



WOODSTOCK, N.Y.
COLONY OF THE ARTS

Kenneth S. Panza, Liaison
Town of Woodstock
45 Comeau Dr.
Woodstock, NY 12498
kpanza@woodstockny.org

December 10, 2018

Woodstock Town Board
45 Comeau Dr.
Woodstock, NY 12498

Woodstock Climate Action Plan

In March 2007, the town board adopted a resolution committing that town governmental operations would be carbon neutral by year-end 2017. The town achieved carbon neutrality in 2015 and was formally recognized for its accomplishment at the 2017 annual meeting of the New York State Association of Conservation Commissions.

A three-pronged approach was used to achieve carbon neutrality. First, fossil fuel heating systems were replaced at the highway garage and town hall with ground-sourced heat pumps and at the community center with an air-sourced heat pump. The heat pumps reduced the building carbon footprints and energy costs.

NOW, THEREFORE, BE IT RESOLVED that the Woodstock Town Board commits to a Zero-Carbon Initiative, leading the Woodstock community by example and by implementing policies resulting in no net emission of carbon dioxide and other greenhouse gases by the end of 2017, and;

BE IT FURTHER RESOLVED, that as a public-private partnership, the Woodstock Zero-Carbon Initiative shall feature Town Government as a key stakeholder in a comprehensive community carbon-neutrality effort, which includes institutions, businesses, civic organization, and individual families and residents, and;

Carbon Neutral Resolution, March 2007

Second, energy efficiencies were achieved with police vehicles, the Rock City Rd restrooms, and at the water wells. By replacing 8-cylinder police vehicles with 6-cylinder models, gasoline consumption was reduced. The recent availability of hybrid police vehicles presents an opportunity for additional reductions in gasoline usage. Winterizing the Rock City Rd convenience restrooms reduced electricity usage by about two-thirds, and maintenance and repair actions at the town's water wells reduced electricity consumption by about 30 percent.

Third, 500-acres of town owned forest were identified as a carbon sink available to sequester carbon dioxide emitted by town governmental operations. By year-end 2018, not only has the town reached carbon neutrality, the town has achieved Drawdown, defined as sequestering more carbon dioxide than the town emits.

Since 2011, carbon emissions from town governmental operations have dropped by 15%, and it's expected that by 2020, the town will have reduced its emissions by 30%. Because of carbon sequestration by the 500 acres of town owned forest, the town is removing more carbon from the atmosphere than it emits.

What's Next?

The town board has discussed projects that will further lower the town's carbon footprint. The identified projects include:

Renewable Electricity – Reduce Carbon Footprint by 100 Metric Tons

The town board has seriously considered installing solar panels to provide renewable electricity for town governmental operations. For a variety of reasons, none of these efforts succeeded. Last year, the town received a proposal for renewable hydroelectric power from the Natural Power Group, which operates generating facilities on the Wallkill and Wappingers Rivers. Acquiring renewable electricity is the most significant action that can be taken to reduce the town's carbon footprint.

Hybrid Police Cars – Reduce Gasoline Consumption by 20%

The replacement of 8-cylinder police vehicles by 6-cylinder models reduced the town's gasoline consumption by about 20 percent. Last fall, Ford announced a proper hybrid police car that has the possibility of reducing gasoline usage by another 20%.

LED Street Lights – Reduce Electric Usage by 30,000 kWh

Conversion of the town's Sodium vapor and Mercury vapor street lighting to LED technology has the potential to cut our electrical consumption for streetlighting by 40 percent.

Town Offices Renovation – Eliminate Fossil Fuel Heating Systems

The proposed renovation of the town office (Comeau) buildings should include elimination the fossil fuel heating systems by conversion to heat pumps. The uses of heat pumps in other town buildings reduced the carbon footprint and the cost of energy of these buildings.

Full implementation of these programs could result in Woodstock reducing its carbon footprint by 40 percent compared to 2011 over the next several years.

Additional Items for Consideration

There are a couple of possibilities for additional improvements in energy efficiency that have not been previously discussed, but might be worthy of serious consideration.

Youth Center – Full Energy Audit, Heat Pumps

As a residential structure, the Youth Center is eligible for grants to perform an energy audit. The town board should consider applying for these grants and services. A full energy audit can identify air leakages, requirements for insulation and caulking, etc. The replacement of the fossil fuel heating system with a heat pump should be considered.

Micro-Grid for the Pump Houses – Provide Emergency Power to Pump House #2

Only pump house #1 is equipped with an emergency generator, leaving pump house #2 vulnerable to power outages. Establishing a local micro-grid between the two pump houses would allow both pump houses to be serviced by one emergency generator.

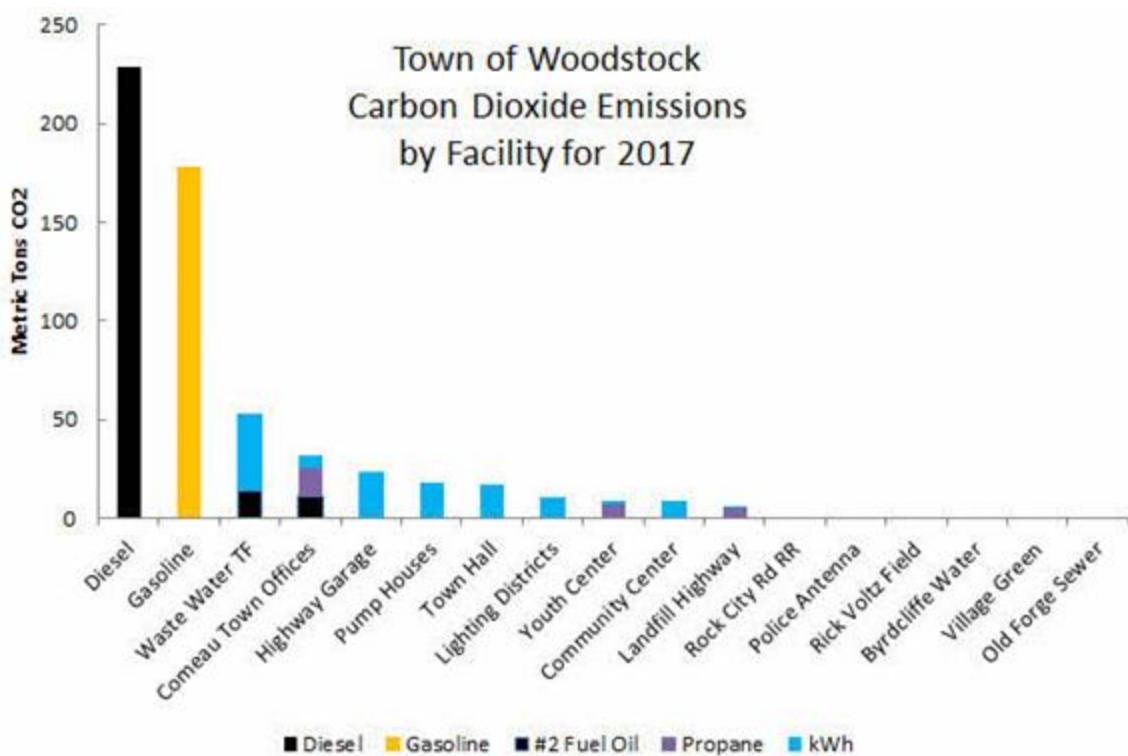
Waste Water Treatment Facility – Investigate Alternatives to Fuel Oil Use

The waste water treatment facility seems to use a lot of fuel oil. The use should be understood and consideration given to alternatives that might reduce the use of fuel oil.

End of the Technology Road

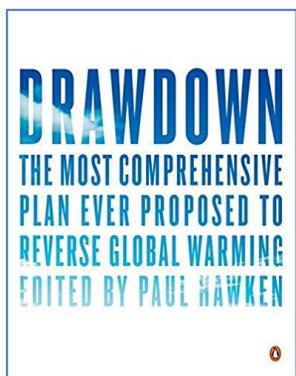
There's a fundamental limit of what can be accomplished with existing technology. There is no good alternative for diesel fuel used by the highway department and there are limitations on how much gasoline consumption can be reduced. Although there's a clear, identified role for hybrid police and town vehicles, it's unclear at this time about the use of all electric vehicles.

The bulk of Woodstock's carbon emissions are sourced from diesel fuel and gasoline, and new technology will be needed to significantly reduce emissions from these sources. But major reductions can be achieved by implementing the projects identified in this climate action plan. Adopting renewable electricity will essentially zero out the carbon emission attributed to town's buildings.



Project Drawdown

Drawdown is that point in time when the concentration of greenhouse gases in the atmosphere begins to decline on a year-to-year basis.



Drawdown, a recently published survey of the 100 best climate-stabilization solutions edited by Paul Hawken comes with an ambitious subtitle: “The Most Comprehensive Plan Ever Proposed to Reverse Global Warming.”

An event sponsored by Woodstock Land Conservancy and Woodstock Transition discussed Drawdown and viewed videos of Paul Hawken explaining the project. The Omega Center for Sustainable Living hosted a 3-day collaborative event in October, which began with an in-depth overview of Project Drawdown by Paul Hawken and his team.

Project Drawdown, a global coalition of researchers, scientists, economists and others, has built a model to evaluate and rank the top active solutions to global warming, based on their actual impact on greenhouse gas emissions. Ulster County and many local environmental groups have embraced **Drawdown** and the solutions it describes.

Because Woodstock has identified 500 acres of town owned forest as a carbon sink, Woodstock can assert it has achieved drawdown for governmental operations. Woodstock used the following Drawdown solutions to achieve carbon neutrality:

Drawdown Solution	Rank	Description/Use
Temperate Forests	#12	500 acres of town owned forest to sequester carbon
Rooftop Solar	#10	Solar panels installed at the Highway Garage and Town Hall
In Stream Hydro	#27	Hydroelectric power from Natural Power Group
Retrofitting	#80	Town Hall and Community Center renovations
Heat Pumps	#42	Ground-sourced and air-sourced heat pumps
LED Lighting	#44	New construction, Lime Energy, and street lighting
Insulation	#31	Winterized Rock City Rd convenience restrooms
Cars (Hybrid)	#49	(Proposed for Police Department)