SINK, STORE, REDUCE, OFFSET

An innovative GHG inventory and its implications for achieving local carbon neutrality.

ECO LOGICAL CITIZEN'S PROJECT

I·C·L·E·I Local Governments for Sustainability USA

Dear Neighbors,

We expect that if you take some time to read the results of this community inventory of greenhouse (GHG) emissions, you will be at first depressed, a bit surprised, and hopefully begin to see the opportunities to build a better community if we rise to meet the challenges we are all faced with. To read the full report, please visit **ecologicalcitizens.org**.

This inventory attempts to measure all of the emissions created through the production, distribution, and disposal of the goods and services we purchase and consume. It reveals clearly how our participation in a fossil-fuel powered, global, disposable, consumption-driven economy feeds the fires of climate change. After the shock of the coronavirus pandemic, it also reminds us that the new world we must create should be built on a more resilient foundation of secure access to local food, a durable and prosperous local economy, and a more socially connected community. The status quo is not acceptable. We have the work of regeneration ahead of us.

At the same time, this is one of the first local GHG inventories in New York State that attempts to measure the work of nature around us — our forests, wetlands, and fields — to remove and store carbon from the atmosphere. By looking at both sides of the ledger, emissions and natural carbon removals, it is hard to ignore the reality that our way of life is out of balance with the natural world that supports life on our planet.

There is no more time to wait, for the clock is already against us and we will be judged by what we did when faced with the truth of our situation. We cannot wait for others to act for us, for while international and national policy change will be critical, at the end of the day real people living in local communities everywhere will be the ones who must make change happen.

While no inventory that attempts to measure the complexity of living systems can ever claim to be exact, this inventory helps us identify where change can be most effective. Ours can be a future where improving personal and community health means fighting climate change. A future where building a local food system and spending our money in local businesses means fighting climate change. Where each of us can plant a tree, or a garden, or protect a wetland to join the side of nature in protecting human life. The future we can build can be defined not by scarcity, but by an abundance of the things that matter most.

AS ACTIVIST ED WHITFIELD HAS WRITTEN,

"Our full humanity is tied up in not just resisting power, not just directing other people with power, but ultimately being the power ourselves, to meet our needs and to elevate the quality of life in our community for ourselves and the people we care about."

The world at this moment needs living examples of communities that have found a balanced way to live. And if not Philipstown — with our love of nature, numerous community organizations and civic spirit, and relative affluence and economic means — then who?

We have a single generation to get this work done. Only together can it be accomplished. We hope you will join the effort.

— Jason Angell and Jocelyn Apicello, *Ecological Citizen's Project*

In October 2018, the United Nations Intergovernmental Panel on Climate Change (IPCC) found that to avoid the worst consequences of climate change global society will have to limit warming below 1.5°C by achieving carbon neutrality — when human-caused greenhouse gas (GHG) emissions are balanced by human-caused emissions removed from the atmosphere — by 2040.

Given the uncertainty of sufficient international or federal action and the urgent time frame, we must explore all options to address climate change locally. What does the path to carbon neutrality look like at the local community level? This report is the product of nearly two years of work, the result of a collaboration between Hudson Valley scientists, community leaders, and volunteers to produce the Town of Philipstown's first community carbon inventory and reflect on its implications for achieving local carbon neutrality.

This innovative inventory is one of the first in New York State to use real local data to measure the full life-cycle carbon emission impacts of the goods and services our residents consume and to estimate the work of our natural resources to remove and store carbon from the atmosphere. We hope this report helps create a data-based Climate Action Plan (CAP) toward carbon neutrality for the Town of Philipstown by 2040 and serves as a roadmap for other local communities of how we all can take transformative action to meet humanity's greatest challenge.

PHILIPSTOWN INVENTORY REPORT | 2020 | EXECUTIVE SUMMARY

COMMUNITY GHG EMISSIONS

As opposed to the standard inventory approach which measures only the emissions produced within a community's geographic boundaries, a consumption-based inventory also localizes the global problem of climate change by accounting for the emissions produced as a result of our purchase of goods and services. The consumption-based estimates of our emissions are 83% higher than our production-based estimates and reveals how essential shifting our purchasing behaviors to support stronger local economies will be to achieving carbon neutrality.

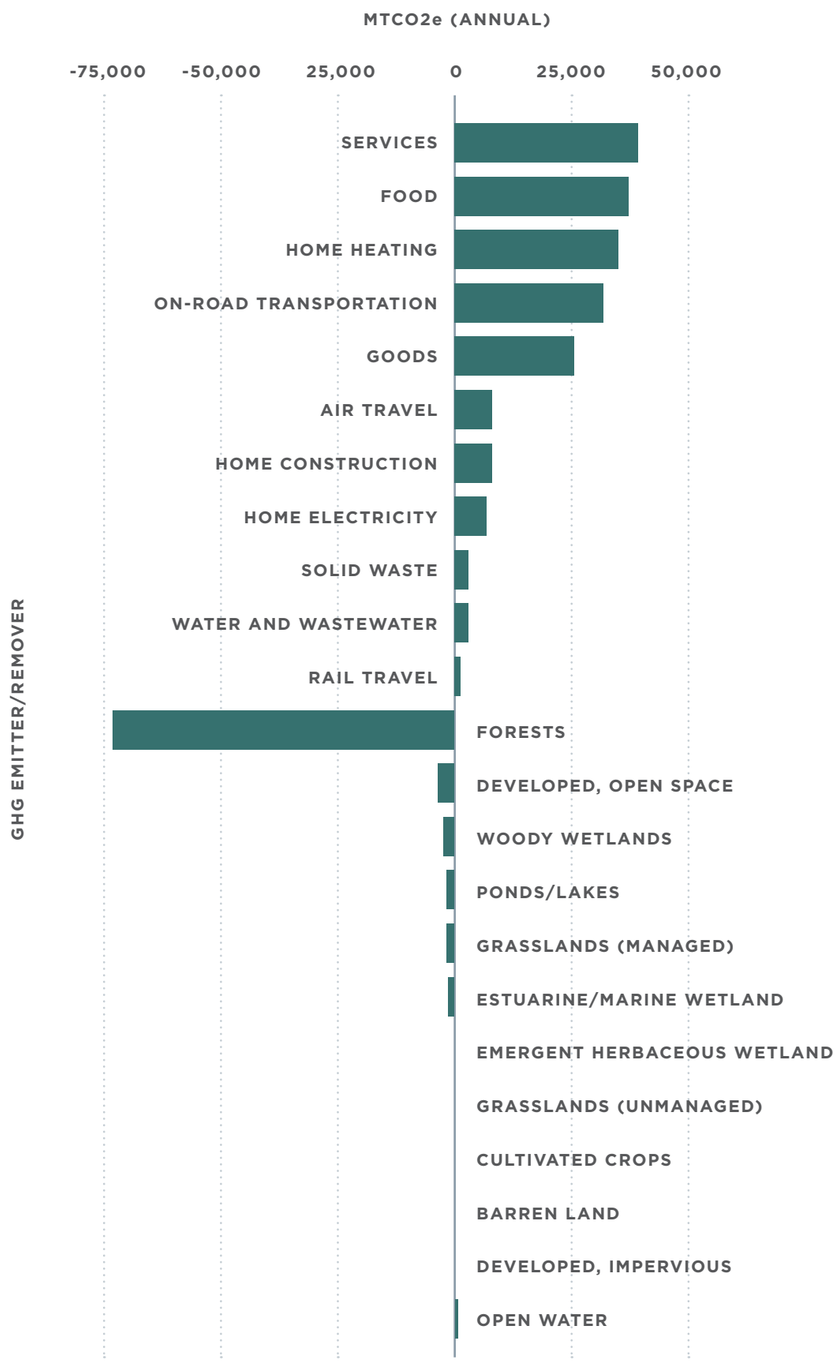
Total emissions for the consumption-based inventory were calculated at 198,703 metric tons of carbon-dioxide equivalent (MTC02e) for the Town of Philipstown, which translates to 55.5 MTC02e per household or 20.4 MTCO2e per person. The top five emission categories in the consumption-based inventory are responsible for nearly 90% of the Town of Philipstown's community-wide emissions. The leading source of emissions result from residents purchase and consumption of services (led by health services, which account for 10% of national GHG emissions), food (driven by beef consumption and a globalized food chain), home heating (due to use of fossil fuel powered heating and cooling), on-road transportation (due to use of fossil fuel powered vehicles) and goods (driven by a globalized, disposable production system).

COMMUNITY GHG REMOVALS

Our forests (77.8% of Philipstown's acreage), lawns/fields (9.5%) and wetlands (5.0% remove a great amount of carbon emissions from the atmosphere through the process of photosynthesis and store them back into the earth. The work these natural resources do to support ecological balance have been ignored at great cost. Working with local scientists, our inventory estimates that the Town of Philipstown's natural resources annually removes a total of between 79,036-86,098 MTC02e each year — equivalent to roughly 40% of our annual community-wide emissions. And even though wetlands comprise only 5% of Philipstown's land use, they store an amount of carbon that is equivalent to nearly twenty years of Philipstown's annual community-wide emissions.

Today, roughly half of Philipstown's forests and 36% of Philipstown's freshwater inland wetlands are currently protected or conserved. These estimates highlight that the loss of land uses like forest, wetland, or fields would be a source of significant new emissions that make the path to local carbon neutrality more difficult to achieve. Putting a value on ecosystem services introduces a powerful new tool for local communities to protect their natural resources, lays the groundwork for a future local carbon offset program, and reveals the vital caretaking role humans can play in increasing natural carbon sequestration and storage.

TOWN OF PHILIPSTOWN EMISSIONS AND REMOVALS



PHILIPSTOWN INVENTORY REPORT | 2020 | EXECUTIVE SUMMARY

THE WORK AHEAD

The United Nations IPCC report stated that "limiting global warming to 1.5°C requires rapid, far-reaching and unprecedented changes in all aspects of society." In order to reach carbon neutrality by 2040, each resident of Philipstown, on average, would have to reduce or offset their emissions by 1. MTC02e each year. The road to local carbon neutrality will call for significant changes in our personal behaviors, local public infrastructure and economy, and land use practices. While none of these proposed responses have been officially adopted by the Town of Philipstown, we believe they would make our community a national local leader in the fight against climate change:

- Establishing a dedicated local fund to support the carbon neutrality campaign;
- A community health initiative that promotes less need for health services, such as healthy eating, increased physical activity and non-motorized transportation opportunities, and increased social connections to reduce isolation;
- Reduced beef consumption and increased regenerative food production within the Town of Philipstown and sourcing of local foods by community grocers, restaurants, and institutions;
- Transition to fully electrified home heating, cooling, and personal vehicles for transportation, supported by a Community Choice Aggregation (CCA) that is estimated to have reduced local electricity supply GHG emissions by 97% compared to previous Central Hudson sources;
- Reduced housing stock emissions by a community energy efficiency campaign, updated local building codes, and encouraging the development of smaller, more efficient homes;
- Creation of a master plan for local economic development that incentives local goods production, encourages residents to purchase less generally and more local goods, and reduces goods waste;
- Prevented conversion of Philipstown's forests, wetlands and fields to developed space, in order to prevent the loss of our natural resource's annual carbon removals; and
- Establishing a Philipstown Civilian Conservation Corps (CCC) dedicated to reforestation, wetlands management, and a transition to regenerative soil practices

We recommend that the Town of Philipstown adopt the results of this consumption-based and land-use inventory as our official community baseline. As the Town's Climate Smart Community Task Force embarks on the work of developing a CAP that establishes targets to reduce or offset future GHG emissions, we recommend they adopt the goal of becoming a carbon neutral community by 2040 or a carbon negative community at an earlier target date if the Town decides land use, land use change and forestry carbon removals should count towards net emissions at the local level. Working together, we can demonstrate what it will take to build a more healthy, happy, connected and regenerative community.

CHRISTINE ASHBURN PHOTOGRAPHY