition targets, and 3) existing policy plus high ambition targets. Given the large uncertainties associated with projecting emissions over 25 years into the future, the scenarios do not provide a prescribed path forward for meeting CLCPA goals. Rather, the scenarios provide useful guidance in evaluating different pathways to “close the gap” between existing and projected emissions and the state's climate goals. See Figure 7: Comparison of Genesee-Finger Lakes Mitigation Scenarios.

Comparison Between Regional Greenhouse Gas Emissions Mitigation Scenarios

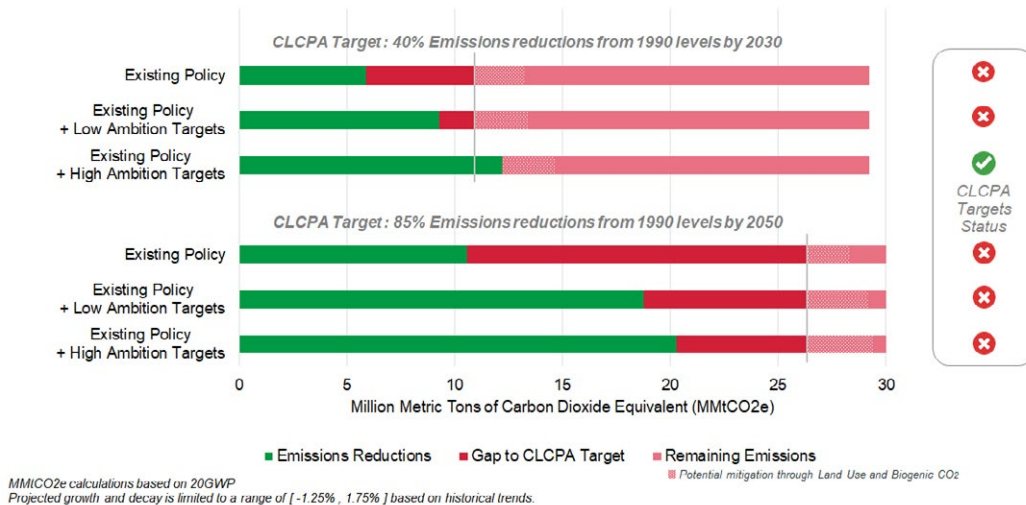


FIGURE 7: COMPARISON OF GENESSEE-FINGER LAKES MITIGATION SCENARIOS

EXISTING POLICY SCENARIO

The existing policy scenario includes current state and federal policies aimed at improving efficiencies and reducing emissions. Some of the policies in this scenario include compliance with NHTSA CAFE fuel economy standards, Regional Transit Services (RTS) bus electrification, the transition of all light-duty new vehicle sales to zero-emission vehicles, basic and deep shell retrofit targets for residential and commercial buildings, and improvements to industrial efficiency, among others. See Appendix B for a full description of the policies and target dates included. According to this scenario, the largest potential for emissions reductions comes from grid decarbonization and transportation measures. Despite gains in these sectors, analysis shows that existing policies alone do not bring the region close to meeting CLCPA goals. Rather, we need well-coordinated, collaborative action to make larger gains in emissions reductions.

EXISTING POLICY + LOW AMBITION TARGETS SCENARIO

The existing policy plus low ambition targets scenario incorporates a series of mitigation measures identified through public engagement efforts, a review of various regional town, city, or county plans, a review of the scientific literature, and a review of relevant case studies or comparable examples, including the state’s own scenario analyses. Broadly, scenarios include mitigation measures pertaining to 1) vehicle

miles traveled (VMT), 2) efficiency standards and fuel-switching for vehicles, 3) building energy efficiency, 4) fuel-switching in buildings, 5) soil health practices, 6) agricultural waste management, and 7) grid decarbonization. Specific measures from each category were included as well as a corresponding rate of adoption or emissions reduction target date. For example, the measure “Reduce VMT” had a corresponding target of 10% reduction through public transportation, biking, walking, and working from home by 2030 and 20% reductions by 2050. See Appendix B for a full description of the methodology, assumptions, and targets involved in the scenario and Section 5 for a more detailed description of the various mitigation measures. In the existing policy plus low ambition target scenario, the largest potential for emissions reductions comes from transportation, with buildings, and agricultural/forestry bringing significant potential as well. ***In this scenario, the region comes just shy of meeting the state’s 2030 CLCPA goal of 40% emissions reductions from 1990 levels, but does not meet the state’s 2050 goals.***

EXISTING POLICY + HIGH AMBITION TARGETS SCENARIO

The existing policy plus high ambition targets scenario incorporates the same mitigation measures included in the previous scenario, but increases the rate of adoption or accelerates the target date for meeting emissions reduction. For example, in the low ambition

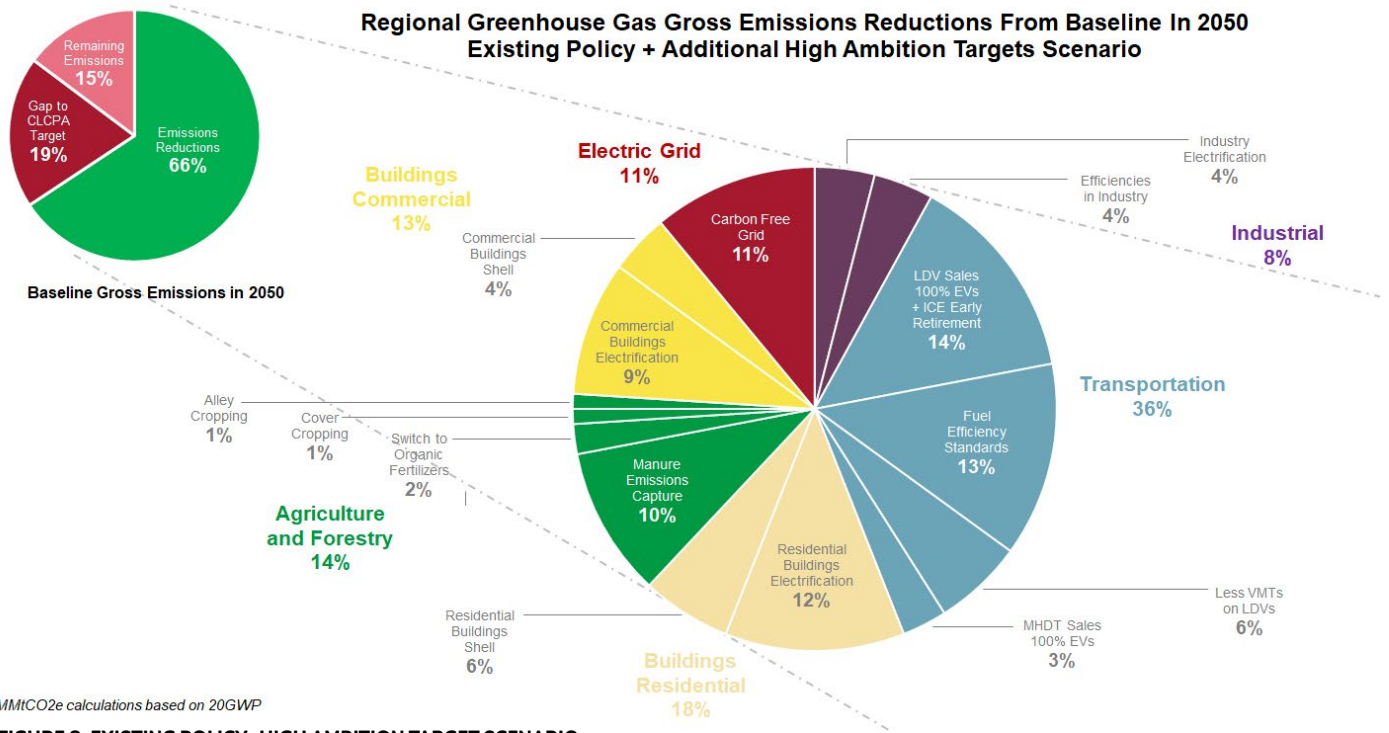


FIGURE 8: EXISTING POLICY+HIGH AMBITION TARGET SCENARIO

scenario, the adoption rate for the mitigation measure “Reduce VMT” through public transportation, biking, walking, and working from home” increases from 10% by 2030 and 20% by 2050, to 25% by 2030 and 35% by 2050 in the high ambition scenario. See Appendix B for a full description of the methodology, assumptions, and targets involved in the scenario and Section 5 for a more detailed description of the various mitigation measures. In this scenario, **the region does meet the 2030 CLCPA goal, but does not meet the 2050 goal**, with significant emissions remaining in the agricultural, waste, and transportation sectors. See Figure 8 for the results of the high ambition scenario.

The scenario analyses indicate that implementing the high ambition target measures will be sufficient for meeting the 2030 goal, but more aggressive implementation targets (e.g., faster or more widespread adoption) and/or additional mitigation measures are still needed to meet the 2050 goal. For example, both the agricultural sector and waste sector provide significant opportunities for emissions reductions that could align the region with the state’s 2050 goals. In the agricultural sector, many mitigation measures, particularly with regard to livestock emissions, are still in the research

and development phases, and not widely available at a commercial scale. As such, these technologies were not included in SEI’s modeling, and provide significant potential for emissions reductions as they become more widely available. Additionally, approximately 40% of the state’s landfill capacity is within the Genesee-Finger Lakes region and the methane emissions from these landfills significantly impact the region’s overall emissions.⁶¹ Although the Seneca Meadows landfill in Seneca County is slated to close in 2025, the landfill will continue to produce methane emissions. Furthermore, the waste currently entering the Seneca landfill will necessarily be directed elsewhere. Reducing and diverting waste (e.g., through composting) within the region will help to decrease emissions from this sector. However, given the region’s role in the state’s overall waste management strategy, waste reduction and diversion practices must necessarily become a collective statewide endeavor. As we build the collective capacity of the region to take action and await the state’s full regulatory framework, the data here indicate which actions are likely to be most impactful, where we should prioritize our investments, and how quickly we must move to align the region with CLCPA goals.

A Strategy for Action in the Genesee-Finger Lakes Region

The Genesee-FLX Climate Action Strategy focuses on transportation, building, agricultural sectors, and electricity generation because they provide the greatest opportunity for regional emissions reductions. While transportation, agriculture, and buildings contribute the majority of GHG emissions, the importance of a decarbonized electrical grid for meeting sectoral goals means it has been included as a major priority in this climate action strategy. What follows is not an exhaustive list of potential actions, but reflects what we know to be best practices for reducing emissions,

while optimizing the co-benefits of climate action. Although there are certainly notable emissions from the industrial, commercial, and waste sectors, some of the same practices put forth here (e.g., energy efficiency and building electrification) can help reduce emissions in these sectors, while practices from the agriculture/food/forestry sector can help divert regional waste streams. Eventually, the strategy will evolve to include additional mitigation measures and other sectors necessary for reaching a net-zero economy. See Section 5 for the full details for each measure.

Energy Generation

The CLCPA requires 70% of the state's electricity to come from renewable sources by 2030 and that all electricity be generated from carbon-free sources by 2040. To meet these goals, the CLCPA also requires 6,000 MW of distributed solar by 2025 and 3,000 MW of energy storage by 2030 statewide.⁶² Although over half of the electricity generated locally is from carbon-free sources, greening the remainder of the grid and building out grid infrastructure will provide year-over-year gains in emissions reductions as we move to electrify other sectors.

Aggressive deployment of renewable energy generation is needed, particularly as the demand for electricity increases. The state estimates an increase of 65%-80% in electricity demand by 2050.⁶³ Although there is general consensus that the region needs renewable energy, there is no consensus about how we should meet that need. While there is precedent for large renewable energy generation projects in the region (e.g., roughly 300 wind turbines in Wyoming County), there is also tension around the scale, siting, and ownership of renewable energy generation and storage projects. Ensuring that renewable energy generation and storage projects meet the cross-cutting considerations of equity, economic development, public health, and ecological stewardship will necessitate consultative site selection processes for all new large-scale clean energy projects



and innovative design, deployment, and ownership opportunities for distributed generation and distributed energy resources.

Regionally, some of the structural barriers to equitable and ecologically sound renewable energy generation include 1) spacing/siting of renewable energy projects, 2) overall grid reliability (e.g., aging infrastructure, poor vegetation management, battery storage), and 3) affordability. Action items to help overcome structural barriers and advance the cross-cutting considerations include:

Educate local municipalities and residents about the costs and benefits of renewable energy projects of varying types, the impacts for local environments and communities, and the process for navigating strong community benefits agreements (CBAs).

A variety of factors can prevent or delay the adoption of energy generation and storage projects, including misinformation and misunderstanding about the different types of projects (e.g., utility-scale, community solar, microgrids), the amount, quality, and value of land involved (particularly vis-a-vis other land-uses), the safety of generation and storage, and concerns about the decommissioning process. Additionally, there is no uniform system for payments-in-lieu-of taxes (PILOT) that is enforceable across all jurisdictions, creating confusion. Sharing

information, lessons learned, and best practices amongst municipal leaders and local residents promotes transparency and collaboration and empowers communities to make informed decisions about energy generation and storage.

Facilitate a community-wide conversation about the role of nuclear energy, hydrogen, and biogas in the local energy mix.

Currently, there is widespread disagreement (even amongst the climate movement) about what role (if any) nuclear energy, hydrogen, and biogas should play in the transition away from fossil fuels. Misinformation and misunderstanding about the benefits, feasibility, and effectiveness of these technologies make informed decision-making difficult. As the recertification process for the Ginna Nuclear Power Plant draws near, and as the community moves to make

decisions about investing in our renewable energy infrastructure, there will be a growing need for an informed citizenry and local decision-makers.

MORRIS RIDGE SOLAR PROJECT

The Morris Ridge Solar Project, in the town of Mt. Morris, is a renewable energy project under development for 177 MW of solar generating capacity and 83 MW of energy storage. The project is set to go online in 2023 and will produce enough electricity to power 38,000 New York households, the equivalent of almost all of Livingston County and nearby Wyoming County combined. Town officials and local community members overwhelmingly supported the project due to the many community benefits the town negotiated with the developer, EDF Renewables. Amongst the benefits, the town will be able to expand water service beyond the current boundaries to the rest of the township, providing a much-needed service to local residents. Additionally, the project will provide the Mt. Morris Central School district over \$10 million during the first 20 years of the project, and a partnership with the local BOCES will provide students with hands-on learning opportunities in electro-mechanical construction and metal trades. By agreeing to host a large-scale solar project, NYSERDA provided several EV charging stations along the town's Main Street, an added draw for local tourism. Finally, local residents are looking forward to the cultivation of wildflowers, berry bushes, and other native plantings amongst the panels, promoting biodiversity and improving local ecosystems.⁷⁰

Drive rooftop solar installations through coordination of resources for local incentives and service providers, via an “energy navigators” program.

Balancing large-scale renewable energy projects with distributed energy generation can promote energy independence, reduce grid demand, and maximize land-use opportunities. Many

homeowners and businesses are interested in on-site renewable energy generation, but are unsure where to begin or how to access available resources and incentives.

Pilot/support proof of concept for renewable energy projects of varying types (e.g., community solar, microgrids, agrivoltaics) that advance innovative design and ownership models.

Developing and demonstrating the viability of renewable energy projects that generate wealth for local communities and maximize multi-use generation opportunities is necessary to equitably decarbonize the electrical grid. Community solar projects and microgrid projects can advance equitable access to renewable energy technology for those who are not homeowners or are unable to install on-site solar, with potential savings

reinvested in local communities. Microgrid projects provide the opportunity for community control and management of energy resources. Multi-use generation opportunities, such as combining solar with agriculture (agrivoltaics), on multi-family housing, or parking lot solar generation and storage, can maximize land use opportunities and energy generation.

Participate in rate cases to advocate for grid reliability, equitable rate design, and programming that encourages electrification.

Until the Public Service Commission requires utilities to reduce emissions in accordance with state law, build out the grid to support electrification, and implement policies and programming to assist LMI households with building electrification, intervention

in utility rate cases will remain a primary mechanism for advancing these goals.

Transportation/Land Use

Transportation is the largest source of regional emissions at 33%. Most of the transportation emissions come from light-duty vehicles (small trucks and cars). According to the state's Draft Scoping Plan, the state will need approximately 3 million zero-emission vehicles (ZEVs) by 2030 and 10 million ZEVs in use by 2050.⁶⁴ However, upfront costs of ZEVs mean that alternatives to single-occupancy vehicles must also be prioritized as a climate justice solution. Reducing transportation emissions and improving transportation infrastructure will require changes to land-use decision-making, but will also help to address some of the regional inequities in accessing employment opportunities and community amenities. Regionally, some of the structural barriers to reducing transportation emissions



PHOTO BY EVAN LOWENSTEIN

include 1) land-use decisions that locate economic development and daily necessities outside of city/town/neighborhood centers, 2) deeply ingrained “car culture,” 3) affordability and other inequities, e.g., commute times, and 4) inadequate EV infrastructure.

Action items to help address these barriers fall into two broad categories: reducing vehicle miles traveled (VMT) and transitioning remaining VMT to zero-emissions. To accomplish this will require making multi-modal transportation (e.g., public transportation, walking, biking) the more attractive transportation option and to make zero-emission vehicle technology and infrastructure more equitably available. Action items to help overcome these barriers include:

“Investing in robust public transit systems that are frequent, reliable, connected, and operated with zero-emission bus fleets, is a key solution for climate change,” said RTS CEO Bill Carpenter. “Pairing an expanded public transit system that is convenient for more people with a zero-emission fleet of vehicles is a good way to get people to drive less. It also grows jobs and the economy, and strengthens community efforts related to education, healthcare, mental health, and social justice.”

RTS ELECTRIC BUSES

In the Fall of 2020, Regional Transit Service (RTS) unveiled its first ten electric buses and will be adding another ten electric buses in 2022. Additionally, RTS is working to secure funding for a bus storage and charging depot to facilitate the transition to zero-emission vehicles. RTS has the second-largest electric bus fleet in the state and is working to meet New York State's goal of having 25% of its bus fleet zero-emission by 2025, and 100% by 2035. According to the EPA, a single zero-emission bus is able to eliminate 1,690 tons of carbon dioxide over a 12-year lifespan of a bus, which is the equivalent of taking 27 cars off the road. By converting to ten electric buses, RTS has removed the equivalent of 270 personal vehicles from the road. Additionally, RTS can save approximately \$187,000 in fuel and maintenance costs over the life of each electric bus. By going zero-emission, RTS is able to reduce greenhouse gas emissions and improve air quality along its routes.



PHOTO BY ABBY MCHUGH-GRIFA

Advocate for more funding for RGRTA's operations budget.

Maintaining low costs for riders and improving service (e.g., increasing frequency, expanding routes) will require further investment from the state and federal government.

Local municipalities commit to pursuing Climate Smart Communities (CSC)/Clean Energy Communities (CEC) certification and begin implementing action items that advance complete streets policies, safe routes to schools, infrastructure for biking and walking, and EVs.

CSC/CEC programs are NY State programs designed to provide local governments with technical resources, grants, and rebates for implementing climate-friendly practices, many of which are aimed at altering inequitable land-use patterns. Committing

to the Genesee-FLX Climate Action Strategy and working collaboratively with the Climate Collective and citizen action teams will help to advance many of the priority steps in the CSC/CEC programs.

Pilot project/proof of concept for electric vehicle sharing/electric shuttle services.

EV car sharing and on-demand shuttle services can reduce the number of individuals/households in need of personal vehicles, reduce congestion, and improve first/last mile connections to public transportation hubs. Car sharing and shuttle services

also make ZEV technology more widely accessible to those who cannot afford the upfront costs of a ZEV or who do not have access to vehicle charging infrastructure.

Support local efforts to complete an interconnected, regional network of strategically placed trails that cross municipal boundaries and link people to economic opportunities and amenities.

Several organizations, including the Genesee Transportation Council, Letchworth Gateway Villages, and Friends of the Genesee Valley Greenway, among others, have worked to expand a regional network of trails to promote tourism and recreation and this work should be supported. Providing safe, alternative, and aesthetically pleasing

multi-modal transportation options that take people where they need to go is necessary to outcompete single occupancy vehicles as the primary mode of transportation. A regional network of trails can improve access to natural spaces, contribute to public health, promote rural tourism, and contribute to a shared sense of regional identity.

Advocate that federal/state infrastructure funding be used to expand broadband infrastructure.

Equitable access to online information, resources, learning, and employment opportunities is both a social and economic justice issue and can

potentially reduce vehicle miles traveled due to a reduced need for commuting.

Participate in rate cases and advocate for more equitable rate design for off-hours EV charging.

Lower rates or other incentives to encourage off-peak charging and/or controlled, managed charging will make electricity rates for vehicle charging more affordable and help to reduce demand on the electrical grid.

End investment of public funds for development projects that are not accessible by public transit.

Public money is currently supporting development projects that use fossil fuels, are not accessible by public transit, produce excessive waste, and/or extend our reliance on fossil fuel infrastructure. Such strategies are not in line with CLCPA goals and often do not advance equitable access to economic, social, and cultural resources.

FLOSHARE

Floshare is the first EV car sharing program in our region and is made possible by a partnership between Mobility Development and the City of Rochester. Similar to bike loan or other car sharing programs, Floshare provides access to fully electric vehicles and the charging infrastructure for an hourly fee of \$5/hour. Currently, members have 24/7 access to a network of vehicles at the Rochester Public Market and St. Mary's Campus, with an official launch expected in Summer 2022. Floshare is committed to transportation equity, and is working to keep hourly rates low to make EV technology more widely accessible. Bree-Ana Dukes Program Manager of FloShare says, "As partners within the shared mobility space, we understand the need for equitable and accessible transportation as being just one of the many ways to ensure society keeps justice at the forefront of climate solutions. The use of electric car sharing services benefit communities environmentally and economically. Rochester residents can feel good that they are contributing less to greenhouse gas emissions as well as saving money on personal vehicle ownership costs and maintenance."



PHOTO BY FLOSHARE

Agriculture/Food/Forestry

Agricultural production constitutes 22% of regional GHG emissions, with the majority coming from non-energy sources, such as the manure and enteric fermentation associated with dairy production. In the U.S., the dairy industry has improved significantly in its efficiency and overall environmental impact. For example, the GHG emissions associated with the production of a gallon of milk have reduced by $\frac{2}{3}$ since the mid-1940s. But, more remains to be done to bring the industry in line with state law.

The dairy industry is a major economic driver for New York State and locally. New York is the third-largest producer of dairy in the U.S. and Wyoming County is the largest producer of milk in the state.⁶⁵ Emissions reductions in such a large and economically important sector will not be easy. Perhaps more than other sectors, the agricultural sector and associated emissions are highly intertwined with the global economy and with national policies that significantly impact regional farms. Moreover, local communities have a vested interest in what happens

on area farms and access to nutritious, locally sourced food was a common theme amongst focus group participants. The barriers to emissions reductions and to developing a local food system are particularly

complicated and include 1) accurately measuring GHG emissions associated with agricultural production, potential carbon sequestration, and mitigation impacts,



PHOTO BY GRANT TAYLOR PHOTOGRAPHY, INC.

2) market prices for agricultural commodities that are heavily influenced by global trade, 3) inequitable distribution of federal farm policies and state grants, 4) access to affordable, productive land for farmers, 5) farmer access to information about climate-friendly agricultural practices and costs/access to associated technologies, 6) farmer access to local markets for farm products, and 7) inequitable community access to fresh, nutritious food due to cost and transportation constraints. Given the difficulty and complexity of reducing emissions in the agricultural sector, action items to overcome these barriers focus on developing a better understanding of the opportunities and challenges associated with climate-friendly agricultural production and improving our local food system. Action items include:

Advocate for, and support, reliable, accessible, and locally relevant data on GHG impacts of farming and potential for carbon sequestration.

Access to good data is necessary to help farmers and farm-adjacent practitioners develop a better

understanding of where farm emissions come from, the effectiveness of various mitigation measures, and the potential for carbon sequestration. This information is needed for farmers and practitioners to make informed decisions about which practices



PHOTO BY GRANT TAYLOR PHOTOGRAPHY, INC.

are best suited for a particular farm. Reliable, accessible, and locally relevant data for the agricultural sector is also important from a regional

decision-making/planning perspective to track local progress in emissions reductions.

Facilitate community conversations with farmers, including dairy farmers, and farm experts about the opportunities and challenges associated with greenhouse gas emissions reductions, agricultural production, and climate change.

Given the state's reliance on farmers, foresters, and others managing the state's working lands to sequester carbon emissions, their voice should

be centered in conversations about how best to integrate climate-friendly production, while meeting the needs of producers and their land.

Raise awareness about the impacts of dietary choices on regional emissions.

Understanding how dietary choices impact local emissions may lead to shifts toward more climate-friendly diets.

Increase peer-to-peer farmer education on the benefits of soil health practices.

Receiving information from a trusted source, and someone who has already undertaken similar practices, is likely to increase soil health adoption practices and provide space for farmers to ask specific questions unique to their farm. Farmers should be compensated for the time they take away from their own farm to educate others and learn about climate-friendly production practices.

Increase community gardens, green space, tree planting, and other green-beautification efforts.

Increasing community gardens can improve food security and provide culturally appropriate food options for individuals in the community/neighborhood. Additionally, green spaces, tree planting, and other green-beautification initiatives help to reduce temperatures, improve air quality, absorb excess precipitation/wastewater run-off and provide aesthetic benefits.

WILD HILL FARM

At Wild Hill Farm in Ionia, NY, their mission is “Building community through healthy food and love of the land.” An organic vegetable farm, Wild Hill provides fresh produce, herbs, and flowers to roughly 250 members through the community supported agriculture (CSA) model. CSA models foster a direct partnership between eaters and farmers, making organic, fresh produce available at a fair price, by directly supporting farmers, and eliminating intermediaries that add additional costs. At Wild Hill farm, members are invited to the farm to pick-up their abundant share of organic carrots, greens, peppers, squash, potatoes, and more. Farmer Erin employs time-honored agricultural techniques, like cover cropping, adding compost, and planting flowers to attract beneficial insects and promote biodiversity to build healthy soil and eliminate the need for pesticides and chemical fertilizers. Besides reducing emissions and improving the land, these techniques help build resilience to climate change and promote sustainability. The 128 acres of woods and fields at Wild Hill farm will also be protected in perpetuity through a conservation easement with the Genesee Land Trust. Farmer Erin believes conservation easements are an essential tool for ensuring a future with fresh food, scenic open space, and a continued agricultural heritage.



Identify two large, local institutions that will commit to transitioning their procurement strategies to locally sourced, sustainably grown, plant-based foods and regenerative meat and dairy, with preferential contracts for farmers who are using soil health practices.

Local institutions with significant purchasing power can have an impact on the local food system by providing a guaranteed market for farm products. Prioritizing locally sourced, sustainably grown, plant-based foods and regeneratively grown meat and dairy can also shift the dietary habits of individuals engaged with the institution as they become accustomed to these dietary practices.

Pilot/proof of concept for community composting systems, including municipal, residential, and institutional settings.

Composting food waste not only helps to reduce landfill emissions, but also works to improve local soil quality. Many individuals, particularly renters, do not have access to the space needed to maintain their own composting operation, and community composting systems would provide a way to divert this waste and build community value. If large institutions with a significant amount of food waste (e.g., higher education institutions, hospitals, etc.) establish composting practices, this could significantly reduce emissions, create valuable compost for their organization's campus, and provide learning opportunities.

HUNT COUNTRY VINEYARDS

Recipients of the 2020 Sustainability Award from the New York Wine and Grape Association, the Hunt family has been farming the land off Keuka Lake for seven generations. At Hunt Country Vineyards, soil health is of paramount importance for their vineyard grapes, so they amend their soil using only compost from on-farm composting operations and poultry manure. The Hunts recognize the impacts of climate change on their farm and prioritize good soil health to improve their farm's resiliency against variabilities in weather that can impact production.

Their *Uncharted Terroir* wine is created with regional grape varieties that are able to survive under tough environmental conditions and reflect the unique identity of the Finger Lakes region.

"At its best, winemaking involves capturing the unique essence of your place and practices in every bottle of wine - capturing the terroir," Hunt says. "Obviously, changes in the global climate directly impact our terroir. So by definition, if you're passionate about wine and winemaking, you have to be passionate about addressing the climate crisis." Beyond improving soil health, they have installed a 348-panel solar system and geothermal technology to power and heat/cool their operations, as well as 5 EV charging stations for customers. Their commitment to addressing climate change does not stop at the farm's edge. Hunt Country Vineyards is the first winery in New York State to join the International Wineries for Climate Action, working collaboratively to decarbonize the wine industry. "There's only so much we can do as one small family-run business," Hunt says. "But by joining up with a community of peers, including some of the largest wineries in the world, we can move faster and have a much larger collective impact."



PHOTO BY HUNT COUNTRY VINEYARDS

Increase financial resources, including grants and no-to-low cost financing mechanisms, for farmers to implement climate-friendly farming methods, such as manure management practices.

Climate-friendly knowledge and technology must be accessible to all farmers. The often tight profit margins on farms and the high upfront costs associated with adopting some climate-friendly farming practices mean that these practices would remain out of reach for many farmers without access to incentives and innovative financing mechanisms.

Payment for ecosystem services and other incentivization mechanisms that support adoption of soil health practices.

Payment for ecosystem services (PES) programs compensate farmers for the ecological services they provide (e.g., water purification, carbon sequestration, reduced flooding), incentivizing or rewarding them for implementing climate-friendly practices.

Buildings

Buildings, both residential and commercial, make-up 25% of regional emissions, largely from the natural gas used to heat buildings and power stoves, water heaters, and dryers. According to the state's Climate Action Scoping Plan, more than 250,000 homes and thousands of commercial buildings each year will need to be retrofitted for energy efficiency and electrification, a tenfold increase from annual adoption today.⁶⁶ Increasing energy efficiency and

electrification can make homes more comfortable and healthier and reduce GHG emissions. There are, however, several structural barriers to reducing emissions in the building sector including 1) upfront costs of technology and difficulty in financing such improvements, 2) an aging and deteriorating housing stock, 3) the difficulty of navigating local, state, and federal programs and incentives, and 4) the split incentive in rental properties. Actions to address these barriers include:

Deploy energy navigators to conduct large-scale education and outreach efforts, especially for low-moderate income (LMI) households and those most vulnerable to climate change impacts.

Many individuals do not know the benefits of, or resources for, energy efficiency or beneficial electrification adoption. Energy navigators can

provide program and loan application assistance, and coordinate with partners to enable holistic clean energy projects by leveraging relevant programs, services, and funding sources.

Streamline application processes for energy efficiency programs and develop processes to braid funding for energy efficiency work.

Streamlining access to program resources and funding mechanisms will make taking action easier and more affordable, likely increasing adoption of clean energy projects.

Pilot project/proof of concept for three district or community geothermal projects, with varying ownership models.

Community or district geothermal projects will make geothermal technology available to more households, including the potential for multi-family buildings, through shared field loops, rather than requiring individual loops for each building. This will accelerate the rate of adoption and has the potential to lower overall costs, as they are spread across the community. Different ownership models (e.g., municipal-owned, community-owned, and private, third-party ownership) will enable side-by-side comparisons of the strengths/challenges of each model and provide comparable and shareable lessons learned.



Identify two local lenders to pilot innovative financing strategies (e.g., zero-to-low interest financing, gap funding) to overcome upfront cost barriers to building electrification.

Upfront costs for energy efficiency and building electrification serve as barriers to implementation. In 2020, NYSERDA's Green Jobs-Green NY program offered limited time 0% financing for residential clean energy improvements and the entire fund was exhausted in two weeks - demonstrating that this type of financing strategy, or other innovative ones like it - can increase adoption dramatically.⁶⁷

Intervene in rate cases to advocate for more equitable rate design to support building electrification.

As households electrify their heating systems and adopt on-site renewable energy, this shifts the currently established mechanisms for determining electricity rates, which could negatively impact low-to-moderate income customers. Equitable rate design is necessary to ensure LMI households can afford to adopt electrification practices and that the cost of our energy system is equitably distributed.

HOME LEASING

Rochester's Home Leasing is a Certified B Corp that specializes in development, construction and property management with a mission to "Improve the lives of our residents and communities in which we work." Providing energy efficient affordable housing is a top priority. Home Leasing partners with local non-profit organizations, such as Spiritus Christi and Trillium Health, to provide supportive housing for the formerly incarcerated, those struggling with substance abuse, and those with HIV/AIDS at risk of homelessness, making energy efficient housing available to those most vulnerable to climate impacts. Home Leasing builds to high standards of green energy code and often includes utility costs in the rent so that residents have predictable and affordable housing costs. Several of their properties include on-site solar, and in partnership with its founder, Nelson Leenhouts, Home Leasing utilizes an 8-acre solar farm to supply electricity for 500 of its housing units. Home Leasing has been a Certified B Corp since 2017, requiring they meet high social and environmental standards, as well as maintain a governance structure that is accountable to all stakeholders. "Home Leasing is committed to develop and manage its properties in a manner that will help address climate change through the use of green building technologies," said Bret Garwood, CEO of Home Leasing and Home Leasing Construction. "The affordable housing industry has long been at the forefront of the use of green building technologies and high standards for energy efficiency and we are proud to be part of that effort."

Local municipalities pursue Climate Smart Community/Clean Energy Community designation and implement strategies to increase building efficiency, including building benchmarking (beyond public buildings) and adoption of stretch codes.

CSC/CEC programs are NY State programs designed to provide local governments with technical resources, grants, and rebates for implementing climate-friendly practices around energy efficiency and building electrification. Committing to the Genesee-FLX Climate Action Strategy and working collaboratively with the Climate Collective and citizen action teams will help to advance many of the priority steps in the CSC/CEC programs.

Adopt minimum energy standards for rental properties.

Minimum energy standards for rental properties will spur widespread adoption of energy efficiency measures that can improve indoor air quality and reduce utility bills, thereby helping to address the “split incentive” problem.

Advocate to sunset gas in new construction by 2024 and sunset gas in end-of-life system replacements in existing buildings by 2028.

Research shows that upfront costs in new residential and commercial buildings of all-electric heating and cooling are lower than similar systems powered by natural gas and that when combined with equitable rate design, overall operating costs can be up to 5-10% less than natural gas systems.⁶⁸ This recommendation is consistent with the state’s Draft Scoping Plan’s recommendations.

End investment of public funds for development projects that use gas.

Public money is currently supporting development projects that use fossil fuels, are not accessible by public transit, produce excessive waste, and/or extend our reliance on fossil fuel infrastructure. Such strategies are not in line with CLCPA goals.

Miscellaneous/Economy-wide

Currently, the cost of fossil fuels does not account for the true social and environmental costs of production, distribution, and consumption. Taxpayers and individuals bear the brunt of the costs associated with rebuilding homes and businesses after damaging floods, for asthma-driven emergency room visits due to poor air quality, and for polluted water supplies associated with extracting natural gas, amongst others. Furthermore, climate impacts and stressors (e.g., extreme weather, famine, and conflict over natural resources) will negatively impact our own community, and drive individuals from outside the region here in search of a more stable and secure place to build their lives and raise their children. Welcoming new residents to the area brings exciting possibilities for our local economy and culture, but we must be prepared to meet the needs of those already here, as well as those entering the region. A well-organized, and resourced, community dedicated to creating a clean and sustainable future is necessary to revive our local economy, rehabilitate our housing stock, and reconnect our neighborhoods and towns through a robust transportation network. Key enablers to bringing about the economy-wide changes necessary to accomplish this future include:



ROCHESTER YOUTH CLIMATE LEADERS CALL FOR THE DIVESTMENT OF PENSION FUNDS FROM FOSSIL FUELS.
PHOTO: TERRY SMITH

Build citizen support of, and capacity for, climate action by educating local residents about climate issues and solutions, and organizing and mobilizing local citizens to take action.

The power of this strategy lies with the people. Without the authority of government, or the leverage of money, the power of this work lies in the many committed individuals engaged daily in service to others and to community. The region's climate movement has been indispensable in building citizen support and capacity for climate action. Moving forward, we will need the continued leadership of those active in the movement as well as creating space for new leadership to 1) coordinate local campaigns and events to harness collective power, 2) recruit and engage volunteers, 3) provide leadership development opportunities to nurture existing and new local climate champions, 4) amplify local organization's efforts and successes, 5) highlight the intersectionality of the climate crisis, and 6) serve as an educational, skill-building resource for local citizens.

Commission a study to project long-term population trends for our region and corresponding implications for our local economy (especially regarding housing and transportation).

The full implications of how climate change can, and will, impact migration patterns for our region are not fully understood. Researchers at Yale have noted that northern “Rust-Belt” cities are well-positioned environmentally to receive individuals relocating due to climate change.⁶⁹ However, it is essential that the Genesee-Finger Lakes region have a better understanding of how climate migration may impact the local economy, as well as prepare our region’s infrastructure to attract new residents.

Commission clean energy workforce development study focused on projected growth/needs assessment.

MULTI-CRAFT APPRENTICESHIP PREPARATION PROGRAM (MAPP)



Rochester’s Multi-craft

Apprenticeship Preparation Program

(MAPP) is a non-profit organization focused on building technical skills and providing on-the-job training for historically under-served populations to gain entrée into the construction trades. MAPP works in partnership with the Rochester Building and Construction Trades Council to improve the diversity of the construction industry. MAPP graduates have gone on to earn apprenticeships in the Sheet Metal Local Union, Bricklayers Union, and the International Brotherhood of Electrical Workers, amongst others. Readying our buildings and homes for the transition to clean energy and to withstand the impacts of climate change will require a highly skilled labor force. The MAPP program is necessary to ensure that we can retrofit and rehabilitate our buildings through an inclusive and equitable clean energy economy.

Fully transitioning to a regional clean energy economy will require exponential growth in the clean energy sector. This field is rapidly evolving and the economic opportunities it presents are not broadly recognized. A regional clean energy workforce development study can identify the employment trends, educational needs, and hiring demands of the clean energy industry, as well as regional assets and gaps in meeting these needs.

Advocate/coordinate a non-profit clean energy workforce development training center that targets communities typically marginalized in higher education and the labor market.

A non-profit clean energy workforce development training center to serve those typically marginalized from higher education and labor market opportunities will be important for ensuring that the clean energy economy is inclusive and accessible. The workforce development training center must also include wrap-around services, such as transportation, childcare, and cost of supplies, as well as providing earn-as-you-learn opportunities to make programming accessible.

Local municipalities commit to pursuing CSC/CEC certification and begin implementing action items.

CSC/CEC programs are NY State programs designed to provide local governments with technical resources, grants, and rebates for implementing climate-friendly practices economy-wide. For example, “Green Economic Development Plans,” “Brownfield Clean-up and Redevelopment” and “Incentives for Green Businesses” are all considered high-impact action items. Committing to the Genesee-FLX Climate Action Strategy and working collaboratively with the Climate Collective and citizen action teams will help to advance many of the priority steps in the CSC/CEC programs.

Integrate elements of the climate action strategy into FLREDC economic development planning and municipal and county comprehensive and strategic planning processes.

Integrating elements of the climate action strategy into the Finger Lakes Regional Economic Development Council's economic development strategy would set the region apart as a leader in transitioning to a clean energy economy. Moreover, integrating elements of the climate action strategy, and climate mitigation more broadly, into the comprehensive and strategic planning processes of the region's municipal and county-level entities ensures that climate mitigation and adaptation become regular co-benefits of all community decision-making.

Advocate for economy-wide carbon pricing built with an equity focus.

Currently, the cost of fossil fuels does not include the full environmental, social, and public health costs associated with the extraction, distribution, and burning of fossil fuels. Rather, these costs are subsidized by individual and taxpayer dollars. A carbon price or fee on GHG and co-pollutants would require fossil fuel companies to pay the full price for the environmental, social, and health effects of using non-renewable energy. Such a system, however, would need to be carefully designed and implemented to ensure that the costs are not borne by low-to-moderate income households. Rather, a progressive fee and dividend type program would be needed to offset the costs for LMI households.

YOUTH CLIMATE MOVEMENTS

The Rochester Youth Climate Leaders (RYCL), the local chapter of the Sunrise Movement, and school-based green teams are not waiting around for others to take action on climate change. Rather, these youth activists have led the way in educating and advocating for locally relevant climate solutions. Eden Rosales, a Mercy 6th grader says, "I think that climate activism needs to go to the youth. The youth are the future. The impact of climate change will affect everyone, but especially those who are marginalized and living in poverty." Most recently, the Sunrise movement and RYCL advocated for an "all-electric building code" to be included in the 2022 state budget. Additionally, RYCL, which started in 2015, has worked on a campaign to divest NY State pensions from fossil fuels. RYCL also urged Monroe County to develop its own climate action plan, currently underway, by consistently showing up to county meetings and demanding action on climate change.

Lola DeAscentiis, a Harley School 12th grader says, "I think the climate crisis is crucial to the future of our generation because not only does it impact our environment, but it impacts

all areas of our life. The climate crisis is an intersectional issue. Though many young people can't vote, I find it important that those under 18 exercise their 1st amendment rights and speak out, and those over 18 actually use their right to vote that so many people from Rochester worked so hard in the past to gain for us."



5. Description of Mitigation Measures

REDUCE VEHICLE MILES TRAVELED (VMT)

Actions	Select Co-Benefits	Get Involved
Advocate for more funding for RGRTA's operations budget	<ul style="list-style-type: none"> Reduces transportation inequity via improved access to jobs & amenities Reduces commute times Reduces pollution in neighborhoods due to fewer vehicles 	<p>INDIVIDUALS</p> <ul style="list-style-type: none"> Use multi-modal transportation for commuting needs and/or regional trail system for commuting needs Support local businesses you can get to by walking or without using a motor vehicle
End investment of public funds for development projects inaccessible by public transit	<ul style="list-style-type: none"> Not investing public dollars in soon-to-be outdated infrastructure Sends market signal RE: need consolidated land-use planning 	<ul style="list-style-type: none"> Join local organizations (e.g., ReConnect Rochester or Color Your Community Green [CYCG] teams) to advocate for multi-modal transportation options, funding for a regional trail network, and implementation of Climate Smart Communities/Clean Energy Communities (CSC/CEC) action items
Local municipalities commit to pursuing CSC/CEC certification and complete action items for: complete streets policies, safe routes to schools, & infrastructure for biking & walking	<ul style="list-style-type: none"> Can receive financial incentives/grants for participating Co-benefits will depend on the actions completed, but may include improved public health associated with increased physical activity, increased sense of community, reduced pollution from fewer vehicles in neighborhoods, increased access to green space 	<ul style="list-style-type: none"> Join or start a municipal sustainability committee to assist with CSC/CEC action items <p>ORGANIZATIONS</p> <ul style="list-style-type: none"> Encourage and incentivize multi-modal transportation, including public transit, to your organization's constituents, e.g., providing bus passes Support your municipality in CSC/CEC implementation
Support further development of an interconnected, regional network of strategically placed trails that cross municipal boundaries and link people to economic opportunities and amenities	<ul style="list-style-type: none"> Improves access to open space Improves safety for walking/biking Improves access to centrally located amenities Possibility for economic development along trail lines 	<p>MUNICIPALITIES</p> <ul style="list-style-type: none"> Incentivize businesses and organizations to locate along transit lines Adopt zoning that encourages development along transit lines and near transit hubs Collaborate with other levels of gov't for shuttle service or park-and-ride options Convene a community sustainability team
Advocate that federal/state infrastructure funding be used to expand broadband infrastructure	<ul style="list-style-type: none"> Improves access to online learning/work, products, information/knowledge 	<ul style="list-style-type: none"> Implement CSC/CEC action items Implement GTC Regional Trails Initiative

SWITCH REMAINING VMT TO ZERO-EMISSIONS

Actions	Select Co-Benefits	Get Involved
Pilot project/proof of concept for electric vehicle sharing/electric shuttle services	<ul style="list-style-type: none"> Improves access to electric vehicles without the need for ownership/infrastructure Reduces neighborhood pollution due to fewer vehicles burning fossil fuels Sends market signal 	<p>INDIVIDUALS</p> <ul style="list-style-type: none"> Take advantage of electric vehicle/ridesharing opportunities Join local organizations (CYCG teams) to advocate for equitable distribution of EV infrastructure Join or start a municipal sustainability committee to assist with CSC/CEC action items Submit public comments in utility rate cases to advocate for equitable rate design When replacing a personal vehicle, choose electric <p>ORGANIZATIONS</p> <ul style="list-style-type: none"> Incentivize/encourage employees and constituents to take advantage of vehicle/rideshare opportunities Start an EV shuttle for employees/constituents to access your business or organization. Support your municipality in CSC/CEC implementation Install EV charging at your place of business or organization <p>MUNICIPALITIES</p> <ul style="list-style-type: none"> Collaborate with other levels of gov't for EV shuttle service or park-and-ride options Implement CSC/CEC action items to expand equitable access to EV infrastructure. Incentivize businesses and organizations to offer EV shuttle services and/or EV charging infrastructure Replace municipal vehicles with EVs
Local municipalities pursue CSC/CEC designation & pursue EV transit infrastructure as a main priority	<ul style="list-style-type: none"> More equitable access to EV infrastructure Reduces “range anxiety” Incentives/grants available for EV infrastructure via CSC/CEC Sends market signal 	
More equitable rate design for off-hours EV charging	<ul style="list-style-type: none"> Lower costs for EV charging Incentives off-hour charging, reducing grid impacts Sends market signals 	

INCREASE BUILDING ENERGY EFFICIENCY (EE)

Actions	Select Co-Benefits	Get Involved
Minimum energy standards for rental properties	<ul style="list-style-type: none"> • Reduces utility bills • Improves home comfort & indoor air quality • Reduces exposure to pests, mold, etc. • Improves public health 	<p>INDIVIDUALS</p> <ul style="list-style-type: none"> • Join a local organization (e.g., CYCG, City Wide Tenants Union, neighborhood association) to educate others about the benefits of EE and advocate for minimum EE standards • Join or start a municipal sustainability committee to assist with CSC/CEC action items • Become an energy navigator • Engage your landlord about opportunities/incentives for improving EE on their properties • Learn about potential incentives/programs for improving EE for your dwelling, get a free energy audit, implement EE improvements <p>ORGANIZATIONS</p> <ul style="list-style-type: none"> • Take advantage of utility and NYSERDA programming to get an energy audit • Implement EE measures at your business or organization (if owner) • Engage your landlord about opportunities/incentives for improving EE on their properties (if renter) • Advocate for minimum EE standards • Start/participate in a community clean heating and cooling campaign to educate community members about EE and connect them with resources to improve EE of their homes <p>MUNICIPALITIES</p> <ul style="list-style-type: none"> • Start a municipal campaign focused on EE (e.g., Energy Smart Rochester) • Implement CSC/CEC action items to improve municipal building performance • Establish minimum EE standards • Establish building benchmarking • Adopt NY State Stretch Codes • Provide incentives and grants for EE improvements, e.g., C-PACE
Streamline application processes for EE programs and develop processes to braid funding for EE work	<ul style="list-style-type: none"> • Improves access to program services and funding/incentives to make home improvements • Reduces utility costs due to improvements • Improves indoor air quality and home comfort from improvements • Reduces exposure to pests, mold from improvements • Increases awareness of links between housing and climate 	
Deploy energy navigators to conduct large-scale education and outreach efforts, especially for low-moderate income (LMI) households & those most vulnerable to climate change impacts	<ul style="list-style-type: none"> • Improves access to trusted sources of information for EE/home improvements • Improves access to program services and funding/incentives to make home improvements • Reduces utility costs due to improvements • Improves indoor air quality and home comfort from improvements • Reduces exposure to pests, mold from improvements • Increases awareness of links between housing and climate 	
Local municipalities pursue CSC/CEC designation and implement strategies to increase building efficiency, including building benchmarking (beyond public buildings) and adoption of stretch codes.	<ul style="list-style-type: none"> • Improves access to information to make informed choices with upfront information about utility costs • Drives market for increased adoption of EE practices • Reduces utility costs 	

FUEL SWITCHING FOR BUILDINGS

Actions	Select Co-Benefits	Get Involved
Educate customers/raise awareness about heat pumps	<ul style="list-style-type: none"> Improves access to program services and funding/incentives to make home improvements Potential to reduce utility costs due to improvements Improves indoor air quality and home comfort from improvements (e.g., more stable temperatures, access to AC) Increases awareness of links between housing and climate 	<p>INDIVIDUALS</p> <ul style="list-style-type: none"> Join a local organization (e.g., CYCG, neighborhood association, or municipal sustainability committee) to educate about the benefits/incentives for clean heating and cooling Advocate for sunsetting gas in new construction, an all-electric building code, and for the investment of public dollars in projects that advance CLCPA goals Submit public comments in utility rate cases to advocate for equitable rate design Go all electric with HVAC system and appliance replacements (or ask your landlord to) <p>ORGANIZATIONS</p> <ul style="list-style-type: none"> Intervene in utility rate cases to advocate for equitable rate design Advocate for sunsetting gas in new construction, an all-electric building code, and for the investment of public dollars in projects that advance CLCPA goals Go all electric with system and appliance replacements (or ask your landlord to) <p>MUNICIPALITIES</p> <ul style="list-style-type: none"> Start a municipal clean heating and cooling campaign (e.g., Energy Smart Rochester) Intervene in utility rate cases to advocate for equitable rate design Provide incentives and grants for building electrification, e.g., C-PACE Electrify municipal buildings Pilot a district geothermal project Coordinate with other municipalities in committing to end investment in projects that use gas and adopt an all-electric building code
Pilot project/proof of concept for 3 district or community geothermal projects, with varying ownership models	<ul style="list-style-type: none"> Reduces utility costs Improves home comfort Reduces costs for installation Sends market signal 	
Sunset gas in new construction by 2024 & sunset gas in system replacements for existing buildings by 2028	<ul style="list-style-type: none"> Improves indoor air quality in buildings Not wasting investment dollars on soon-to-be outdated infrastructure Sends strong market signal 	
Identify 2 local lenders to pilot innovative financing strategies (e.g., zero-to-low interest financing, gap funding) to overcome upfront cost barriers to building electrification.	<ul style="list-style-type: none"> Potential to reduce utility costs due to improvements Improves indoor air quality and home comfort from improvements Increases awareness of links between housing and climate 	
More equitable rate design for building electrification	<ul style="list-style-type: none"> Reduces utility costs associated with electrification Sends market signal 	
End investment of public funds for development projects that use gas	<ul style="list-style-type: none"> Improves indoor air quality in buildings Not wasting investment dollars on soon-to-be outdated infrastructure Sends strong market signal 	

IMPROVE SOIL HEALTH PRACTICES AND AGRICULTURAL WASTE MANAGEMENT

Actions	Select Co-Benefits	Get Involved
Increase peer-to-peer farmer education on benefits of soil health practices	<ul style="list-style-type: none"> Improves water quality Increases resilience to precipitation extremes Improves plant health & productivity Reduces soil erosion 	<p>INDIVIDUALS</p> <ul style="list-style-type: none"> Advocate for payment for ecosystem services and other incentives to improve agricultural sustainability Participate in community conversations about climate-friendly agricultural production to better understand the challenges and opportunities Ask your grocer to stock locally sourced food/agricultural products Adopt/increase the plant-based portion of your diet Support local farmers at farmers' markets, stands, etc. Buy organic products when possible Start composting at home or advocate for a residential composting system at the municipal level <p>ORGANIZATIONS</p> <ul style="list-style-type: none"> Advocate for payment for ecosystem services and other incentives to improve agricultural sustainability Participate in community conversations about climate-friendly agricultural production to better understand the challenges and opportunities Advocate for/engage with local resources to collect on-site data Facilitate conversations/educational opportunities on the health benefits of plant-based, or regeneratively grown, locally sourced foods Make an organizational policy of purchasing locally sourced and/or organic products whenever possible Adopt an on-site composting program for your organization or business and/or advocate for municipal composting programs Learn about & commit to adopting climate-friendly agricultural practices <p>MUNICIPALITIES</p> <ul style="list-style-type: none"> Encourage public appreciation for local farms through fairs, festivals, other farm events and local marketing materials Promote health benefits of plant-based locally sourced diets Help connect farmers with local, state, and federal agricultural and conservation resources to provide information and technical assistance Partner with County Agricultural Boards to facilitate peer-to-peer farmer education about climate-smart agricultural practices Implement agricultural protection plans to promote sustainability Coordinate with other municipalities or county agricultural boards to provide microenterprise loan programs Coordinate with other municipalities, county agricultural boards, and soil and water conservation districts to increase access to equipment and knowledge needed to implement climate-smart agriculture Adopt municipal composting practices for municipal and residential waste and return compost to the local community
Payment for ecosystem services & other incentivization mechanisms that support adoption of soil health practices	<ul style="list-style-type: none"> Acknowledges/values our natural systems, sending strong market signal Acknowledges/values the work farmers do to provide an essential human need & steward the earth Improves water quality, reduces erosion, increases resilience to precipitation extremes, and other soil health benefits 	
Advocate/support for reliable, accessible, and locally relevant data on GHG impacts of farming and potential for carbon sequestration	<ul style="list-style-type: none"> Improves understanding of local climate impacts and efficacy of mitigation measures Improves transparency and accountability 	
Facilitate community conversations with farmers, including dairy farmers, and farm experts about the challenges and opportunities associated with greenhouse gas emissions reductions, agricultural production, and climate change.	<ul style="list-style-type: none"> Acknowledges/values farmer knowledge/expertise Builds relationships with farmers Better understanding of community needs/desires Better understanding of barriers to implementing climate-friendly practices 	
Raise awareness about impact of dietary choices on regional emissions	<ul style="list-style-type: none"> Improves awareness of the links between diet and climate change Potential to stimulate further market demand/market access for locally sourced agricultural products 	
Increase financial resources for farmers to implement manure management practices, including grants and no-to-low cost financing mechanisms	<ul style="list-style-type: none"> Improves water quality Improves air quality/smells associated with dairy production Potential for on-site usage of RNG Potential reduced costs associated with use of organic fertilizers & bedding materials 	
Pilot/proof of concept for community composting systems, including municipal, residential, and institutional settings	<ul style="list-style-type: none"> Reduces amount of waste entering landfills Potential to use compost for soil improvement projects Raises awareness about food waste 	

ACCESS TO LOCALLY SOURCED FOOD

Actions	Select Co-Benefits	Get Involved
Increase community gardens	<ul style="list-style-type: none"> Increases access to open space/ green space Reduces stormwater run-off Potential to reduce urban heat-island effect Increases access to local food Increases awareness/knowledge of food production 	<p>INDIVIDUALS</p> <ul style="list-style-type: none"> Join or start a community garden in your neighborhood or town Advocate to local municipalities for permissive zoning to increase access to land for community garden/urban agriculture space Buy locally grown food from farmers markets or other locations whenever possible <p>ORGANIZATIONS</p> <ul style="list-style-type: none"> Commit to procuring locally sourced, plant-based foods Establish on-site space for community gardens for employees, constituents, or neighbors <p>MUNICIPALITIES</p> <ul style="list-style-type: none"> Create a public information campaign to support local food initiatives and awareness of local food options Include local food systems as part of comprehensive plans Survey vacant lots and parcels that could be converted to community gardens or urban farms and facilitate access to these sites Link hunger assistance programs to local food Establish permissive zoning codes and ordinances that enable community gardens/urban agriculture and associated sale/distribution of food products Encourage local farmers to sell at farmers market(s) in municipality or nearby
Identify two large, local institutions that will commit to transitioning their procurement strategies to locally sourced, sustainably grown, fruits and vegetables, and regeneratively grown meat and dairy, with preferential contracts for farmers who are using soil health practices	<ul style="list-style-type: none"> Improves public health associated with increased access to healthy, nutritious food Potential to reduce food miles traveled (Potential) increase in quality of food in institutional settings 	

ACCESS TO GREEN SPACE

Actions	Select Co-Benefits	Get Involved
<p>Increase community green space, tree planting, community gardens and other beautification efforts</p>	<ul style="list-style-type: none"> • Reduces heat island effect/access to shade • Increases access to open space/ green space • Improves biodiversity • Potential for improved public health via lower stress, outdoor activity • Increases access to locally grown food via community gardens • Increases place-based educational opportunities 	<p>INDIVIDUALS</p> <ul style="list-style-type: none"> • Join or start a CYCG team to advocate for, and support implementation of, efforts to increase green space and community beautification efforts • Advocate to limit urban, suburban, and rural sprawl to preserve opportunities for green space • Participate in volunteer efforts to maintain street trees, parks, and green spaces • Participate in tree planting campaigns <p>ORGANIZATIONS</p> <ul style="list-style-type: none"> • Organize/sponsor local tree planting and beautification efforts • Advocate for, and support implementation of, efforts to increase green space and community beautification efforts • Advocate to limit urban, suburban, and rural sprawl to preserve opportunities for green space <p>MUNICIPALITIES</p> <ul style="list-style-type: none"> • Design, implement, and maintain green streets, parks, and tree planting efforts • Implement the Local Forestry, Green Infrastructure, Conserve Natural Areas, Shade Structures Policy, & Brownfield Clean-up Climate Smart Communities Actions • Implement zoning policies to limit urban, suburban, and rural sprawl that protect green spaces

GRID DECARBONIZATION

Actions	Select Co-Benefits	Get Involved
Educate local municipalities and residents about the costs and benefits of renewable energy projects of varying types, the impacts for local environments and communities, and the process for navigating strong community benefits agreements (CBAs).	<ul style="list-style-type: none"> Increases awareness about potential benefits that can be gained from renewable energy contracts Dispels myths about renewable energy generation 	<p>INDIVIDUALS</p> <ul style="list-style-type: none"> Join or start a CYCG team, neighborhood association, United Solar Energy Supporters, Sierra Club, or other civic organization to advocate for environmentally sound renewable energy projects of varying type Participate in community conversations on alternative energy sources to learn more about the technologies and better understand the varied perspectives about the local energy mix Become an energy navigator to educate/assist others in renewable energy implementation Submit comments in utility rate cases to advocate for improved grid reliability, equitable rate design, and electrification incentives and programming Join a community solar program Install on-site solar panels/batteries (or advocate for your landlord to do so) Advocate for CCA that supplies 100% clean, renewable energy at an affordable rate
Facilitate a community conversation on the role of nuclear, hydrogen, and biogas in the local energy mix	<ul style="list-style-type: none"> Improves understanding of community sentiment with RE: to alternative energy sources Improves understanding of costs/benefits of alternative energy sources 	<p>ORGANIZATIONS</p> <ul style="list-style-type: none"> Support renewable energy projects in your community Explore creating an energy cooperative that will work to build a community-based renewable energy project or join a community solar program Intervene in utility rate cases to advocate for improved grid reliability, equitable rate design, and electrification incentives and programming Install on-site solar, wind, battery storage and/or pilot a micro-grid project
Participate in rate cases to advocate for grid reliability, equitable rate design, and programming that encourages electrification	<ul style="list-style-type: none"> Improves resilience to weather-related impacts Potential for lower utility costs (with targeted LMI rate design programs) 	<p>MUNICIPALITIES</p> <ul style="list-style-type: none"> Intervene in utility rate cases to advocate for improved grid reliability, equitable rate design, and electrification incentives and programming Learn about, and negotiate, strong CBAs that ensure that renewable energy projects improve quality of life for local residents Enable/expand Community Choice Aggregation programs Install on-site energy generation on all municipal properties Coordinate with other municipalities in your county to develop a county-wide payment-in lieu-of-taxes (PILOT) to reduce confusion
Drive rooftop solar installations through coordination of efforts/resources and “energy navigators”/customer service	<ul style="list-style-type: none"> Reduces the burden on the grid for electricity demand Potential to lower utility costs 	<ul style="list-style-type: none"> Include community goals and values with regard to renewable energy in strategic or comprehensive plans Pilot a micro-grid project and/or other multi-use generation projects, e.g., parking lot generation and storage, using municipal buildings Identify brownfield sites, closed landfills, or other vacant lots suitable for renewable energy generation
Pilot/proof of concept for three renewable energy projects of varying types (e.g., community solar, micro-grid, agrovoltatics)	<ul style="list-style-type: none"> Increases energy independence Reduces the burden on the grid for electricity demand Potential to lower utility costs 	<ul style="list-style-type: none"> Establish local stand-alone laws or zoning ordinances that enable renewable energy development while protecting other land-uses, including prime agricultural land, and community values, e.g., setbacks, screenings, etc.

MISCELLANEOUS/ECONOMY-WIDE

Actions	Select Co-Benefits	Get Involved
Build citizen support/capacity for climate action (educate, organize and mobilize)	<ul style="list-style-type: none"> Increases civic engagement and participation in decision-making about community priorities & actions Increases awareness about climate solutions Increases the number of people advocating for climate solutions/funding for climate solutions Increases the number of people available to “do the work” to implement climate solutions 	<p>INDIVIDUALS</p> <ul style="list-style-type: none"> Educate, advocate, and collaborate to build the climate movement in your community Join CYCG teams or other citizen action teams to implement aspects of the strategy and support municipalities in implementing CSC/CEC and other climate-smart initiatives Advocate that local and county governments integrate an intersectional climate perspective into their comprehensive plans Advocate for a carbon-pricing plan that centers equity provisions and requires fossil-fuel companies to play their part by funding renewable energy and climate solutions <p>ORGANIZATIONS</p> <ul style="list-style-type: none"> Educate, advocate, and collaborate to build the climate movement in your community. Talk about how/why climate change and climate solutions intersect with your own work Support your municipality in implementing CSC/CEC action items Advocate for a carbon-pricing plan that centers equity provisions and requires fossil-fuel companies to play their part by funding renewable energy and climate solutions <p>MUNICIPALITIES</p> <ul style="list-style-type: none"> Support or commission a study to better understand the impacts of climate change on long-term population trends Support or commission a clean energy workforce development study Incentivize clean energy supply chain and clean energy business opportunities Support a schools-to-green jobs pathway for historically marginalized populations Develop comprehensive plans that include an intersectional climate perspective, including preparation for the potential influx of individuals associated with climate change Commit to becoming CSC or CEC certified and pursuing as many high-impact action items as possible.
Commission a study to project long-term population trends for our region and corresponding implications for our local economy (especially in regard to housing and transportation)	<ul style="list-style-type: none"> Identifies how changes in population could impact the region in terms of housing needs and impact to infrastructure, e.g., transportation, schools, etc. 	
Commission clean energy workforce development study focused on projected growth/needs assessment	<ul style="list-style-type: none"> Identifies gaps in current workforce development landscape Identifies opportunities for developing clean energy workforce development programs 	
Advocate/coordinate for a non-profit clean energy workforce development training center that targets marginalized communities	<ul style="list-style-type: none"> Provides equitable access to clean energy job training Increases workforce capable of implementing climate solutions Potential to reduce the number in poverty due to higher wages typically associated with clean energy jobs 	
Local municipalities commit to pursuing CSC/CEC certification and begin implementing action items	<ul style="list-style-type: none"> Can receive financial incentives/grants for participating Co-benefits will depend on the actions completed 	
Integrate elements of the climate action strategy into FLREDC economic development planning and municipal and county comprehensive and strategic planning processes.	<ul style="list-style-type: none"> Signals to local businesses and other community leaders the importance of climate solutions and sustainability for regional economic development and long-term growth Potential to unlock funding opportunities for climate solutions 	
Economy-wide carbon pricing built with an equity focus	<ul style="list-style-type: none"> Discourages fossil fuel burning by making it more expensive & thereby likely increases the adoption of beneficial electrification Provides revenue stream for climate solutions Potential for rebates/stipends for LMI households to offset increased costs 	

6. Steering Committee Members and Stakeholder Engagement

We consulted numerous individuals and organizations over the course of the collective impact process and throughout the development of the climate action strategy. We are truly grateful to everyone who shared their time and perspective, particularly our steering committee members. We are also grateful to the numerous individuals who completed anonymous surveys. Participation in the stakeholder engagement process does not necessarily mean individuals or organizations agree with everything in the final climate action strategy.

Steering Committee Members

Banister, Simeon (co-chair)	Kulak, Amie	Nyame, Dr. K.
Belaskas, Dave	Jiménez Gleason, Annette	Nyrop, Jan (co-chair)
Berry, Kereem	Jordan, Julio	Pollack, Ronnie
Burack, Linden	Lawson, Jenna	Richardson, Rob
Butler, Dan	Lou, Valerie	Scanlon, Joanne
Castle, Stephanie	Manapol, Nicole	Sood, Neha
Ferington, Haylee	McLean, Andrea	
Hunt, Suzanne	Murray, Lee	

Stakeholder Engagement

Adams, Robb	Caputo, Adele	Dobbs Schneider, Oliva
Anderson, Toyin	Cheng, Julius	Donahue, Trish
Archana, Verma	Chesonis, Arunuas	Doucette, Luticha
Arena, Dan	Chung, Clement	Dueppengiesser, Jessica
Ashworth, Emily	Codding, Richard	Ezran, Camille
Bacot, Nahmese	Cohen, Marc	Finch, Doug
Baker, Mike	Collins, Bill	Finklea, Karen
Barclay, Anne-Marie	Colon Jr., Neftali	Finn, Theodora
Bechtold, Bob	Conklin, Michele	Flender, Joan
Bedoia, Hormis	Corbin, Amber	Fox, Jacob
Belasks, Dave	Corcoran, Trish	Franco Cruz, Sofia
Benedict, Kaleigh	Crosman, Joanne S.	Gallo, Matt
Bennett, Theresa	Curry, Nyriel	Gantt, Will
Blair, Allen	Daimau, Maria	Gibson-Stevenson, Romanda
Boasi, Julie	Das, Christina	Gonzalez, Almu
Bradford, Kayla	Davis, Shemeka	Gonzalez Rivera, Jasmine
Brown, Amber	DeJesus, Elisa	Gooch, Curt
Bullock, Erin	DeLooze, Jason	Gotcsik, George
Burgos, Luis B	DeMarco, Jeni	Gotcsik, Fran
Burr, Shawn	DiFiore, Joe	Griffin, DeShawn

Haoran, Piao
Haremza, Jason
Harris, Pat
Haskins, Maurice
Hayes, Rob
Haynes, Anastajah
Henderson, Elizabeth
Henry, Ellen
Hensel, Candace
Hermey, Jordan
Hey, Ellen
Hill-Glover, Madison
Hirasuna, Tom
Howard, Tamara
Hudson, Rashakim
Hughes, Melissa
Hughes, Josh
Hughes, Graham
Hughes-Smith, Sue
Jee, Sandy
Johnson, Lisa
Jones, Naaman
Jordan, Tytiana
Keefe, David
Keevert, John
Kelley, Kevin
Klein, Mitch
Kone, Alex
Kothor, Djifa
LaCelle, Kim
Lewis, Shanielia
Lewis, Karen
Lewis, Anthony
Lin, Yixuan
Lomack, Melissa
Lopez, Ysabel
Lopez, Adumazs
Lopez, Jeremick
Lopo, Manuel
Lowenstein, Jenny
Luz Rosa, Alba
Lyon, Thomas
Malcho, Jade
Martens, Klaas
Martin, Kurt
Martinez-Johncox, Wanda
Mayoliz, Ray

McDade, Elizabeth
McDonald, Jason T
McDowell, David
McGowan, Tim
McIntosh, Andrea
Mclarty, Ebony
MirPaz, Lilibeth
Mittiga, Sarah
Modeste, Persephone
Moehle, William
Moran, Tim
Murray, Christina
Nabozny, Pete
Nagel, Davies
Nåter, Shalym
Odhner, Daryl
Oglvie, Dt
Oltramari, Felipe
Orotre, Anora
Partyka, Jason
Perez, Ida
Porter, Andrea
Puckett, Ryan
Quaassdorff, Margaret
Ramos-Torres, Yesenia
Ramsay, Darin
Randall, Jon
Ray, Lauren
Raymond, Chris
Reidlinger, Mike
Reitz, Margaret
Ridgeway, Nikisha
Rivera, Lydia
Rood, Daphne
Roodenburg, Mary
Ryan, Brendan
Rygg, Katie
Sanchez, Victor
Sanders, Imani
Sanderson, Sarah Jesse
Santa Cruz, Edgar
Santiago, Jeremy
Saxton, Lynn
Schaefer, Peter
Schneible, Sandy
Schumaker, Jan
Scindre, Axmir

Seneca, Dean
Sharma, Mohini
Shrivastava, Ram
Sieber, Beth
Sinclair, Lakaya
Smith, Jeremy
Smith, Duran
Smith, Jonathan
Spalding, Anne
Sportiello, Kristen
Starpoli, Mary
Stojkovic, Elisabeth
Stollery, Kathleen
Tallant, Shawn
Tappon, Jim
Taylor, Jonathan
Thompson, Shirley
Thompson, Scott
Uribe, Kristine
Vaasquez, Anel
Van Dusen, Eric
Waite, Todd
Wallace, Ryan
Waller, Maya
Warner, Steve
Wartinger, Pat
Weaver, TiCara
Weaver, Brad
Westbrook, Tammy
White, Sharron
Winnie, Paul
Woodbury, Peter
Wright, Lorna
Wright, Peter
Yockel, Elizabeth
Zeafla, Emily
Zeise, Eric
Zeltmann, Christopher
Zetkulick, Anna
Zimmer-Mayer, Heidi
Zink, Harold

7. Resources

FOR INDIVIDUALS

[City of Rochester Pilot Composting Program](#) (waste)
[City of Geneva Composting Program](#) (waste)
[Climate Solutions Accelerator Volunteer Sign-up](#) (educate/organize/mobilize)
[Color Your Community Green](#) (educate/organize/mobilize)
[Color Your School Green](#) (educate/organize/mobilize)
[FloShare](#) (transportation)
[Heat Smart Monroe-Finger Lakes](#) (buildings)
[NYSERDA Assisted Home Performance](#) (buildings)
[NYSERDA EmPower NY](#) (buildings)
[NYSERDA Charge NY](#) (transportation)
[NYSERDA Comfort Home Performance](#) (buildings)
[Northeast Organic Farming Association](#) of NY (food/agriculture)
[ReConnect Rochester](#) (transportation)
[RENEW Climate Fund](#) (carbon offsets/buildings)

FOR ORGANIZATIONS

[American Farmland Trust](#) (agriculture)
[Amped](#) (buildings/transportation)
[Commercial PACE](#) (buildings)
[Cornell Cooperative Extension](#) (agriculture)
[Headwater FoodHub](#) (food/agriculture)
[NYSERDA Agriculture Energy Audit Program](#) (buildings/operations)
[NYSERDA FlexTech Program](#) (commercial, industrial, multi-family buildings)

FOR MUNICIPALITIES

[Climate Smart Communities Program](#)
[Clean Energy Communities Program](#)
[Genesee-Finger Lakes Regional Planning Council](#) (provides assistance for CSC/CEC programs)
[NYSERDA Building Energy Code Development, Compliance, and Enforcement](#)
[NYSERDA Build Ready Program for Renewable Energy](#)
[NYSERDA Carbon Neutral Economic Development](#)
[NYSERDA Clean Energy Siting for Local Governments](#)
[NYSERDA Commercial Property Assessed Clean Energy Financing Guidance](#)
[NYSERDA Energy Storage](#)
[NYSERDA Solar Guidebook for Municipalities](#)

Endnotes

- 1 The sovereignty and land rights of the Seneca Nation are codified by the [1794 Treaty of Canandaigua](#).
- 2 Office of the New York State Comptroller, 2019. [A Profile of Agriculture in NY State](#).
- 3 City of Rochester, 2018 [Climate Vulnerability Assessment Report](#). We added the farmworker category to the City of Rochester's list.
- 4 M. Romanello, et. al. 2021. "[The 2021 Report of the Lancet Countdown on Health and Climate Change: Code Red for a Healthy Future](#)." *The Lancet*: 398, pgs. 1619-1662.
- 5 Common Ground Health. [Overloaded: The Heavy Toll of Poverty on Our Region's Health. See also, The Color of Health: The Devastating Toll of Racism on Black Lives](#).
- 6 Nadja Popovich and Josh Katz. "[See How Wildfire Smoke Spread Across America](#)." *The New York Times*, July 21, 2021.
- 7 United Nations, "[Secretary-General Calls Latest IPCC Climate Report 'Code Red for Humanity', Stressing 'Irrefutable' Evidence of Human Influence](#)." August 9, 2021.
- 8 New York State Climate Action Council. [10.14.2021 Meeting](#).
- 9 New York State Climate Action Council, [Our Climate Act](#)
- 10 45% emissions reductions from 2010 levels by 2030 to limit temperature increases to 1.5 degrees. IPCC, 2018. [Special Report: Global Warming of 1.5 °C](#).
- 11 Kania, John and M. Kramer. Winter 2011. "[Essentials of Social Innovation: Collective Impact](#)." *Stanford Social Innovation Review*.
- 12 Steering committee members include organizational representation from: Rochester Area Community Foundation, Cornell Agritech, American Farmland Trust, Common Ground Health, Connected Communities, EDF Renewables, Genesee-Finger Lakes Regional Planning Council, Greater Rochester Health Foundation, Hunt Country Vineyards, Ibero-American Action League, Multi-craft Apprenticeship Preparation Program (MAPP), Native American Cultural Center, Rochester-General Regional Transportation Authority, Rochester Institute of Technology, SUNY Geneseo, University of Rochester, University of Rochester Medical Center, The Urban League of Rochester, and Ujima Rochester.
- 13 Although energy transmission/distribution losses comprise 2% of emissions, the State's goal to decarbonize the grid, coupled with the need for clean energy generation to drive reductions in other sectors resulted in the inclusion of this sector.
- 14 Sector-specific focus groups included: clean energy technology/manufacturing, economic and workforce development, health, transportation, renewable energy generation, and agriculture.
- 15 Population-specific focus groups included: Urban black, urban Latino, farmworkers, indigenous, high-school students, college students, rural residents, "Color Your Community Green" teams, housing, equity-focused non-profits, and a mini-feedback session at the *Interrupt Racism Summit* put on by The Urban League of Rochester.
- 16 U.S Environmental Protection Agency (EPA). 2021. [Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts](#). EPA 430-R-21-003. United Nations Environment Programme. 2021. [Emissions Gap Report 2021: The Heat Is On – A World of Climate Promises Not Yet Delivered](#).
- 17 See Appendix A: Genesee-Finger Lakes Emissions Inventory.

- 18 From the Office of Governor Andrew M. Cuomo. 05.19.2016. [“Governor Cuomo Announces New Energy Affordability Policy To Deliver Relief To Nearly 2 Million Low-Income New Yorkers.”](#)
- 19 See the following organizations/institutions for their definitions of climate justice: [Yale Climate Connections](#), [NAACP](#), [Climate Justice Alliance](#), [Carbon Brief](#), [UCSD Center on Global Justice](#)
- 20 NY State Climate Action Council’s [Disadvantaged Communities Criteria](#).
- 21 The public has 120 days to comment on the draft criteria. Climate Justice Working Group, March 2022, [Draft Disadvantaged Communities Criteria and List Technical Documentation](#).
- 22 Ibid.
- 23 For a visual depiction of the census tracts included as DAC’s, see: [Disadvantaged Communities Map - Climate Act](#)
- 24 Climate Justice Working Group, March 2022, [Draft Disadvantaged Communities Criteria and List Technical Documentation](#).
- 25 [Sustainable Hudson Valley](#) is employing a similar approach to reducing regional emissions and advancing their community in meeting CLCPA goals. Their work has been important for guiding and inspiring our own.
- 26 Land Use, Change, and Forestry (LUCF) emissions are not included| Country CO2 emissions: [Climate Watch. 2020](#). Washington D.C.: World Resources Institute| Country population: [The Worldbank](#).| USA State Population: [US Census Bureau](#).
- 27 United Nations Environment Programme. 2021. [Emissions Gap Report 2021: The Heat Is On – A World of Climate Promises Not Yet Delivered](#).
- 28 [Finger Lakes Regional Sustainability Plan](#)
- 29 [City of Rochester Climate Action Plan](#)
- 30 [City of Rochester Climate Vulnerability Assessment](#)
- 31 [City of Rochester Climate Change Resilience Plan](#)
- 32 [Village of Fairport Sustainability Plan](#)
- 33 [Green Genesee/Smart Genesee](#)
- 34 Kania, John, M. Kramer, and P. Senge. 2018. [“The Water of Systems Change.”](#) FSG.
- 35 Stockholm Environment Institute, [Low Emissions Analysis Platform](#).
- 36 Data is limited to Rochester. Note that heating and cooling degree-days are indicators of heating and cooling energy needs. According to NYSERDA, heating degree days are the number of degrees the daily average temperature falls below 65° F.
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- 38 Finger Lakes Land Trust, [“Toxic Algae in the Finger Lakes.”](#)
- 39 ACT Rochester, [“Economic Security: People Living in Poverty”](#)
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- 41 ACT Rochester. [People Living in Poverty by Race/Ethnicity 2015-2019](#).
- 42 Finger Lakes Regional Economic Development Council. 2021. [State of the Region: Finger Lakes 2021 Annual Report](#). Rochester Monroe Anti-Poverty Initiative (RMAPI). 2020. [Community Concerns Assessment](#).
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- 45 Ragavan, M., L. Marcill, and A. Garg. 2020. [Pediatrics \(2020\) 145 \(5\): e20193169.](#)
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- 48 Common Ground Health. Feb. 2020. [Finger Lakes Regional Community Health Assessment.](#)
- 49 Ibid.
- 50 [NY State Opioid Data Dashboard](#)
- 51 Common Ground Health.2021. [The Color of Health: The Devastating Toll of Racism on Black Lives](#)
- 52 Common Ground Health. [Asthma-Driven Emergency Department Visit Rates](#)
- 53 Feeding America Action. [The Impact of Coronavirus on Food Insecurity.](#)
- 54 Tik Root. "[After Decades, Biden Plans to Make Mobile Homes Greener, Sparking a Fierce Debate.](#)" *Washington Post* Jan. 21, 2022.
- 55 City of Rochester. 2017. [Climate Action Plan](#)
- 56 Office of the New York State Comptroller. 2019. [A Profile of Agriculture in NY State.](#)
- 57 New York State Department of Public Service. [NY Generation Attribute Tracking System. Environmental Disclosure Labels of Load Serving Entities](#)
- 58 [U.S. Census](#)
- 59 ACT Rochester. [Changes in Total Population by Race/Ethnicity, 2015-2019](#)
- 60 Common Ground Health. Feb. 2020. [Finger Lakes Regional Community Health Assessment](#)
- 61 [2019 MSW Landfill Capacity](#), Department of Environmental Conservation
- 62 NY State Climate Action Council's [Draft Scoping Plan](#)
- 63 Ibid.
- 64 NY State Climate Action Council's [Draft Scoping Plan](#)
- 65 Thomas Overton. "[The New York Dairy Industry and Cornell.](#)" Information about the efficiency of milk production is adapted from Capper et al. (2008) ADSA-ASAS Annual Meeting.
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- 69 Group 14 Engineering. 2020. [Electrification of Commercial and Residential Buildings: An evaluation of the system options, economics, and strategies to achieve electrification of buildings.](#)
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