VILLAGE OF NORTHBROOK
ENVIRONMENTAL QUALITY COMMISSION
Thursday, April 15, 2021

Important Notice:

Pursuant to Section 7(e) of the Illinois Open Meetings Act (5 ILCS 120/7(e)) of Governor Pritzker's latest Proclamation of Disaster and Executive Orders related to the ongoing COVID-19 pandemic, this meeting of the Northbrook Environmental Quality Commission will be **conducted remotely** through a video conference call and will not be held at Village Hall. If you wish to hear the discussion or watch the meeting remotely, please contact Michaela Kohlstedt, Deputy Director of DPS, at michaela.kohlstedt@northbrook.il.us for call-in or viewing instructions

Audio conference: **Dial: 408-418-9388**
Access code: 187 447 1466

Individuals wishing to watch the video conference at the Village Hall may call 847-664-4051 by 4pm Thursday April 15 to reserve a seat where there is limited seating (8 seats) and masks will be required as well as maintaining proper social distancing.

REMOTE MEETING
AGENDA

7:00 P.M.

1) Call To Order
2) Review of Minutes – March 18, 2021 Meeting
3) Hear From the Audience – Items not on the agenda
4) Community Planning Report
5) Northbrook Sustainability Baseline Assessment & Climate Action Plan Team Update
6) Discussion Green Awards for 2021
7) Updates on Other Items:
   a) Communication Initiatives & Messaging
   b) Solar Permit Data
   c) Village Plastic Bag Recycling Update
   d) Recycling & Waste Data – Solid Waste, Electronics, Recycling, Light Plastics, Composting
8) Old Business
9) New Business
10) Remarks for the Good of the Order
11) Next Scheduled Meeting – May 13, 2021
12) Adjourn.

The Village of Northbrook is subject to the requirements of the Americans with Disabilities Act of 1990. Individuals with disabilities who plan to attend this meeting and who require certain accommodations in order to allow them to observe and/or participate in this meeting, or who have questions regarding the accessibility of this meeting or the facilities, are requested to contact Greg Van Dahm or Debra J. Ford (847-664-4014 and 847-664-4013, respectively) promptly to allow the Village of Northbrook to make reasonable accommodations for those persons. Hearing impaired individuals may call the TDD number, 847-564-8465, for more information.

Jeremy Reynolds, Chair of the EQC

MEMORANDUM
VILLAGE OF NORTHBROOK
DEVELOPMENT AND PLANNING SERVICES DEPARTMENT

TO: ENVIRONMENTAL QUALITY COMMISSION

FROM: TESSA MURRAY, GREENEST REGION CORPS MEMBER

DATE: APRIL 15, 2021

SUBJECT: CLIMATE ACTION PLAN UPDATE

The Climate Action Planning Team meets on April 12 to discuss the first draft of the finalized Climate Action Plan. Given the timing of this meeting, no material is available yet for the EQC's review. Commissioners can anticipate a summary of what the CAPT discusses during the presentation at the April 15 EQC meeting.

Village of
Northbrook

1225 Cedar Lane Northbrook, Illinois 60062 847.272.5050 www.northbrook.il.us

Green Resident Award Application

The Village of Northbrook's Green Resident Award program seeks to promote environmentally-friendly practices in Northbrook by recognizing households that have taken steps with meaningful results to make a positive impact on the environment.

Who is Eligible?

Residents located within the corporate limits of the Village of Northbrook.

How to Apply

Residents interested in applying for the Green Resident Award should complete this application and submit it to the Village of Northbrook at tessa.murray@northbrook.il.us by March 6, 2021. Only email submissions will be accepted. Residents should describe their practices and sustainable efforts with as much detail including how long they have been in place, the outcomes of these. Pictures may be attached to this application to help demonstrate the efforts taken to minimize a negative impact on the environment.

Review of Application and Awards

Applications will be reviewed by members of the Village's Environmental Quality Commission. They will choose 1 winner for the Green Resident Award. Awards will be announced at an April 2021 Village Board meeting.

Resident/Family Name: Eide Contact Person: Celine

Address: 1291 Shermer Rd Northbrook, IL 60062 Phone: 612-849-3770

Email: Celinekeide@yahoo.com

Description of sustainable practices and efforts implemented (use additional sheets if needed):

With my time as an intern with Go Green Northbrook, I have created and implemented a No-Idling campaign in the Village. The goal of this campaign is to minimize unnecessary idling, specifically targeting businesses who attract a high amount of car traffic for pick-up and delivery orders. During my studies as an Environmental Studies major, I have become extremely aware of the harmful effects that CO_2 emissions have on our environment, human health, and the climate change crisis. The pilot of this campaign started with an observational research study of the popular pick-up and delivery restaurant in the Village. I conducted a short observation, observation times ranged from 1-1.5 hours on a Friday, Saturday, and Sunday in January 2020. After analyzing the data, I had discovered that our community had emitted over 50 lbs of CO_2 in those 3 hours. It made me think about all of the emissions that were not accounted for. I took my campaign to the Village Board of Trustees and got a great response. They did not only approve of my campaign, but they helped me by publicizing my work and findings and forwarded it to other branches within the local government. I worked along side the Village Board of Trustees on getting businesses on board as partners to the campaign by displaying No-Idling signs in pick-up and parking zones.

Outcomes of these efforts and practices

After canvassing the businesses in downtown Northbrook, we successfully got the restaurants the Landmark Inn, Basu Vietnamese Eatery, and Kamehaci to partner with the campaign and display the No-Idling signs for 2 weeks. I observed and collected data on 3/26/2021 - 3/28/2021 to record the impact of the signs. Right off the bat, I noticed that the signs had a positive impact on the community. I noticed a decrease in average idling time as well as an increased number in those who chose not to idle. After analyzing the data, the average idling time also decreased from 3.9 minutes to 2.5 minutes. This decrease is significant because the total number of minutes idling went down from 556 minutes to 306 minutes. The Environmental Defense Fund says that for every 10 minutes a car is idling, 10 lbs of CO_2 is emitted. I used this information to calculate how many pounds of CO_2 was emitted in the pilot study versus the operational phase. During the pilot study, I calculated 55.6 lbs of CO_2, and in the operational study I calculated 30.6 lbs of CO_2. This suggests that the no-idling signs were able to prevent 20.5 lbs of CO_2 from being emitted during the operational observation weekend. This campaign brought environmental awareness regarding CO_2 emissions to our everyday citizens, and it was able to make a postive impact on the community.

Submitted by:

I hereby acknowledge that the information included in this application is correct to the best of my knowledge.

Signature: **Celine Eide** Date: **3/31/2021**

For Office Use Only:

Application Received On:

Village of
Northbrook

1225 Cedar Lane Northbrook, Illinois 60062 847.272.5050 www.northbrook.il.us

Green Resident Award Application

The Village of Northbrook's Green Resident Award program seeks to promote environmentally-friendly practices in Northbrook by recognizing individuals that have taken steps with meaningful results to make a positive impact on the environment.

Who is Eligible?

Residents located within the corporate limits of the Village of Northbrook.

How to Apply

Residents interested in applying for the Green Steward Award should complete this application and submit it to the Village of Northbrook at tessa.murray@northbrook.il.us by March 31, 2021. Only email submissions will be accepted. Residents should describe their practices and sustainable efforts with as much detail including how long they have been in place, the outcomes of these. Pictures may be attached to this application to help demonstrate the efforts taken to minimize a negative impact on the environment.

Review of Application and Awards

Applications will be reviewed by members of the Village's Environmental Quality Commission. They will choose 1 winner for the Green Resident Award. Awards will be announced at a summer 2021 Village Board meeting.

Resident/Family Name: Marilyn Fish Contact Person: Nominated by Catherine Caporusso

Address: 2051 Walters Email: marilyn@gogreennorthbrook.org

Description of sustainable practices and efforts implemented (use additional sheets if needed):

I want to nominate long time Northbrook resident Marilyn Fish, 2051 Walters, for the green resident award. Marilyn serves on the board of Go Green Northbrook and as treasurer of the organization. She is an active member of the group's government relations and Environmental Community Outreach (ECO) committees. In the past several years, her projects have included encouraging restaurants to reduce their use of non-biodegradable straws, working with Village, the park district, businesses, and residents to increase Northbrook's tree canopy, working with the Village to increase Terracycling, as well as collecting the waste, and giving the educational "Green Moment" at every Village board meeting. She also writes many articles for the newsletter and updates the Go Green Northbrook website.

At her home, she composts, Terracycles, and has installed both solar panels and a rain garden. She is an avid photographer, triathlete, and hiker and leads Sierra Club Woods and Wetlands outings Her most recent initiative, Monarchs, Milkweeds, and More, will educate people on the plight of the monarch butterfly and its dependence on milkweed and the need to create butterfly and rain gardens using native plants, encourage people to plant milkweed and other native pollinator plants at their homes, provide people with a list of resources that they can use to create their gardens, and work with the Village of Northbrook and other environmental groups to increase native habitats for wildlife.

Outcomes of these efforts and practices

Her efforts have helped all of Northbrook learn about, appreciate, and minimize the negative impact on the environment. She has reduced Northbrook's carbon footprint both individually and at a community level through these initiatives. Thank you for your consideration.

Submitted by: Catherine Caporusso

I hereby acknowledge that the information included in this application is correct to the best of my knowledge.

Signature: Catherine Caporusso Date: 02/23/2021

For Office Use Only:

Application Received On: 02/23/2021

Green Resident Award Application

Resident/Family Name: Gerleman; Contact Person: Doug

Address: 2966 Stonegate Lane Phone: 847-498-1155

Email: GerlemanD@comcast.net

Description of sustainable practices and efforts implemented:

One of the most important things home owners can do to reduce the impact of climate change is to replace their turf grass lawns with deep rooted native plants. This does two things. (1) It reduces the need to frequently cut grass with carbon emitting power machines that increase global warming, and (2) it allows landscape plants and soil to more effectively absorb and sequester carbon dioxide underground.

Landscape plants, like trees, absorb atmospheric carbon as they grow, storing it in the leaves, branches, trunk and soil. As plants drop their leaves and break up/die they disintegrate into carbon and other minerals used by other plant and animal organisms to grow. The home owner can use the dead leaves and broken branches as mulch and natural fertilizer with no artificial lawn chemicals, herbicides or pesticides that can poison surrounding life.

This overall process of moving atmospheric carbon into plants and soil is called sequestration. Prairie soil is rich from years of plant - carbon decay and sequestering moving deep in the soil. This process has kept the earth‘s climate stable enough to support much plant and animal life, including humans. We can do this in our yards.

For the description of the Green Resident attachments see the cover letter.

Out comes of these efforts and practices:

The characteristics of the various plants, particularly their sun and water tolerance, is critical to determine where to plant them. I got help from the Village Forester, Terry Cichocki, and a landscaper who found the appropriate plants and helped with the work.

We replaced almost all my turf grass and invasive plants with native plants and the birds they attract. All my neighbors tell me that they love the plant colors and bird activity. They also enjoy the quiet of no lawn maintenance equipment.

We also put bird feeders around the back yard with a bird bath. We now have a continual bird activity in the feeders and the bath. It is always alive with colorful and busy animal activity. Very attractive.

See the 15 minute video of my yard, “Native Landscaping.mp4”.
https://drive.google.com/file/d/1fWutrhoOddBavLYTOOzOHyTBUPAa5_4t/view?ts=5f17a7a8

Submitted by: Doug Gerleman

Signature: Doug Gerleman_____ Date: March 27, 2021

Doug Gerleman's
front lawn

Landscaping: 2966 Stonegate Lane, Northbrook, IL

With increasing rainfall in this era of climate change many homeowners are now experiencing increased flooding. The Northbrook Stormwater Commission acknowledges that increasing stormwater absorption in our landscape plants and soils is a key component in reducing this flooding, but their expertise and approach has been to enlarge Northbrook sewers to push higher volumes of stormwater downstream. This engineering approach cost Northbrook residents $20 million from FY 2012 – 2019 for enlarged sewers and continues into the future.

So, my wife and I redesigned our front yard to be a model of how a suburban landscape can hold stormwater. We started by replacing the parkway turf grass with salt-resistant sedem. Then we replaced the entire front yard turf grass with native plants that opened the soil with deep roots. These plants interacted with other plant-animal-insect and soil micro ecosystems to support landscape that reduced maintenance with no stormwater runoff.

The back yard has many separate gardens that absorb stormwater from house roof gutters and sump pump. We planted a large variety of native plants, vegetables and fruit (raspberries, grapes blueberries, rhubarb) for food and an abundant variety of birds.

These gardens/landscapes feel alive with changing landscapes, birds and other animals. We feel a part of this flow of nature.

Front Yard Plants:

Parkway: Sedem Kamtschaticum (trees: Red Norway Maple, Ginko, Chinkapin Oak)
Front yard center: Blue Wonder Nepata (catmint); Heuchara (Coral Bell) (tree: Norway Maple)
East & West Sides: Iris Versicolor; Echinacea (coneflowers)
Front yard center back: Daisies; Wild Geraniums; roses
Bushes: Spirea Tor (short: white spring flower, red autumn leaves) ; Viburnum BM (6’ white spring flower, orange autumn leaves); Yew evergreen hedge

Back yard Plants:

East Side: vegetable/raspberry garden, Joe Pye Weed, Norway Spruce tree

West side: has wetter soil with ferns, Serviceberry tree, Hydrangea, fragrant Autumn Haze Clematis, 6’ Cup Sunflowers, 18’ Sawtooth Sunflowers

North side: viburnum, Swamp White Oak, arborvitae trees, Norway Spruce

Patio centered garden: Hosta @ house; Iris & Day Lilly garden; yellow Primrose, Chinese Astilbe (False Goat Beard), yellow flowered Potentilla bush, Stonecrop sedem, Spiderwart, Blazing stars, Old Henry, Virginia Sweetspire, Pacific Aster. Hydrangea on east end under window.
(Thistle Bird Feeders & Bath)

North Center: Prairie Smoke, Cleome, White Daisies, red Monarda - Bee Balm, Queen of the Prairie, lilies. **(Bird Feeders: Mixed seed, Mixed Nut)**

GARDENS TO COMBAT CLIMATE CHANGE

WHAT WE CAN DO IN OUR SUBURBAN GARDENS

DOUG GERLEMAN

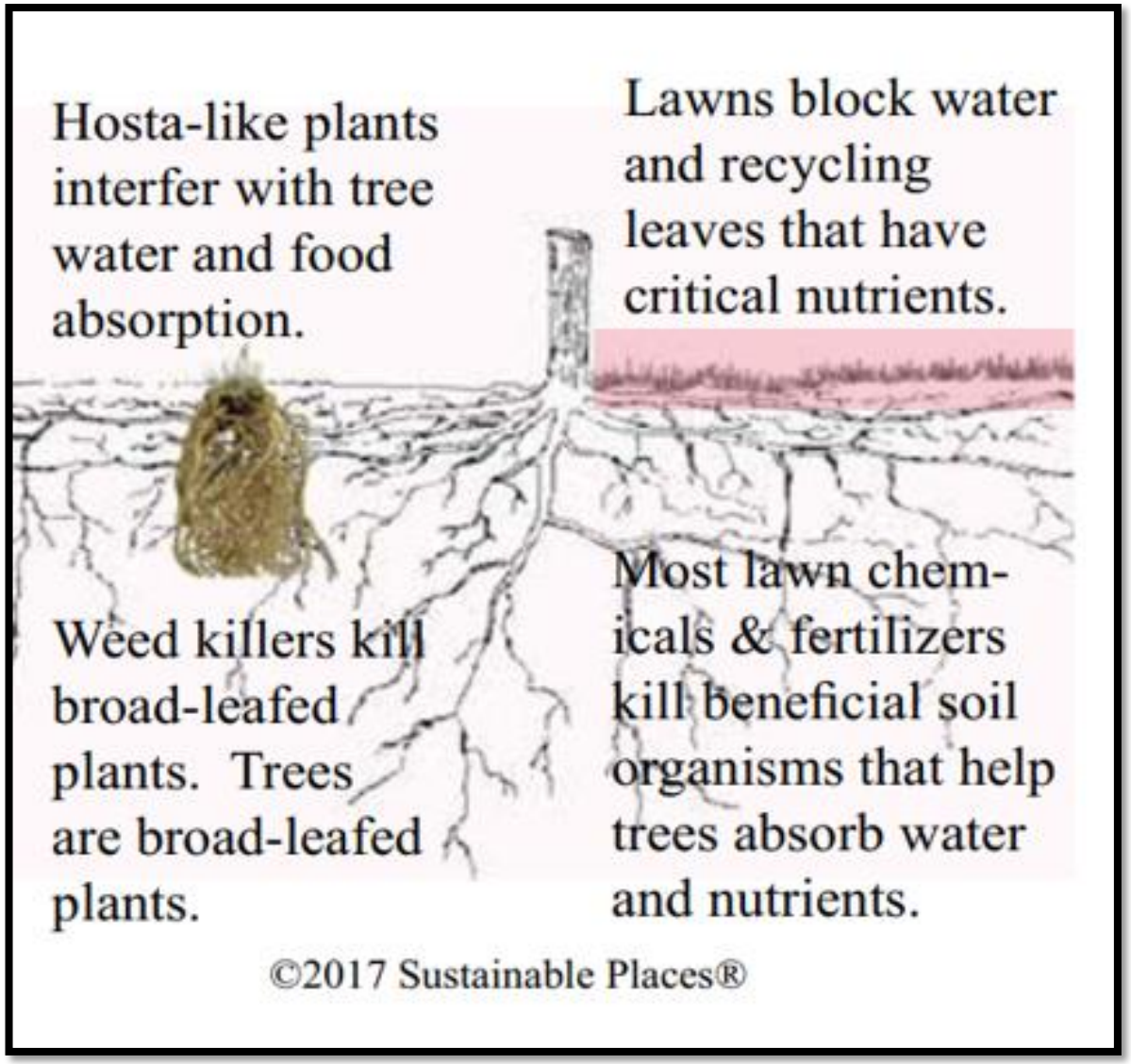
Background

1. Village trying to expand stormwater & CO2 absorption with trees

2. Some interest in expanding rain gardens sloped to sewer

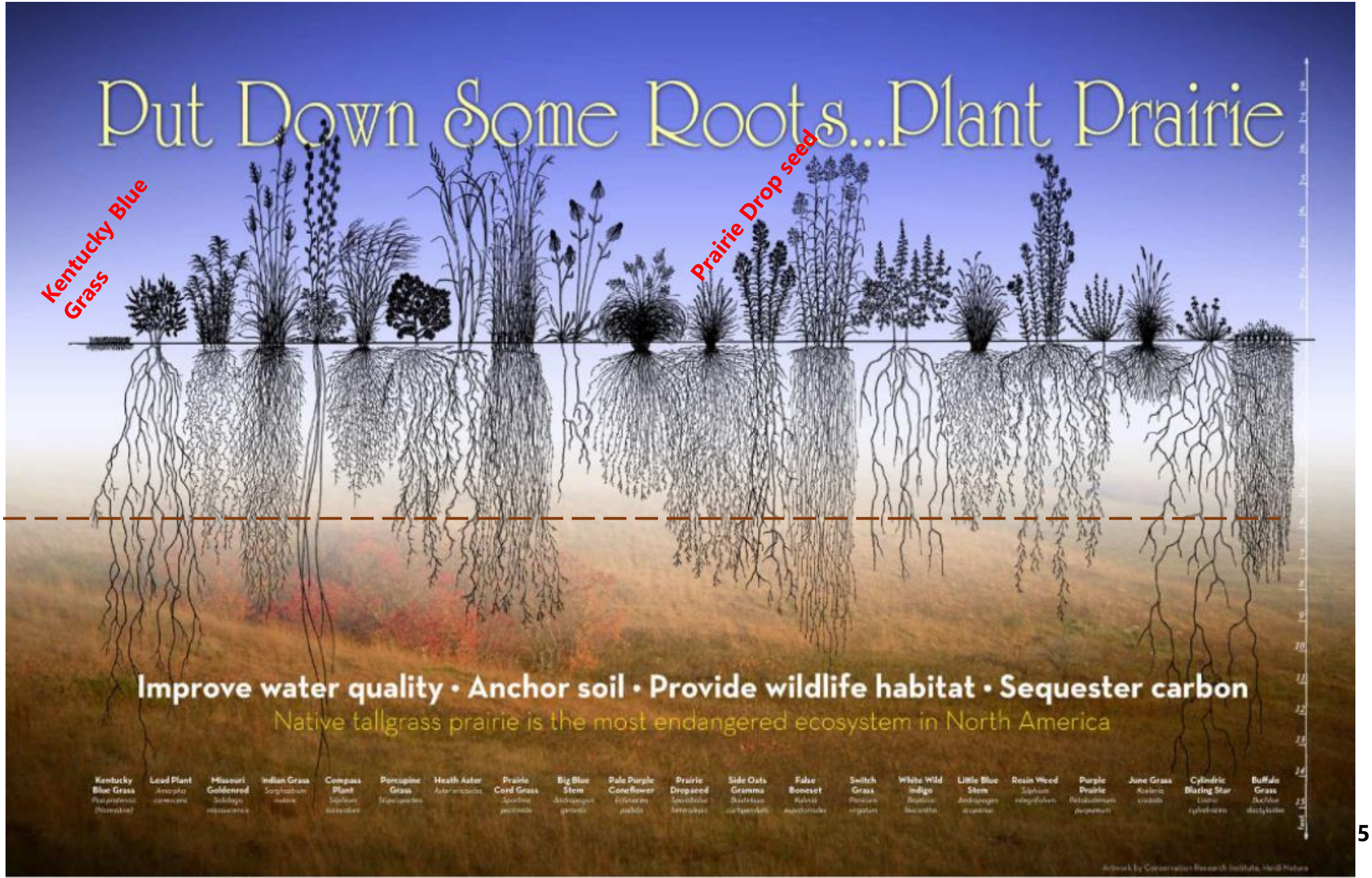
3. Document Trees dying and significant changes in climate

Trees – Impact of Underplanting with Hosta or Lawn



Dense Hosta Roots v Open Clover Root system

- **Dense hosta roots steal water & nutrients from nearby trees & other plants.**
- **Clover has an open root system.**



https://www.nrcs.usda.gov/wps/portal/nrcs/il/plantsanimals/NRCS141P2_030726/

What can we do in our suburban gardens? Lots!

1. Discuss changes in the health of our trees - see attached "Tree Checklist" and " Tree Benefits/Health Brochure"

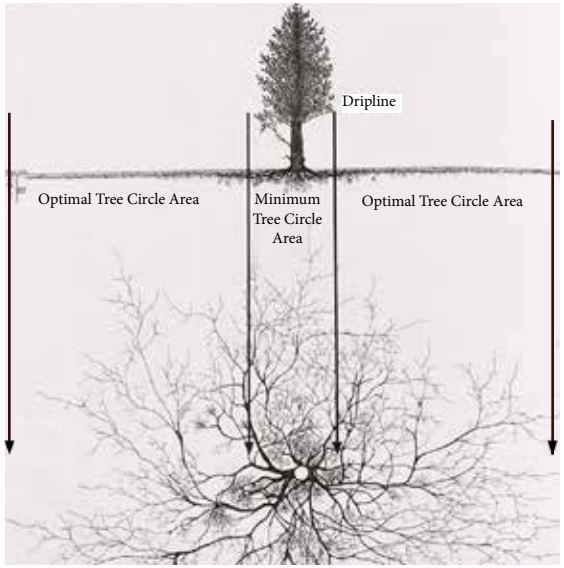
2. Plant more deep-rooted plants to determine impact

3. Look for gardens and landscapes that absorb stormwater and carbon. Share with the Northbrook Garden Club, Village and the public to build interest in expanding this program.

4. Track changes in birds and pollinators

Trees!

The Extent of Tree Roots



- Significant tree roots run right below the surface through neighbors' yards, up to 1 block from the tree. This upper soil layer is the primary source for water and nutrients.
- "Tree circles" are round areas beneath the tree dripline that help to protect the tree roots and trunk from weed wackers, lawn mowers, broad-leaf weed killers, and chemical fertilizers that kill beneficial fungus and insects that support the tree.
- It is best for "tree circle" areas to have a natural, undyed mulch with woodland-type groundcover plants that do not compete with the tree. (Dyed mulches contain chemicals that kill beneficial soil organisms.).

Trees!

NEED

- Natural, undyed mulch and/or woodland-type groundcover plants within tree circles.
- Slow release, natural fertilizers that support the tree nutrient uptake system.
- Water when there is hot weather and/or a shortage of rainfall.
- No chemicals to kill weeds, fungus, insects. (http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0185809)
- No mulch or soil on trunk above tree base. (No "volcano" mulching.)
- Hand weeding.

Trees!

Benefits

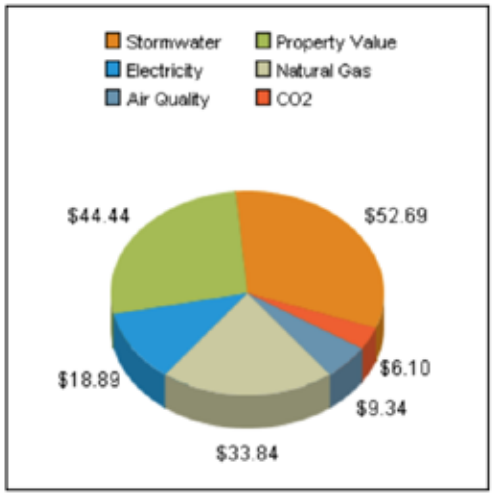
- Absorb large amounts of CO^2
- Alleviate flooding by absorbing stormwater
- Protect homes from extreme sun and wind
- Save heating and cooling costs
- Increase property values
- Increase air and water quality by filtering
- Increase oxygen

For more information contact:
doug@gogreennorthbrook.org

GO GREEN NORTHBROOK

Trees!

Savings



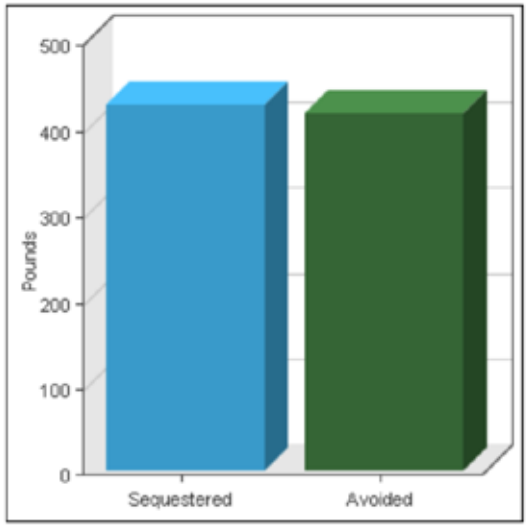
(Source: www.treebenefits.com)

An 18" Swamp White Oak can SAVE:

- $52 for combined natural gas and electricity
- 10-15% saved for heating and 20-50% for cooling. (Source: Canopy)
- $52 for stormwater
- Absorbs 2,000 gallons of stormwater
- Increase neighborhood beauty (Priceless)
- Raise property value by $44 this year
- Homes on tree-lined streets may be worth 25% more. (Source: Canopy)
- Streets with trees may be 6-8 degrees cooler in summer than comparable streets without trees. (Source: Canopy)

Trees!

Benefits - CO^2



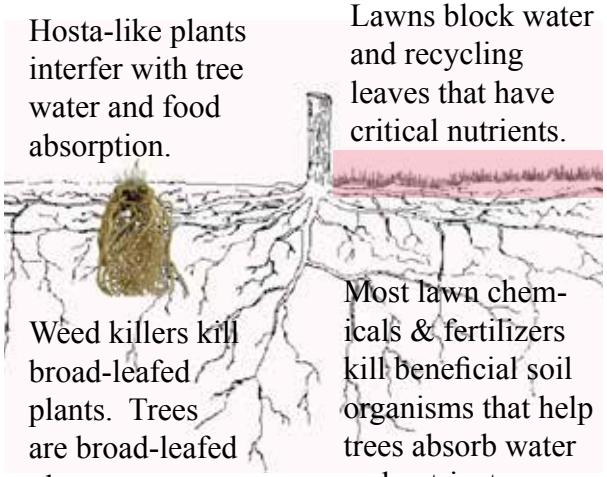
(Source: www.treebenefits.com)

An 18" Swamp White Oak can LOCK UP 844 Pounds of Carbon ...from the air

- Locks up carbon in tree trunk, branches, leaves, roots, and tree-soil microorganisms.
- Reduces fossil fuel + CO^2 emissions used for heating and cooling.
- Reduces fossil fuel + CO^2 emissions used for mowing.

Trees!

Problems



- Old tree leaves have vital nutrients for trees and healthy soil organisms and act as mulch.
- Many lawn fertilizers have too much nitrogen for trees.
- Weed killers damage/kill trees.
- Lawn fungus & insect chemicals kill beneficial soil organisms.
- Hosta and plants with dense roots interfer with trees ability to absorb adequate water & food.
- Digging in tree root zones to plant annuals destroys tree roots.
- Trees need more water than lawns.

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Green Resident Award Application

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Review of Application and Awards
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Resident/Family Name: KAMINSKY Contact Person: Jeff

Address: 860 HAWTHORNE LN. Phone: 708-269-9384

Email: Jeffrey Kaminsky@gmail.com

Description of sustainable practices and efforts implemented (use additional sheets if needed): BUILT RAISED GARDENS, COMPOSTING + RECYCLING

SEE ATTACHED

Outcomes of these efforts and practices SEE ATTACHED

Submitted by:

I hereby acknowledge that the information included in this application is correct to the best of my knowledge.

Signature: [signature] Date: 3/30/21

For Office Use Only:

Application Received On:

Green Resident Award Application: Kaminsky Family – 860 Hawthorne Lane, Northbrook

DESCRIPTION OF SUSTAINABLE PRACTICES AND EFFORTS IMPLEMENTED:

BUILT RAISED GARDENS: We built 2 large, raised gardens that were each 10' Long x 4' Wide x 2' High, out of cedar so that they would last for many years to come. This was a great family project where all of us could work together. We then planted what is called a "Square Foot Garden" where each Square Foot of space is divided into individual squares to plant in.

The basic concept: Create a small garden bed (4 feet by 10 feet) and divide it into a grid of 1-foot squares, which you manage individually. Seeds or seedlings of each kind of vegetable are planted in one or more squares, at a density based on plant size (we planted about 16 radish seeds per square, but only one tomato plant). Since there are no paths, there is no wasted space, and the soil in the bed stays loose because we never step on it, and can reach every square from either the front, the sides, or the back.

We also used unused planting beds in a corner of our yard to plant pumpkins and spaghetti squash from seeds.

COMPOSTING: We Installed an Outdoor 37 Gallon Chamber Quick Curing Rolling Compost Tumbler. We then took all our vegetable and fruit rinds, peels, pits, grape vines, eggshells, and even coffee grinds and diverted them from our garbage to our compost bin.

RECYLCING: We sort and recycle anything that is not garbage. We have both recycling bins inside our home and outside. Often our recycling container has much more inside of it than our garbage can.

OUTCOMES OF THESE EFFORTS AND PRACTICES:

GARDENING OUTCOME:

The Square Foot Gardening method saves gardeners time, effort, tools, space and water. Schools across the nation and international humanitarian groups around the world are using the Square Foot Gardening method making inroads against poverty and hunger. The Square Foot Gardening method is estimated to **cost 50% less, uses 30-40% less space, 10% of the water, and only 2% of the work** compared to single row gardening. Additional benefits include: few weeds, no digging or rototilling, and no heavy equipment is necessary.

The Square Foot Garden provides **High Yield** in a small space, requires **Minimal Regular Maintenance:** Since the garden is small and you have only a few specific tasks to do on any given day, you only need to invest a few minutes planting, maintaining, and harvesting at any one a time, although more time is required as crops grow (pruning) and need to be harvested. and **Less Weeding** since most of the space is used for the planted fruits and vegetables.

Our "small garden" yielded well over 1,000 pounds of fruits and vegetables including radishes, carrots, tomatoes, zucchini, squash, green beans, lettuce, strawberries, peppers, onions, potatoes, basil, oregano and more.

The Raised Garden is also "back friendly" since it is 24" off the ground.

COMPOSTING OUTCOME:

We used sunlight and the heat from the sun to create rich compost fertilizer for our new garden in about 2-4 weeks. Our garbage is now usually only 1 bag per week for a family of 5. It's absolutely amazing how much food waste we've diverted from garbage to compost and now use as fertilizer around the yard.

RECYCLING OUTCOME:

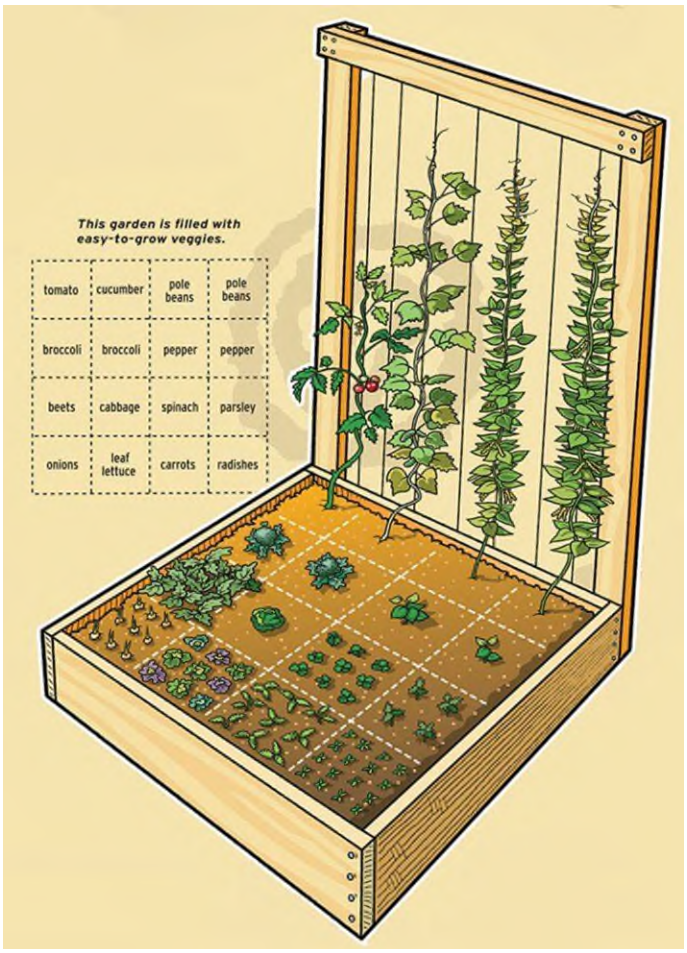
Often our recycling container has much more inside of it than our garbage can. It's always better for the sustainability of our environment to be able to recycle as much as we can so that it can be re-used and re-made into something else rather than ending up in a landfill.

OVERALL OUTCOME:

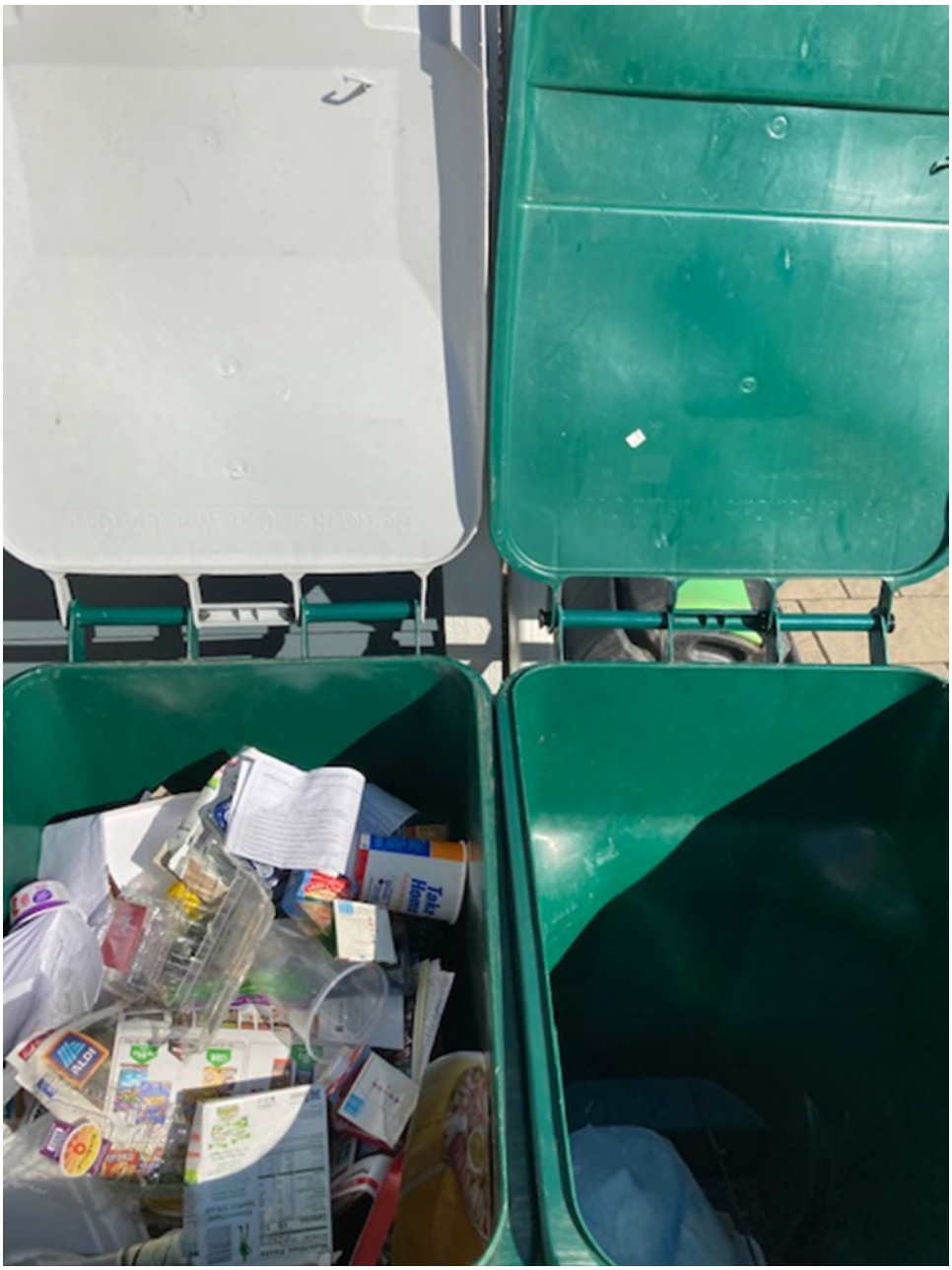
Overall outcome was to work as a family to create a garden that we could all enjoy. The kids learned how to build the Cedar Garden Boxes and how to work with tools. Everyone learned the value of hard work and planning in order to build a garden and enjoy the benefits of their efforts thru the harvested fruits and vegetables. We were all surprised by how much compost we could make from our weekly food scraps. The kids also learned the important lessons of growing food and sustainability of the environment.

See Photos Attached.

KAMINSKY GREEN RESIDENT AWARD PHOTOS


This garden is filled with easy-to-grow veggies.
tomato
cucumber
pole beans
pole beans
broccoli
broccoli
pepper
pepper
beets
cabbage
spinach
parsley
onions
leaf lettuce
carrots
radishes


cucumbers
peas
yellow peppers
basil
chives
cilantro
oregano
parsley
rosemary
dill
leek
zucchini
yellow squash
eggplant
radish
pumpkin
lettuce
cabbage
carrots
potato
beets
onions
strawberries
sweet potato
fennel
brussel sprouts



Village of Northbrook

1225 Cedar Lane Northbrook, Illinois 60062 847.272.5050 www.northbrook.il.us

Green Business Award Application

The Village of Northbrook's Green Business Award program seeks to promote environmentally-friendly business practices in Northbrook by recognizing organizations that have taken steps with meaningful results to make a positive impact on the environment.

Who is Eligible?

Businesses located within the corporate limits of the Village of Northbrook and be current with all licenses and inspections.

How to Apply

Businesses interested in applying for the Green Business Award should complete this application and submit it to the Village of Northbrook at tessa.murray@northbrook.il.us by March 31, 2021. Only e-mail submissions will be accepted. Businesses should describe their practices and sustainable efforts with as much detail including how long they have been in place, the outcomes of these. Pictures may be attached to this application to help demonstrate a business' efforts to minimize their environmental impact.

Review of Application and Awards

Applications will be reviewed by members of the Village's Environmental Quality Commission. They will choose 1 winner for the Green Business Award. Awards will be announced at the April 2021 Village Board meeting.

Company Name: Northbrook Park District Contact Person: Joan Scovic

Address: 545 Academy Drive Phone: 847-897-6129

Email: jscovic@nbparks.org # of Employees: 200

Description of sustainable practices and efforts implemented (use additional sheets if needed):

Please see attached.

Outcomes of these efforts and practices

Please see attached.

Submitted by:

I hereby acknowledge that the information included in this application is correct to the best of my knowledge.

Signature of business representative: _____ Date: 3-31-21

For Office Use Only

Application Received On

Village of Northbrook Green Business Award Application
Northbrook Park District

Description of sustainable practices and efforts implemented.

The Mission of the Northbrook Park District is to enhance our community by providing outstanding services, parks and facilities through environmental, social and financial stewardship. A variety of sustainable measures are taken, both on a daily basis and with larger capital projects, throughout the District's parks and facilities.

The District is excited to offer a Net Zero Energy building to the community, and we are only the second park district in Illinois to do so. Techny Prairie Activity Center, a 44,200 square foot highly efficient facility, offers a fitness floor, group exercise, an indoor track, and a gymnasium to the community and has 833 photovoltaic (solar) panels on the roof which will produce more energy than the building needs to operate. The following design components were utilized to reduce greenhouse gases, energy consumption and the building's overall carbon footprint:

- HVAC and mechanical systems with the highest efficiency ratings
- Airtight construction and increased polyisocyanurate insulation
- High-performance windows with low-emissivity coating and triple-pane, argon gas-filled insulated glass
- Strategically placed windows on the north and south walls to maximize ambient light
- LED lighting with occupancy and light level sensors in the building and parking lot

The entire TPAC property was designed with sustainability in mind. A 200-foot bioswale in the parking lot incorporates native plants to collect, manage, and filter stormwater prior to sending it to the nearby Prairie Basin and a branch of the Chicago River. The landscape plan includes naturalized areas that are pollinator friendly and provide a home to native plants and 68 newly planted trees. No mow areas have been employed to reduce the use of gas-powered machinery and chemical maintenance and special care was taken to preserve the root systems of two of the property's oldest American Linden trees with the use of specialized Cornell University structural soil.

In the lobby, several large informational signs help explain how we built a Net Zero Energy building. From an actual solar panel included in the sign frame to a monitor relaying live mechanical data, the information explains the energy production and efficiencies to decrease consumption throughout the facility.

Construction at Heritage Oaks Golf Club began in 2020. Sustainability aspects of the project include:

- Concrete poured on site using technology to introduce recycled CO2 into the fresh concrete to reduce carbon footprint, sequestering carbon
- Natural wood-based siding certified according to PEFC Forest Certification
- Lawn furniture made of 100% recycled milk jugs
- Carpet made from 57% pre-consumer recycled content, 100% recyclable at end of life, CRI Green Label Plus certified, and Living Building Challenge Red List free – which means it is free of harmful chemicals
- Greenguard Gold standard laminated countertops and surfaces

- Local and regional material and product selections support the community and contribute to a lowered carbon footprint for building furnishings and construction

In the area of waste reduction, recycling and composting, the District has implemented the following practices:

- Recycling is conducted at every facility – in public areas and at every workstation
- Recycling containers are located in every park along with additional containers provided at our special events and at sports fields
- Wood chips generated from tree removal are reused for tree and shrub bed mulch
- Paper towel use is reduced through the use of air dryers in restrooms
- Recycled materials include:
    - Plastics
    - Paper/cardboard
    - Light fixture ballasts and batteries
    - Fluorescent light bulbs (bulb eater machine)
    - Vehicle battery cores
    - Motor oil

Water conservation is achieved through the installation of timed water faucets to reduce waste. In addition, rain-gauge irrigation controls are retrofitted to shut off sprinkler systems when it is raining. Rain gardens have been installed in several park areas and bioswales have been added in the new parking lots at Techny Prairie Activity Center (TPAC) and Heritage Oaks Golf Club (HOGC). In addition, expanded pond areas and permeable pavers at HOGC assist with stormwater management, including retention and reuse, on the property. Renovations at Northbrook Sports Center Pool have resulted in the conservation of 1,966,000 gallons of water since the project's completion in 2017.

To improve air quality and decrease emissions, the District is purchasing battery-operated grounds equipment such as blowers and string trimmers to reduce the emissions from gas-powered equipment. Increasing no mow areas has decreased the need for gas-powered mower use in several parks and open space areas. The District employs a no idling procedure for the use of Park District vehicles that is enforced with the use of vehicle GPS software and the monitoring of idling times. In addition, no idling signs are installed at the drop off and pick up lanes at various facilities.

Energy conservation is a large focus for the District. Parking lot lights are retrofitted with LED lighting and vending operators are required to use LED lighting in their machines as well. Facilities are equipped with Building Automation Systems (BAS) to control the HVAC run times while the buildings are unoccupied. When equipment is replaced, Energy Star Appliances are specified in the purchasing specifications whenever possible.

Prescribed burns are conducted annually in various open space areas throughout the District to help support healthy growth of the native landscape while preserving biological diversity. These burns help remove invasive plant species and give space to native plant growth, while also breaking down old decaying plant matter to add nutrients to the soil. An additional benefit is helping support pollinator species which depend on native plants for food and shelter.

In the District's open spaces, walking and biking are encouraged on the District's trail system that ties into the Techny Road Bicycle and Pedestrian Corridor which will facilitate cross-town access without vehicle use. Monarch butterfly gardens and milkweed planting locations have been installed in several parks while Heritage Oaks Golf Club has been certified for its achievements in environmental sustainability by Audubon International.

Finally, along the West Fork of the North Branch of the Chicago River, visitors can walk the 14-acre Trail Through Time, discovering how early settlers developed a relationship with the land. To create this naturalized area, the Park District restored an old farm field and created an ecosystem with a restored prairie and two wetlands that are home to mammals, birds and insects. As the site matures, the variety of species continues to increase.

Outcomes of these efforts and practices

Overall, the District's efforts address the five main topics of the Northbrook Sustainability Plan: Energy, Material Management, Natural Resources, Community Development and Transportation.

One of the largest by-products of these practices is the cumulative effect that they have. Staff commitment to sustainability and environmental best practices has grown, especially in recent years through a variety of capital improvement projects. Projects are designed with an eye to sustainability, from the reuse and regrinding of asphalt at the Heritage Oaks Golf Club parking lot to the installation of higher insulation values and highly efficient mechanical systems at Techny Prairie Activity Center.

The Northbrook tree canopy has grown significantly over the past year due to the District's ongoing planting efforts. The District continues to preserve existing trees and plant new ones as the opportunity arises. Working with Go Green Northbrook and the Morton Arboretum, the District planted 22 new trees at Salceda Park and the six-acre Techny Prairie Activity Center property is home to 68 new trees. At Heritage Oaks Golf Club, an additional 356 trees are being planted as part of the course renovations and new clubhouse construction project. The District is also highly conscious of species variety when making planting selections, to help avoid excessive tree loss due to a specific disease or insect such as the Emerald Ash Borer.

The efforts at Techny Prairie Activity Center from an energy standpoint will be long lasting. The 833 photovoltaic panels on the roof, in conjunction with strategic construction and highly efficient mechanicals, will produce the energy the building needs to operate. The predicted energy model for this sustainable facility shows an annual predicted energy usage of 322.6KWh and predicted energy generation of 357.8 MWh. The facility is slated to receive two third-party certifications: PHIUS+ and Source Zero, both from the Passive House Institute US. Techny Prairie Activity Center also received a $24,812.21 grant from the ComEd Energy Efficiency Program for the construction of TPAC. The grant was awarded in recognition of the fact that the building is 50% more efficient than ComEd's baseline requirements. In addition, remediation efforts that took place prior the start of construction were completed in cooperation with the Illinois Environmental Protection Agency to ensure the safety of the six-acre parcel.

From small neighborhood tot lots to large community parks like Wood Oaks Green Park and Techny Prairie Park and Fields, the District is responsible for over 500 acres of open space throughout Northbrook. Preserving this land and its assets is at the heart of what we do as a Park District and we

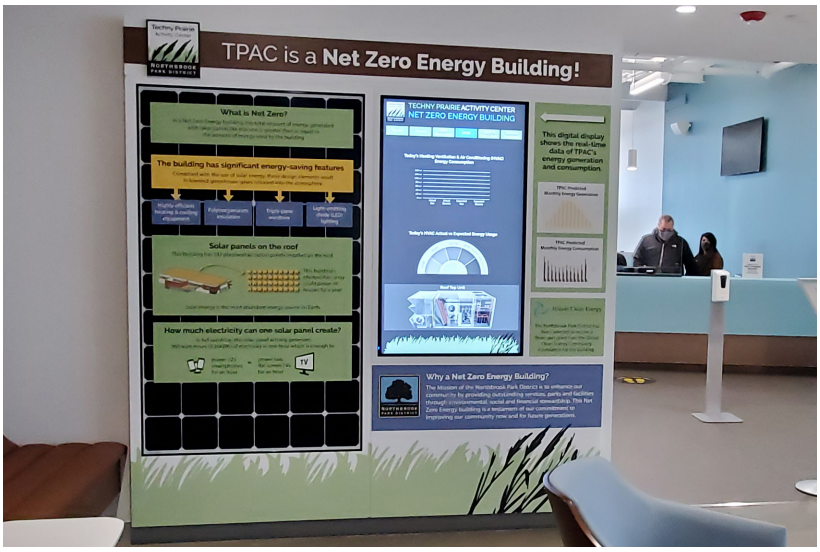
take this job seriously. Through careful planning and a variety of creative sustainability solutions, the District will continue to serve as the responsible steward of these assets from an environmental, social and financial standpoint.

Northbrook Park District | Green Business Award

Supplemental Photographs

The roof at Techny Prairie Activity center is home to 833 photovoltaic (solar) panels.

Naturalized areas and a 200 foot long bioswale surround the building at TPAC.



Large educational panels in the TPAC lobby help explain how the Net Zero Energy building was built.

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Supplemental Photographs

A total of 356 new trees are being planted as part of the Heritage Oaks Golf Club course renovation and clubhouse construction project.

Ponds at Heritage Oaks Golf Club have been expanded to assist with stormwater management and the course is Audubon certified.

The Trail Through Time in Techny Prairie Park & Fields is an ecosystem with a restored prairie and two wetlands that are home to mammals, birds and insects

Northbrook Park District | Green Business Award

Supplemental Photographs

Working with Go Green Northbrook and the Morton Arboretum, 22 new trees were planted in Salceda Park in September 2020.

Pollinators are supported through Monarch gardens and Milkweed plantings.

Native plants are protected through prescribed burns.