

Climate Impacts and Opportunities in New York's Genesee-Finger Lakes Region

The Genesee-Finger Lakes Region, a nine-county area located in Upstate New York, is bountiful with natural resources, especially freshwater and ample, fertile agricultural land.

But climate change is already beginning to pose multiple threats to the Region through temperature increases, extreme floods, fluctuations in rainfall and snow patterns, and other climate impacts (see Figure 1). Although these changes may not seem significant on a day-to-day basis, they have vast implications for people, businesses, and the natural

environment (see Figure 2, p. 2). The most severe of these impacts will fall on low-income, minority and rural communities.

The Genesee-Finger Lakes Region cannot, of course, tackle climate change on its own. That is a global task: the world has a short 10-year window to dramatically cut greenhouse gas emissions and prevent the worst impacts of climate change.¹ But the Region is well-positioned to reduce its own emissions and capitalize on the benefits of such climate action.

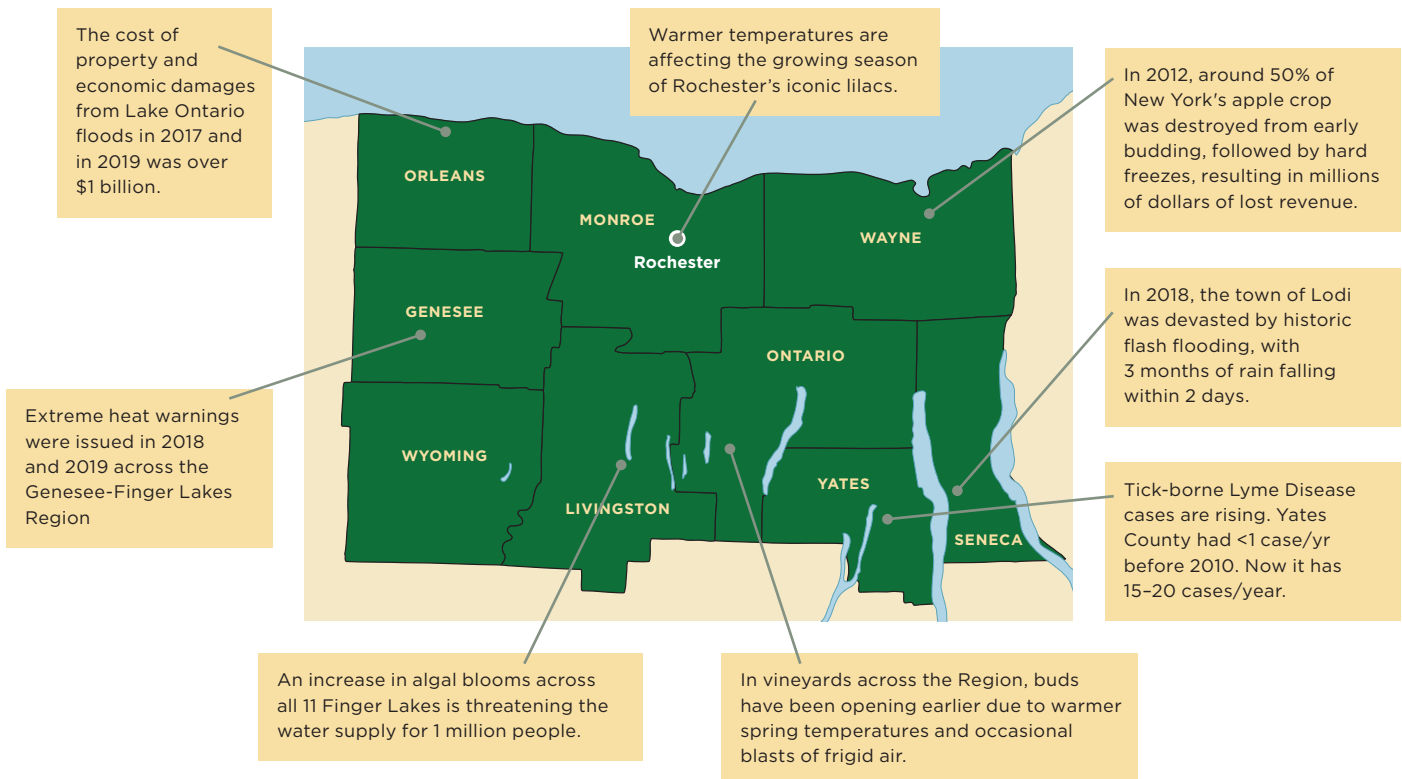


FIGURE 1. Regional Climate Impact Examples

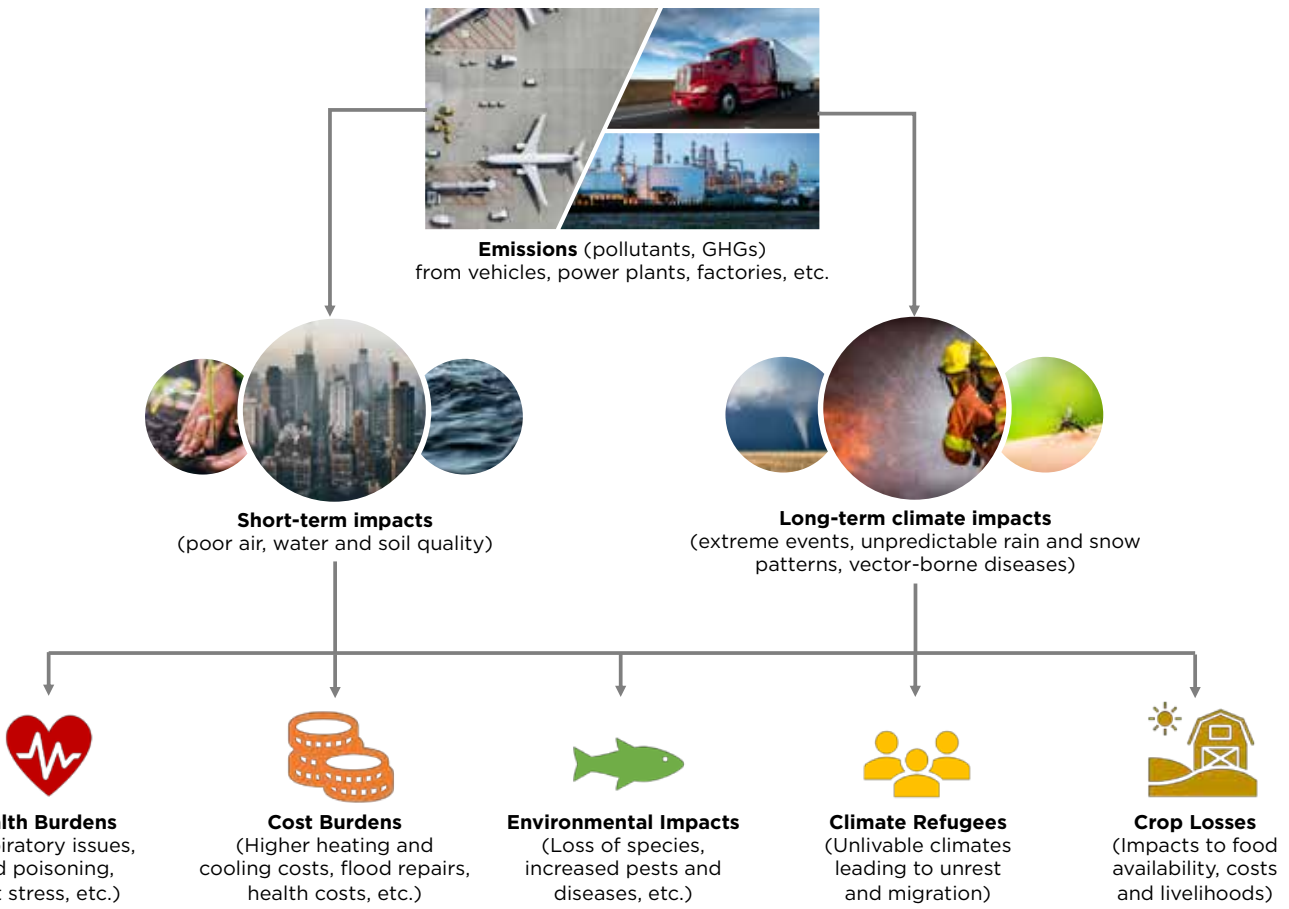


FIGURE 2. The Ways That Pollution and Climate Change Affect Our Lives
Low-income, minority and rural communities will feel these impacts more heavily.

Improving the climate improves lives

The Genesee-Finger Lakes Region can address climate change in ways that simultaneously benefit other vital economic and social priorities. These “co-benefits” include reducing poverty, improving health outcomes, boosting economic activity, and enhancing agricultural productivity.

Energy affordability and reliability

Energy costs can make up a large share of expenditures for rural and low-income households. By upgrading the efficiency of residential and commercial buildings, reducing losses in transmission and distribution lines, and expanding low-cost renewable energy generation, the Genesee-Finger Lakes Region can reduce energy costs, create jobs, and improve the reliability of the grid.

Health benefits

Implementing climate solutions improves public health in myriad ways. Examples include reducing respiratory illness from air pollution and encouraging physical activity through the provision of pedestrian and bike-friendly transit options.

Economic vitality

The Genesee-Finger Lakes Region has a history of spurring innovative ideas, from the Erie Canal to the use of photographic film. There is now significant opportunity for the Region to support new, innovative businesses and create jobs related to sustainability. Since clean energy jobs are typically high-paying jobs, strategic investments in workforce development can lift local residents out of poverty and revitalize neighborhoods.

TABLE 1. Examples of Regionally-Relevant Climate Solutions

Sector	Opportunities	Co-Benefits
Residential	<ul style="list-style-type: none"> • Reduce energy costs through energy efficiency upgrades of appliances, building envelope, space heating and cooling, and water heating equipment • Reduce fossil fuel usage by switching from oil/gas to efficient electric appliances and heat pump systems • Gain energy independence through installing rooftop solar or joining a renewable energy co-op • Reduce waste and increase composting 	<ul style="list-style-type: none"> • Reduces unequal energy cost burdens • Improves air quality and health outcomes • Empowers individuals and reduces their vulnerabilities to shutoffs by enabling them to control their energy supply
Transportation	<ul style="list-style-type: none"> • Improve public transit options by increasing bus service frequency and coverage, adding shuttles, lightrail, etc., and encouraging transit-oriented development • Promote active transit by providing streetscape amenities (e.g., benches and lighting), way-finding signs, and dedicated bike lanes • Accelerate the adoption of electric vehicles and installation of EV charging stations 	<ul style="list-style-type: none"> • Increases access to jobs and other services • Promotes healthy lifestyle • Reduces air pollution and improves associated health outcomes
Agriculture	<ul style="list-style-type: none"> • Sequester carbon by preserving agricultural land and other green space • Enhance soil health with low-tillage practices, cover cropping, and crop diversification • Recover and recycle nutrients by preventing runoff and using organic waste to fertilize crops • Limit the use of chemical pesticides and fertilizers, which deplete soil quality and cause air and water pollution • Compensate farmers for “ecosystem services” and responsibly integrate renewable energy generation and agriculture 	<ul style="list-style-type: none"> • Improves air, water, and soil quality • Increases agricultural productivity • Improves ecosystem resilience and biodiversity • Increases profits and diversifies revenue streams
Industrial/ Commercial	<ul style="list-style-type: none"> • Support business development and job creation in clean energy production and other sustainable ventures • Upgrade efficiency of lighting, HVAC, and other facilities and process equipment to reduce energy usage and costs • Optimize manufacturing processes and supply chains to reduce energy usage and costs • Generate and store energy on-site to reduce energy costs and improve reliability 	<ul style="list-style-type: none"> • Creates jobs • Contributes to economic vitality • Improves public health through reduction in air pollution
Municipal sector	<ul style="list-style-type: none"> • Improve the efficiency of municipal facilities and operations, including water systems and waste management. • Replace municipal vehicle fleets with electric or low-emission vehicles. • Align building/zoning/landuse codes and municipal plans with sustainability goals • Invest in public infrastructure upgrades, especially those related to stormwater/flood management and active transit • Commit to becoming a “Climate Smart Community” and complete required actions to earn NYS CSC certification 	<ul style="list-style-type: none"> • Saves taxpayers money • Promotes healthy lifestyle • Creates vibrant, resilient neighborhoods • Reduces the community’s vulnerability to extreme weather and other forms of hardship
Energy Utilities	<ul style="list-style-type: none"> • Build more utility-scale renewables and energy storage systems • Promote and incentivize beneficial electrification • Shut down fossil fuel power plants and discontinue investment in fossil fuel infrastructure 	<ul style="list-style-type: none"> • Improves air quality and public health • Protects ratepayers from volatile fossil fuel prices and investment in rapidly depreciating assets

Note: This is a partial list of locally relevant climate solutions and does not include all sectors that will need to participate in the Genesee-Finger Lakes Region’s transition to a clean energy economy.

A strong and stable food system

The Genesee-Finger Lakes Region has a prominent agricultural sector, with strong tourism ties, particularly in the wine region. Promoting climate-friendly food and beverage production, processing, and distribution ensures that local residents will have access to affordable, healthy food, and farmers can enjoy the economic benefits of increased crop yields and agro-tourism.

Bold, coordinated, strategic action

In July 2019, New York State passed the historic Climate Leadership and Community Protection Act (CLCPA) to fully decarbonize the electricity grid and achieve a net-zero carbon economy by 2050.

Currently, several economic factors impede climate progress in the Region, including:

- the high levels of poverty, which make clean energy solutions unaffordable for many local residents
- the high percentage of rental properties and the “split incentive” that results when tenants pay the bills and landlords make decisions about energy improvements
- “car culture” and insufficient public transit options
- the age and condition of the Region’s building stock
- clean energy incentive programs that are difficult to navigate and/or not sufficiently generous



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Amped: Go All Electric!

Amped is a campaign that brings together the Climate Solutions Accelerator and other community partners to inform and facilitate the adoption of beneficial electrification in the Region.

Beneficial electrification is the process of switching from technologies that burn fossil fuels (e.g., natural gas, propane, oil) to technologies that are powered by electricity, especially for heating and transportation. The benefits of beneficial electrification include:

- reducing carbon emissions
- saving consumers money – especially low-income consumers
- improving public health, safety, and quality of life
- fostering a more robust and resilient electrical grid

To meet the goals of the CLCPA, rapid changes are needed both at the system and individual levels (see table, p. 3). Though several sustainability initiatives are occurring independently across the Genesee-Finger Lakes Region, much more needs to be done

When thinking about climate mitigation strategies in Table 1, the Region needs to consider policy and financial incentives to address these structural issues identified above. This will ensure that any mitigation solutions are viable in the long-term. The Region can reduce emissions – while improving quality of life for all residents – by moving quickly to implement climate solutions across all sectors. The success of this effort will require a bold, coordinated, strategic approach.

REFERENCES

- 1 See IPCC’s Special Report: Global Warming of 1.5°C (www.ipcc.ch/sr15/)

For more information

APR 2021

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