

# Greenburgh Nature Center Sustainability Report 2018



Produced in partnership with Green Business Partnership



Green Business  
Partnership

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Greenburgh Nature Center is a 33-acre nature preserve with trails, a pond, a Native Plant Meadow, Nature's Discovery Playground, Barnyard, and gardens. We impact close to 90,000 individuals each year. Our mission is to ignite passion, curiosity, and respect for our natural world. We are the first nature center to be a certified [Green Business](#). Sustainability is modeled and demonstrated in our operations, programs, and events. The Nature Center is a refuge for wildlife, with an active educational program to promote the appreciation and understanding of nature and the environment.

## VISION

*“The Greenburgh Nature Center’s vision is to be a leader in the region for environmental education and best sustainable practices, while providing enriching hands-on visitor experiences and a venue for community activities. We will continue to offer exciting, unique, and interactive educational programs for people of all ages, as well as a range of community activities to engage people, businesses, and governmental entities with each other on environmental sustainability issues, while aiming to instill in future generations an appreciation for and will to protect nature.”*



**The Greenburgh Nature Center is committed** to reducing our environmental footprint and promoting environmental stewardship at all levels of our organization.

**Our goal** is to minimize our organization's impact and maximize future generations' ability to live, work, and play in our shared natural environment, with equal access to clean air, clean water, and natural resources.



**We will strive** to minimize pollution and waste, conserve energy and water, protect habitat, support renewable energy resources, buy environmentally friendly products, and encourage environmentally preferable transportation. These efforts will extend to contractor and supplier relationships. We will encourage contractors and suppliers serving or otherwise acting on behalf of the organization to meet our standards of environmental performance.

**Employee understanding and involvement** are essential to the implementation of this environmental policy. All employees will receive a copy of this policy and be educated about our company's efforts to improve our environmental performance. Employees at all levels of the company will be involved in supporting our goals.





We are committed to fostering awareness and understanding of environmental issues and believe in developing a dialogue of care around our interconnectedness with nature. We have developed numerous forms of communication for our employees and broader community.



## Green Email Blasts

**Green Employee Certificate:** The Sustainability Department recognizes staff members who go above and beyond in their efforts to assist in the GNC's sustainability goals. All staff are welcome and encouraged to nominate their coworkers.

**Discuss Your Green Thoughts and Suggestions:** Through day-to-day conversation, email and the "Green Thoughts and Suggestions" tool, continuously comment on sustainable policies and initiatives: what works, what doesn't and any ideas on how GNC can continually improve the efforts.

**Conduct an Annual Sustainability Training Luncheon:** The luncheon offers Greenburgh Nature Center staff the chance to review progress, including the annual Energy Report and GHG Emission Inventory Tool. Staff updates goals from the previous year and set new ones.

**Celebrate** the Greenburgh Nature Center's adherence to our values, mission and sustainable accomplishments while sharing our efforts with the community during our annual Earth Day Celebration and every day in between.

## Sustainability Policy and Training Manual



We reduced the miles traveled by our fleet vehicles to reduce the amount of greenhouse gas emissions as part of scope 1 emissions. This was achieved by a preferential use of our more efficient vehicle and decreasing the use of our less efficient SUV. In 2019 we are adding an electric vehicle to our fleet to reduce the emissions even further.

The scope 2 emissions from purchased electricity decreased by 29% mostly as a result of converting 77% of lighting to LED. Some of the decrease of the electricity use in 2017 and 2018 is also attributed to the fact that the building was closed for 2-3 months due to renovations, although there was some electricity used for construction equipment.

## Greenhouse Gas Emissions Inventory (Metric Tons of CO<sub>2</sub>e)

	2014	2015	2016	2017	2018
Heating Oil (fuel oil #2)	30.69	44.55	47.15	44.16	46.94
Fleet	3.63	3.23	2.44	2.19	1.99
<b>Total Scope 1</b>	<b>34.31</b>	<b>47.78</b>	<b>49.59</b>	<b>46.35</b>	<b>48.93</b>
Purchased Electricity	24.60	23.92	19.68	17.76	17.50
<b>Total Scope 2</b>	<b>24.60</b>	<b>23.92</b>	<b>19.68</b>	<b>17.76</b>	<b>17.50</b>
Employee Commuting	27.32	28.46	19.47	18.82	11.04
<b>Total Scope 3</b>	<b>27.32</b>	<b>28.46</b>	<b>19.47</b>	<b>18.82</b>	<b>11.04</b>

## Avoided Greenhouse Gas Emissions (Metric Tons of CO<sub>2</sub>e)

	2014	2015	2016	2017	2018
GHG Emissions Reductions from					
Alternate Waste Disposal	15.91	15.56	14.67	10.70	10.70
<b>Total Avoided Emissions</b>	<b>15.91</b>	<b>15.56</b>	<b>14.67</b>	<b>10.70</b>	<b>10.70</b>



The Greenburgh Nature Center occupies two buildings owned by the Town of Greenburgh, both of them over one hundred years old. The offices and museum are located in the Manor House while the cottages on the property are used as staff residences. Two main energy sources at these buildings are purchased electricity and heating oil.

In the past four years, 53% of the lighting has been converted to LED. In the current year, another 24% of the lighting is being converted, bringing the total LED lighting to 77%. LED is a highly energy efficient lighting technology. According to EPA, LED lighting uses 75% less energy and lasts 25 times longer than incandescent lighting.

The Manor House utilizes programmable thermostats and implemented numerous behavioral changes to bring the energy consumption down. The staff is trained to use sunlight whenever it is sufficient, turn off lights when not in use, all computers and copiers use sleep/stand-by mode after specified time of non-use and they are shut off at the end of the day, power strips were installed to control “phantom” plug loads from equipment, and natural ventilation and fans are used whenever possible. Since joining Green Business Partnership in January 2014, the Greenburgh Nature Center has achieved a 29% reduction in electric use.

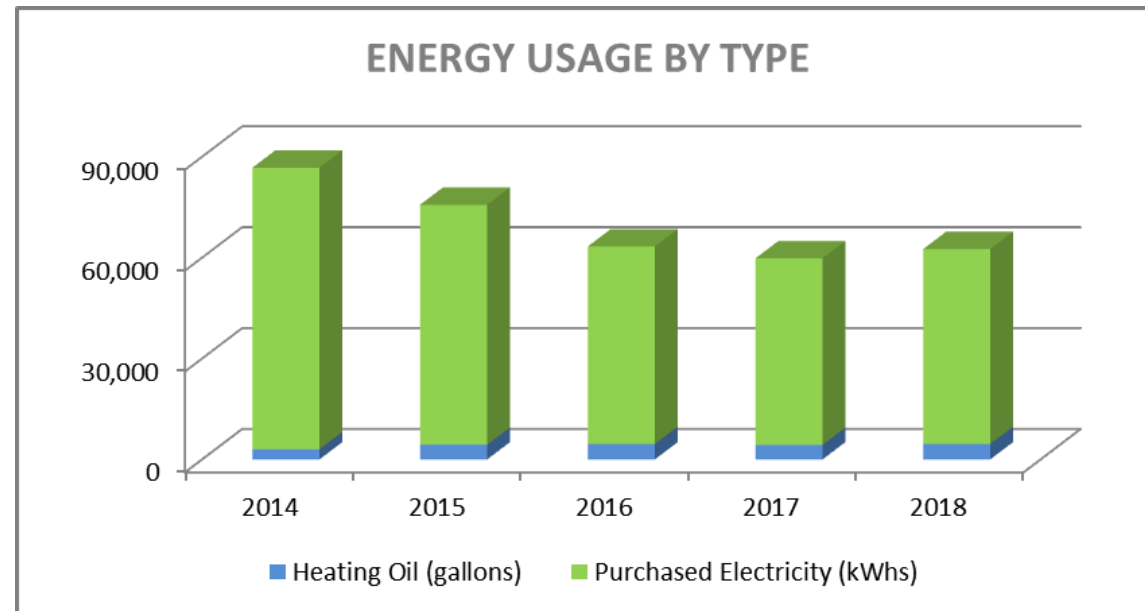
In the past two years, the Manor House has been undergoing major renovations. In 2017, a new roof was installed to replace a very old one with poor insulation. In 2019 a renovation will encompass the entire building – replacing all doors, windows, exterior insulation and siding. New Energy Star rated windows provide less heat loss and improve the comfort for the building occupants. New air conditioning units are all Energy Star Certified models.



**29%** ELECTRICITY USAGE DECREASE SINCE 2014



The amount of purchased electricity decreased by 29% in comparison to our 2014 baseline. The decrease in purchased electricity was mostly achieved by LED lighting retrofit. To date 77% of the lighting at Greenburgh Nature Center was converted to LED.



**77%** OF THE LIGHTS CONVERTED TO LED





In October 2015, the Greenburgh Nature Center commenced weekly measurement of discarded materials, including waste, commingled recycling, paper recycling, museum organics/compost and staff and guest generated organics/compost. The current waste diversion rate is 66%. Moving forward, Greenburgh Nature Center aims to increase this figure annually. All employees and custodial staff are trained on proper waste disposal and recycling practices. Different collection bins are clearly labeled with signs donated by Recycle Across America.

Since joining Green Business Partnership 5 years ago, the use of paper materials and supplies was reduced by about two thirds due to behavioral changes such as setting the printers to double-side printing, use of electronic communications instead of paper copies, using Catalog Choice to opt out of as many junk mail mailing lists as possible, using scrap paper for drafts and notes, and reusing incoming cardboard boxes, envelopes and shipping materials. To reduce the use of paper towels, all animal exhibits are cleaned using reusable rags made from old t-shirts and bed sheets.



In addition to typical recycled materials such as office paper, plastics and glass, in 2015 Greenburgh Nature Center implemented electronics waste recycling. All CFL & LED light bulbs are returned to Home Depot. All electronics are recycled by the Town's Public Works Department with Brookfield Resource Management, Inc.



# Waste and Recycling

A large majority of the Nature Center's waste is generated by the guests during birthday parties, in-house school programs and camps. To increase the diversion rate, parents are being educated on the economical and environmental benefits of Green Birthday Parties using the Parent's Guide to Green Parties and the staff is trained to direct guests to properly source separate during the events. Reusable bamboo plates have served over 400 birthday parties to date and are also utilized at the summer camps. The average event diversion rate is 75% with a goal of increasing the rate every year. The annual Earth Day event has 95% waste diversion rate as a result of cooperation with the food vendors to eliminate any wasteful items.

Five years ago, Greenburgh Nature Center staff and volunteers re-designed the composting systems so that all organic waste generated on site is composted in aerobic static piles. Staff is directed to compost all leftover fruits, vegetables, starches, egg shells, coffee grinds, tea bags and compostable paper products on a daily basis. Additionally, the Animal Museum composts all of its animal bedding, which consists of newspaper and wood chips. All Animal Museum compost, which totals approximately 17 pounds per day, is placed in the open compost bins. Finally, all yard waste (leaves, branches, brush, etc.) is composted in the yard waste compost pile.

In January 2018, the Nature Center partnered with the Town of Greenburgh to launch a free community food scrap recycling drop off program to residents for with a goal of moving this program to curbside by 2020. The Nature Center sold over 700 composting kits in the first year of the program. In April 2019, the Nature Center will be hosting a "compost giveback day" with free finished compost for the community members as a way to garner support and awareness for the program.



**75%** AVERAGE EVENT DIVERSION RATE

# Waste and Recycling

Greenburgh Nature Center is working with public and private schools to launch school wide zero waste programs thanks to grant from New Belgium Brewing Company. So far the Nature Center has partnered with Dobbs Ferry High School, Ardsley High School, and Iona Preparatory School. Student clubs are educating on best recycling practices, piloting composting in the cafeteria and selling reusables like straws, bottles and tote bags. At the end of the campaign in May 2019, all of the student club members will participate in a Zero Waste Summit hosted by Greenburgh Nature Center to share their campaign's success and talk with students from other schools sharing best practices.

Another generous grant, made possible through a partnership with Con Edison, provides \$20,000 for one year to bring STEM-based renewable energy programs to 4th grade through middle school students. The program is called Flipping the Switch – Understanding Our Energy Choice and its funding allows teaching the program to 40 classes for free, reaching well over 1,000 students.

Staff is provided with reusable water cups, coffee mugs, and utensils, as well as two kitchen sinks in which they are able to wash their reusable dishes and utensils. Whenever food is served, it is served in reusable bamboo dishware with reusable utensils and cups. All of the napkins used are 100% recycled content and compostable. Water and other beverages are served using bamboo pitchers. Coffee made by Greenburgh Nature Center staff is prepared in a french press or a traditional drip machine. Staff has access to organic chicken eggs from on-site chicken coop and seasonal vegetables from organic garden.



**1,000** STUDENTS REACHED WITH FLIPING THE SWITCH PROGRAM





In the fall of 2015, the Greenburgh Nature Center discontinued the sale of bottled water in the Gift Shop, asking guests to instead enjoy the filtered water fountain and, if so inclined, purchase a Greenburgh Nature Center reusable water bottle. In early 2016, the sale of all single-use bottled beverages was discontinued as well. The gift shop also transitioned to more nutritional and organic snacks.

Paper products such as printer paper, mailing, napkins, paper towels and toilet paper are made from recycled content. The shipping materials are being reused for occasional outgoing packages.

All cleaning products are purchased from the Grove Collaborative, a Certified B-Corp, which offers household cleaning supplies from eco-conscious brands. For the educational programs where children handle animals, Purell's BioPreferred Design certified sanitizer is used instead of traditional formulas.

Every year, the Nature Center runs an online backyard composter and rainbarrel sale at wholesale prices and teaches community members how to use them.



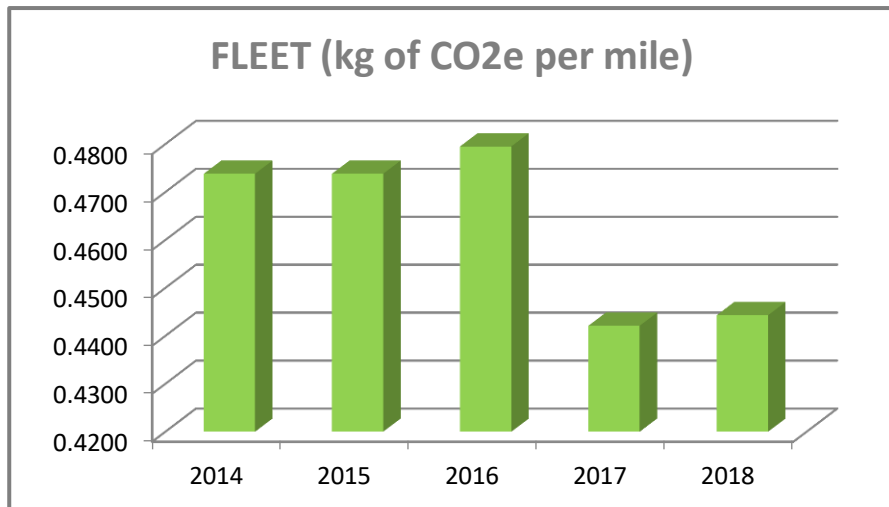
**4 Years** SINCE WE DISCONTINUED THE SALE OF BOTTLED WATER





Greenburgh Nature Center has 2 vehicles in its fleet. These average approximately 2,500 miles each per year. Both of the fleet vehicles are serviced at least twice a year. Fuel-efficient driving tips from Eartheasy were provided to staff and will be revisited at the Sustainability Training Luncheons, as well as being included in the Sustainability Policy & Training Manual. In addition, the “Frequent Outings Best Route Booklet” was introduced to the staff. The booklet provides best route information from the Nature Center’s location to recurring outreach and shopping locations. “No-Idling” signage was implemented around the Greenburgh Nature Center property. We were able to decrease the CO<sub>2</sub>e emissions per mile by a preferential use of the more efficient vehicle. In 2019 we are adding an electric vehicle to our fleet to further reduce the fleet emissions.

Telecommuting and flex-time schedules are offered to employees on an individual basis. A bike rack is provided to staff that wish to bike to work.



The Greenburgh Nature Center's 33-acre property is owned by the Town of Greenburgh. Close to the Eastern edge of the property is Woodfrog Pond, home to a number of frogs and other amphibians. The pond is protected within the confines of the property acreage and is closely monitored by the Naturalists for any debris from guests.

The monitoring and removal of invasive species on the property is an ongoing effort. The Town has previously removed invasives with the assistance of Scout and other volunteer groups to combat the presence of English Ivy, Burdock, Poison Ivy, Euonymus Bushes, Bittersweet, Knot Leaf and Wisteria. Whenever invasives are removed, they are replaced with native species or wood chips to prevent their regrowth. The two current additions to the Nature Center's grounds, the Wigwam and the Longhouse. The structures were constructed with sustainable local sources, mostly maple, phragmites, and cedar.





In 2014, a grant from Volunteer New York! provided the funds to create a Rain Garden adjoining the Great Lawn. It was installed in an area that has historically flooded from heavy rains. The purpose of the rain garden is to collect and filter rainwater and stormwater runoff. The combination of soil and native plants allows for both the rapid absorption of stormwater and the efficient filtering of pollutants. In addition to alleviating flooding on the lawn and keeping unfiltered water from emptying into the Bronx River, this project lends itself to an educational component, which is a positive enhancement to the Nature Center's sustainability curriculum.



In the Spring of 2018, a scout group helped to install a solitary bee hive on the grounds that is a great pollinator habitat. Many types of plants depend on animals for pollination. A recent study by the National Academy of Sciences confirmed that populations of honey bees and some wild pollinators are declining. The majority of crops in the United States are pollinated by honey bees. To support our pollinators it is best to install native plants as they attract more native pollinators and can serve as larval host plants for some species of pollinators.



Adaptive and native plants with low water needs are grown at The Native Plant Meadow. The plants were installed in a way which limited the need for irrigation equipment to one single line. An Efficient Water Sense irrigation system is installed in our organic garden and front native plant landscaping. Finally, "Reduce Your Flow" signs were implemented on all sinks to remind employees to turn the water off fully and report leaks. Some sinks have flow restrictors installed and the guest bathroom sinks use single push-down handles which reduce water flow after 10 seconds and shut-off water flow after an additional 5 seconds.

All leaves on the property are recycled by mulching on site. Staff and volunteers use leaf mulch and compost to enhance the soil structure and nutrition in the Native Plant Meadow, the Rain Garden and the organic Vegetable Garden.

All storm drains on the property are covered by metal grates comparable to those used in municipal catch basins. The top of the grates are swept of debris weekly by volunteers and the insides of the storm drains are cleaned on a seasonal basis.

When de-icing the walkways and doorways in winter, the Greenburgh Nature Center uses Green Scapes Ice Melt, an eco-friendly alternative to traditional salt. The Town of Greenburgh uses a calcium chloride mixture to reduce the amount of salt they need to use on the driveway and in the guest parking lot.





## ENERGY

- Replace dishwasher and washer and dryer for more energy efficient models.

## WASTE

- Continue to introduce zero waste campaigns and composting programs in local schools.

## TRANSPORTATION

- Replace both fleet vehicles with a more fuel-efficient, possibly hybrid or electric alternative.

## WATER

- Replace sinks with the original split-handle when funding becomes available under the WaterSense upgrade plans.
- Explore grant funding options for a Guest Restroom renovation to install WaterSense sinks, toilets and urinals, as well as the possible addition of a rainwater collection system for non-potable toilet water.



# About Green Business Partnership

Using a comprehensive, customized digital toolkit and a propriety emissions tool, the Green Business Partnership (GBP) helps organizations become sustainable in all areas of operation, achieve green business certification, and get recognized for their commitment. The program, accessible from any computer or smartphone, is open to businesses or nonprofits of any size that lease or own commercial or industrial space. Once certified, custom sustainability reports show your customers, employees and the rest of the world that your organization has taken action and is making a measurable difference.



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Learn more at [www.greenbusinesspartnership.org](http://www.greenbusinesspartnership.org).

