

NORTHBROOK

STRATEGIC SUSTAINABILITY PLAN

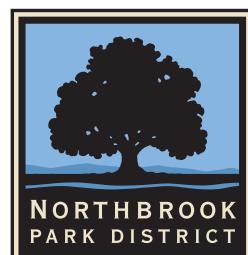
Energy

Material
Management

Natural
Resources

Community
Development

Transportation



NORTHBROOK

STRATEGIC SUSTAINABILITY PLAN

Northbrook residents have demonstrated their commitment to environmental and social responsibility in the ways they live, work and play. In 2011, the Village of Northbrook and the Northbrook Park District joined forces to create this plan to ensure that they uphold the sustainable values of the community. The plan takes a detailed look at five distinct areas that provide opportunity for improving sustainability:

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Energy: including consumption and production

Material Management: including the complete lifecycle of materials from manufacturing to purchasing to disposal

Natural Resources: with a focus on stormwater management and preservation of the Urban Forest

Community Development: including sustainable land use, urban design and green building

Transportation: exploring opportunities for improving alternative options, including transit, biking and walking

The plan explores the importance of addressing each issue and reflects on the sustainable initiatives already underway in Northbrook. Then, this plan suggests specific goals to address opportunities in each category, as well as strategies for attaining these goals and measures that will be used to determine success. Both the Village and the Park District will use this document to guide their work within the community and the operations of their respective organizations.

NORTHBROOK: AN OVERVIEW

The Northbrook Strategic Sustainability Plan was created to provide a roadmap for the community to advance its current environmental programs and identify new initiatives with the greatest opportunity to enhance resource conservation, improve public health and strengthen the local economy. All aspects of the plan are driven by a single guiding principle: sustainability. In Northbrook, letting sustainability guide the decision-making processes means seeking to balance today's needs with those of tomorrow by considering environmental, economic and social impacts. This plan is intended to be a living document that will be revisited regularly by the Park District and Village of Northbrook to measure progress and reevaluate goals and strategies.

COMMUNITY PROFILE

Northbrook, a dynamic community in northern Cook County, attracts families and businesses with its excellent park amenities, schools and transportation infrastructure. The 33,170 residents enjoy such amenities as the walkable downtown, Village Green Park and River Walk, a farmers market, summer outdoor concert series, and the nationally-renowned Ed Rudolph Velodrome, where top cyclists compete for major titles.

More than 50,000 people work in Northbrook, which is home to the corporate headquarters of Underwriters Laboratories, Crate & Barrel and more than 700 manufacturing, light industrial and service-related businesses. Northbrook also is home to a strong retail community anchored by Northbrook Court. In total, Northbrook has millions of square feet of diverse shops, boutiques and restaurants - truly something for everyone.

Figure 1. Northbrook's Techny Prairie Park



Both the Village of Northbrook and the Northbrook Park District have been recognized for their environmental leadership. Over the past several years, both agencies have aggressively pursued energy efficiency and conservation programs, actively recycled waste products to safeguard the natural and built environment, and subsequently received sustainability-related acknowledgments. After 20 years of working separately on environmental initiatives, the Village and the Park District issued a joint Request for Proposals in February 2012 to develop a Sustainable Community Strategic Plan to guide sustainability enhancements for the next 20 years.

PARTNERSHIP

This is the first community sustainability plan in the Chicago area to be funded and driven by a partnership of a municipality and its park district. Partnering on the plan not only reduced each organization's cost, but it also maximized their opportunities to leverage resources.

Figure 2. The Partners' logos: Village of Northbrook (left) and Northbrook Park District (right)



Partnership and collaboration are not new to either the Village or the Park District (referred to as "the Partners"). They have collaborated on several initiatives, including:

- The Annual Earth and Arbor Day event
- Tree maintenance and pruning
- Light bulb recycling
- Electronics recycling

The Partners also have experience working with neighboring communities and will continue to seek opportunities to coordinate with other community partners.

Currently, the Village:

- shares a health inspector with Wilmette
- partners with Northfield Township for certain recycling programs
- uses collaborative purchasing to leverage greater savings for residents

And, the Park District:

- teamed up with School District 28 in 2011 to fund construction of a new gymnasium at Greenbriar School. As part of the agreement, the Park District is allowed to use the gym after school and during the summer for indoor sports programming.
- partners with the United Methodist Church for the use of its soccer fields in exchange for regular lawn mowing
- has facility and grounds use agreements with School Districts 27, 28, 30, 31 & 225

There is also a strong system of environmental leadership among the Partners. Each has an

established Green Team or environmental committee, comprised of staff members from multiple departments. Each group works to achieve specific goals and publishes its accomplishments regularly.

COMMUNITY ENGAGEMENT

The community engagement process was used to identify which sustainability elements are most important to residents, educate staff and the community on the allocation of public resources, and identify opportunities for sustainability within municipal systems.

To ensure the success of the plan, it is important to understand what sustainability means to the residents of Northbrook and why it matters. Residents were asked to participate in an online survey that asked them to prioritize sustainability initiatives related to key topic areas, including:

- Energy
- Materials Management
- Natural Resource Management
- Community Development
- Transportation

The survey results guided the direction of two community engagement meetings that were held in October 2012. At the first meeting, community members provided input on current conditions in Northbrook, which was used to develop measurable goals. The second public meeting then focused on developing strategies to achieve those goals. The outcomes of this process resulted in the following Strategic Sustainability Plan.

Figure 3. A Community Meeting held by the Village of Northbrook.

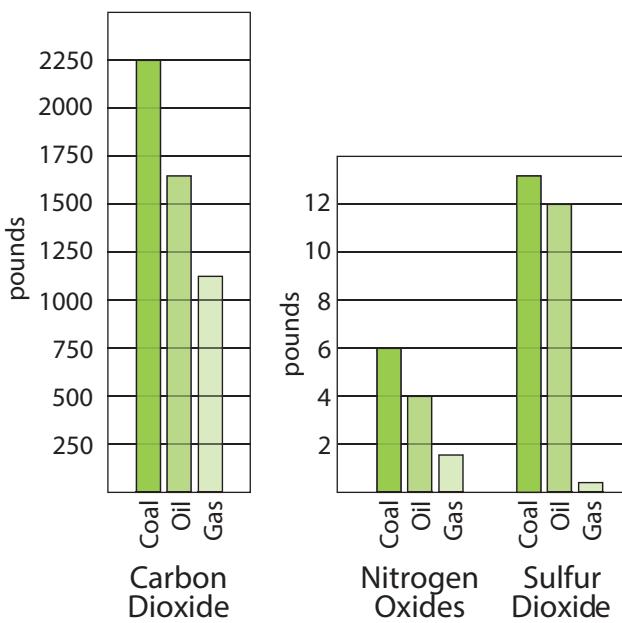


ENERGY

Most of the energy in the Chicago area comes from nonrenewable sources, namely fossil fuels. Although all energy sources have some environmental impact, the use of fossil fuels results in a particularly large amount of global warming compounds, as seen below in Figure 4.

Reducing the use of fossil fuel-based energy supports environmental stewardship by reducing negative environmental impacts and improving environmental quality. The Partners have sought to maximize energy conservation through investment in renewable energy sources and for facility improvements.

Figure 4. Pounds of pollutant by energy source



CURRENT ENERGY INITIATIVES

Although 2011 was the first year that Northbrook had an energy audit, the Village most likely has achieved significant energy savings already, due to energy efficient investments. The Partners and residents have a high level of awareness of energy efficiency issues. The following is a summary of significant energy management improvements and tools the Partners have used in their facilities and

programs and provided to residents and businesses to reduce their energy use.

Facility Improvements. The Partners have collaborated with the Smart Energy Design Assistance Center (SEDAC) to receive free energy audits for government-owned facilities. The resulting reports provided clear direction on upgrades that reduce energy consumption, including boiler replacements, HVAC upgrades, new windows, lighting and roof systems. The SEDAC reports also provided information about grants and rebates that each project may qualify for, thereby reducing upfront costs to the Partners. Since 2010, the Partners have initiated energy-saving projects in the following facilities: Village Hall, Public Safety Building, Public Works Maintenance Garage, Water Plant and Civic Building (Village facilities) and Leisure Center, Sports Center, and the Joe Doud Administration Building (Park District facilities). Both the Village and the Park District plan to continue to improve the energy efficiency of their other buildings, starting with the Northbrook Sports Center.

Proposed improvements scheduled for 2013 through 2015 for the Sports Center include:

- Building Automation System Improvement (2013-2014) per suggestions of Energy Evaluation: this project is expected to receive \$60,000 in grants and energy savings are projected to be over \$45,000 annually (at current rates).
- Low-E Ceiling Installation (2014-2016) per suggestions of the Energy Evaluation: this project is expected to receive \$30,000 in grants and energy savings are projected to be over \$20,000 annually (at current rates).

Kill-a-Watts. The Village has made Kill-a-Watt devices available for complementary lending from the Northbrook Public Library. Using this simple device, a homeowner can determine which household appliances consume the most energy and shift usage habits or replace devices with energy-efficient models.

CUB Energy Saver. Northbrook is working with the Citizens Utility Board (CUB) to offer residents innovative approaches to energy conservation. Participants in the program can link a ComEd account

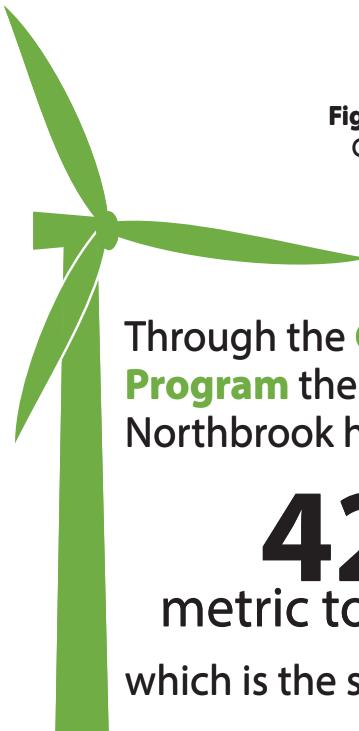
to the CUB Energy Saver, and the program tracks progress and issues reward points for energy savings that can be used for discounts at local and national retailers. To date, 250 households in Northbrook have registered and saved an estimated \$35,800. The Village also registered a few of its facilities and has saved more than \$7,400.

Energy Supply Alternatives. In March 2012, Northbrook voters approved a referendum authorizing the Village to engage in electricity aggregation services to secure a lower electric rate for its residents and small businesses. Working with nearby communities, the Village was a founding partner of the North Shore Electricity Aggregation Consortium. By bringing eight communities together, the consortium leveraged bulk purchasing power to secure 26% to 45% savings on the supply portion of electricity bills. While lower energy costs through aggregation may not promote energy conservation, the increasing reliance on renewable energy sources is a significant improvement for the Village. Currently, Northbrook residents are purchasing 8% renewable energy through the aggregation, and the amount of renewable energy will increase by 1% each year until 2025 as mandated by State statute. This aligns with the Illinois State Renewable Standard, and there is an additional option, (The Green Program), for residents who seek 100% renewable energy. Figure 5 depicts the impact of those residents who have elected to participate in this program.

Park District Energy Use Benchmark. As a result of its facility improvements, the Park District experienced significant reductions in electricity use between 2011 and 2012 and modest reductions in natural gas use in 2010 and 2012.

- Joe Doud Administration: Between 2010 and 2012, the Park District implemented lighting improvements and building automation system upgrades with the assistance of \$33,000 in grants, achieving an average reduction of 32% in electrical consumption and 16% reduction in gas consumption.
- Leisure Center: In 2012 the Leisure Center received a new roof and HVAC system. The new roof is white, which has a high albedo factor, decreasing the building's heat island effect and reducing the amount of energy required to cool the facility. The improvements were funded in part with \$58,000 in grants and have reduced the electrical consumption by 12% so far.

Figure 5. Impacts of the Green Power Program



Through the **Green Power Program** the Village of Northbrook has avoided

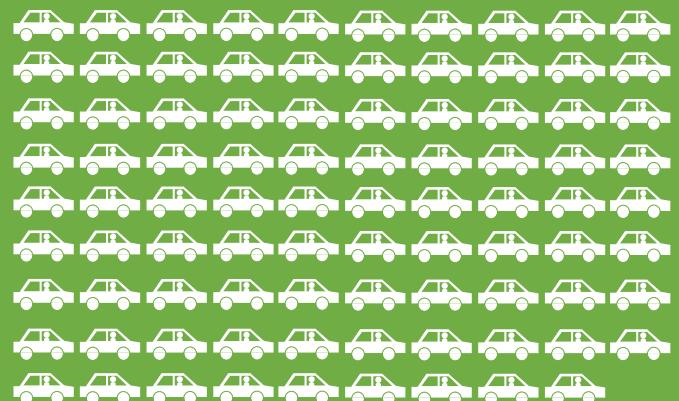
428
metric tons of CO₂

which is the same as

removing **64** households' electricity use for a year



or taking **89** cars off the road for a year



FUTURE ENERGY STRATEGIES

- Northbrook Sports Center: In 2010 the Park District updated the lighting with energy-efficient fluorescent lighting and light sensors throughout the Sports Center. The project was funded in part with over \$18,000 in grants and has reduced the electrical usage on average by 850,000 kWh.

In addition to the progress that has been made to improve energy efficiency, the Partners will continue to promote sustainable energy use in Northbrook. Table 1 below outlines the two broad goals for energy production and consumption, as well as specific strategies for attaining these goals and measures that will be used to determine success.

Goals, metrics, and strategies have been defined for each of the five distinct areas of sustainability (see the table below for Energy Goals, Metrics and Strategies). Each is categorized as “short term” meaning 1-2 years, “medium term” meaning 2-3 years, “long term” meaning 3 or more years, or “ongoing” for current strategies that are expected to continue.

Table 1. Goals, Metrics and Strategies for improving energy production and consumption

Agency	Energy Goal 1		Timeframe (Short, medium, long term or ongoing)
B: Both P: Park District V: Village	Reduce energy consumption in Park District and Village facilities by 20% in 20 years.		
Metric	Reduction in total kilowatt hour (kWh) and therm usage in Village and Park District facilities		
B	Strategy	Continue to explore grants and alternative funding to support energy efficiency improvements	ongoing
B	Strategy	Perform energy audits at facilities; make improvements as appropriate	ongoing
B	Strategy	Strategically place vegetation around buildings to reduce heating and cooling costs and decrease energy consumption	short term
B	Strategy	Conduct assessments of Partner owned exterior lighting for energy efficiency and possible light pollution controls	medium term
B	Strategy	For new construction or upgrades to existing buildings, integrate LEED best practices and/or achieve LEED certification or similar alternative assessment or rating, such as Energy Star and Green Globes	long term
Energy Goal 2			
B: Both P: Park District V: Village	Increase the potential for renewable energy generation and procurement within the community.		
Metric	Number of installations of solar panels, geothermal heat pumps, wind turbine, and other green, energy-saving technologies		
V	Strategy	Highlight the availability of the residential renewable energy credit	short term
V	Strategy	Review zoning standards to consider allowing green roofs, wind turbines, and solar panels as appropriate	medium term
P	Strategy	Assess the environmental and financial benefits of solar-powered electric golf carts	medium term
B	Strategy	Where possible and financially viable, assess installing Village and Park District-owned renewable energy generation technology at facilities	long term

MATERIALS MANAGEMENT

The Partners view material management as a life cycle. They consider the social and environmental impact of the materials at every stage of the lifecycle from extracting raw materials to manufacturing the usable product to transportation and disposal after use.

CURRENT MATERIAL INITIATIVES

Due to successful materials management initiatives, the waste generated per capita in Northbrook is five pounds less than the Cook County average and the 31% recycling rate exceeds the Cook County average by 6%. The Partners provide a variety of opportunities for recycling and other responsible material management for residents.

Village Operations. Village operations have moved toward electronic document storage, which will reduce its contribution to the waste stream. Also, Village Board agenda packets are now transmitted electronically, saving thousands of sheets of paper as well as transportation-related costs. And, paper that is used is recycled since recycling is readily available in each Village building.

Park District Operations. The Park District takes a holistic approach to waste diversion and materials management by considering not only what is disposed but also the materials used in facilities to reduce future waste. Recycling is widely available to all District staff and throughout all public parks. A

recent waste audit found that the Park District has a 99% recycling rate at its main office.

Using Recycled Products. The Partners are exploring the use of recycled products for everything from note pads to public pathways. Early in 2012, the Park District rolled out a two-part initiative to streamline the office supply ordering process and encourage the use of environmentally-preferred products. The initiative led to a centralized purchasing program, which netted a \$5,000 savings as well as a significant reduction in the overall carbon footprint of the District. By choosing recycled paper and other environmentally friendly supplies, the District saved approximately 21 tons of wood (the equivalent of 137 trees), 20,000 pounds of carbon dioxide and nearly 83,000 gallons of water.

Holiday Lights Recycling Program. Residents can recycle holiday string lights and extension cords at Village Hall and at other locations on select days. The Village works with an outside vendor to provide this service, which in turn generates revenue for the Village and funds other Northbrook recycling initiatives.

E-Waste. Residents can drop off any electronic item for recycling at the Public Works Fleet Maintenance Garage behind the Village Hall on the first Tuesday of each month. This service complies with the ban on curbside collection of e-waste imposed by the State of Illinois in January 2012. In 2012, the Village collected 52,144 pounds of e-waste.

Figure 6. Material management from raw material extraction to waste management.

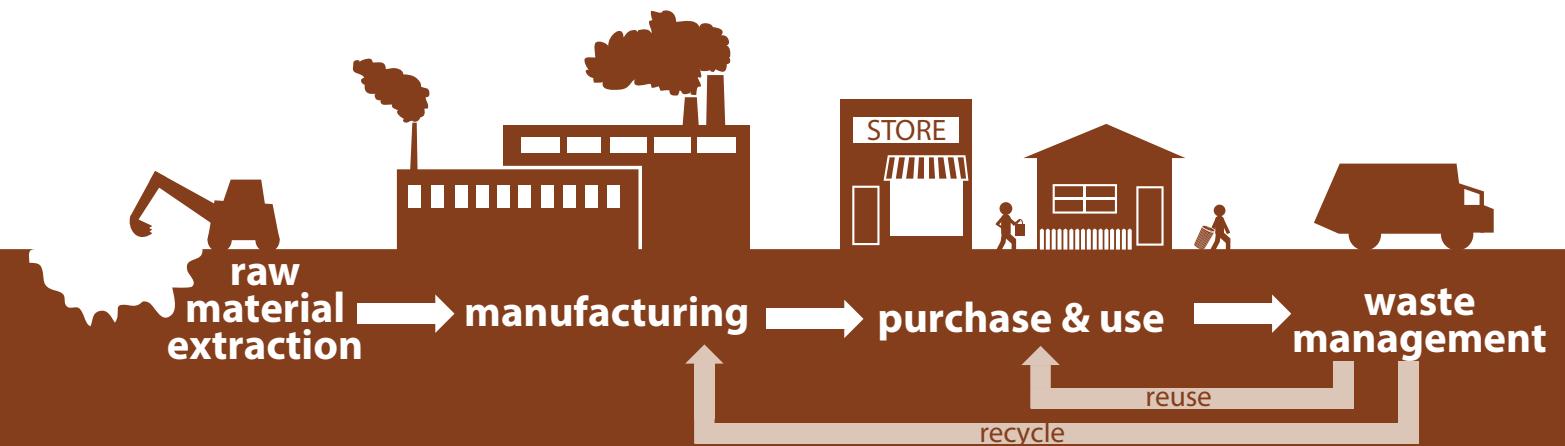




Figure 7. Fourth of July Parade float made from recycled materials.

Household Hazardous Waste. Residents can safely dispose of hazardous household waste on the first Tuesday of each month. The Village has collected the following hazardous wastes:

- 18,000 pounds of batteries annually
- 5,500 light bulbs in 2011
- 3.5 semi-trailers full of paint in 2012
- more than 1,000 gallons of waste oil from fleet vehicles in 2012

Scrap Metal. The Village continues to provide scrap metal recycling services. In 2012, the Village collected 2,150 pounds of brass and 35,840 pounds of steel.

Construction Debris. In 2008, the Village enacted a Construction and Demolition Debris Recycling Ordinance to ensure that construction materials such as metal, brick, concrete, wood and glass are recycled rather than landfilled. The ordinance requires that at least 75% of debris generated at a construction site

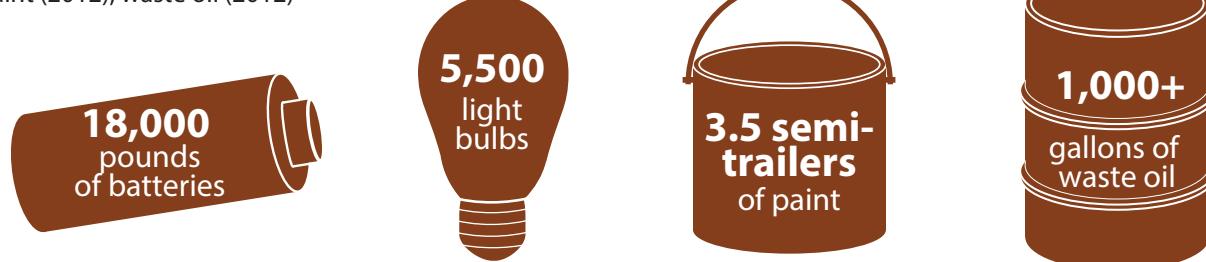
must be recycled. Cook County recently adopted a similar ordinance, which the Village is reviewing (to determine if the Village's ordinance is redundant).

Prescription Drug Disposal. The Police Department collaborates with Save-a-Star to dispose of prescription and over-the-counter medications properly to protect the environment and public safety. The Police Department collects the medications at a drop box located in their lobby.

Composting. The Park District's main office features a worm bin for lunch scraps (lettuce, orange peels, apple cores, etc.). The worms produce a nutrient-rich tea that staff uses to fertilize office plants.

Light Bulb Recycling. The Park District operates a so-called light bulb eater, a machine that crushes tube fluorescent bulbs in a 55-gallon drum that contains filters designed to collect over 99% of the mercury from the bulbs. The District recycles

Figure 8. Household hazardous waste collected: batteries (annual average), light bulbs (2011), paint (2012), waste oil (2012)



fluorescents from the Village which collects the District's HID (High Intensity Discharge) bulbs, such as metal halide and high pressure sodium bulbs.

FUTURE MATERIAL STRATEGIES

Although the Partners have demonstrated great success in material management, there are three broad goals for further improving materials management, detailed in Table 2.

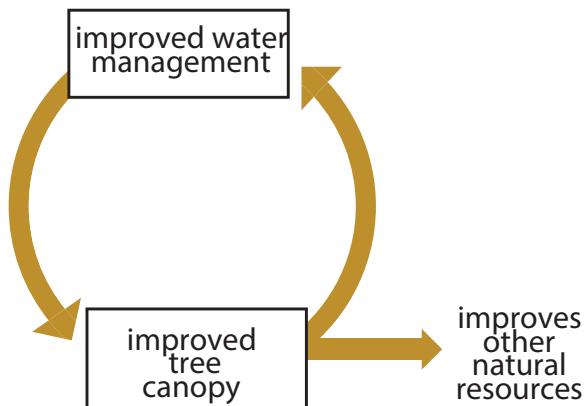
Table 2. Goals, Metrics, and Strategies for improving materials management

Agency	Materials Management Goal 1		Timeframe (Short, medium, long term or ongoing)
B: Both P: Park District V: Village	Reduce the environmental impact of materials in the operations, maintenance and upgrades of facilities and parks.		
Metric	Number of third-party certified green products purchased		
B Strategy	Prioritize biodegradable, low emission and low-toxicity products		ongoing
B Strategy	Create and adopt "Green Cleaning" policies in facilities		short term
B Strategy	Where possible and financially viable, encourage green and consolidated purchasing		ongoing
B Strategy	Where possible, purchase Energy Star appliances and electronics		ongoing
Materials Management Goal 2			
B: Both P: Park District V: Village	Reduce waste generated and improve recycling at Village and Park District Facilities.		
Metric	Increased recycling rated and decreased amount of waste		
B Strategy	Consider additional Partner recycling-related collaborations		short term
B Strategy	Improve signage/information displays for recycling at facilities		short term
B Strategy	Reduce paper and toner consumption by encouraging double-sided, black and white printing; "Think before you print"		ongoing
B Strategy	Park District will amend record management policies to allow electronic document management; Village will improve and broaden its electronic file management		medium term
B Strategy	Encourage waste haulers to provide regular reports indicating the volume of waste disposed and recycled by Partners' facilities		medium term
Materials Management Goal 3			
B: Both P: Park District V: Village	Increase community recycling rate to 50% while holding pounds per capita disposed constant.		
Metric	Increased recycling rate as documented in waste hauler reports		
B Strategy	Create a community guide to increase awareness of recycling opportunities; clarify which materials can be recycled/composted		short term
B Strategy	Explore the viability of a residential food-scrap collection program; increase awareness about composting		long term
V Strategy	Provide model bid documents to multi-unit property managers to help them secure recycling at their facilities		medium term
B Strategy	Make recycling options readily available and improve signage at Partners' facilities		ongoing
V Strategy	Engage the business community to discuss opportunities to increase recycling		medium term

NATURAL RESOURCE MANAGEMENT

Natural resources include fresh water, forests, air and other elements critical for human life and well-being. The preservation of these resources for future generations is a critical piece of the sustainability challenge. In Northbrook, both the Village and the Park District have focused on strong water management practices, which in turn will help maintain the health and quality of natural resources including open space, tree canopy and clean air.

Figure 9. Northbrook's approach to natural resource management



CURRENT RESOURCE INITIATIVES

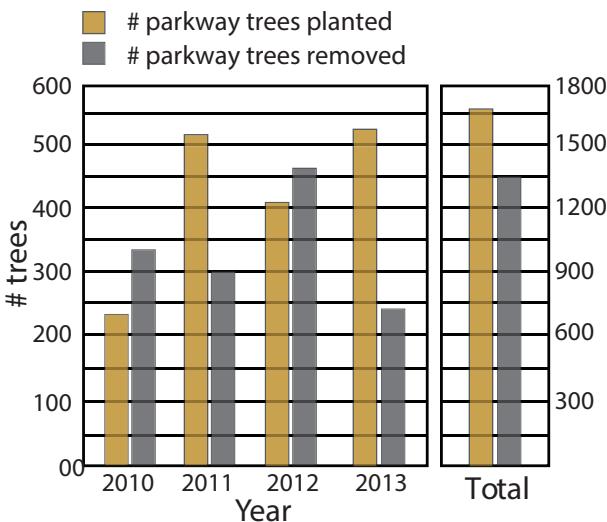
Although Northbrook is in close proximity to Lake Michigan, water is a limited resource. The Partners have been successful in conserving water and managing its demand, as well as managing water as a resource with various natural and human end-uses throughout its cycle. This approach encourages management practices that prevent runoff while ensuring a steady supply of water for other beneficial purposes, including aesthetics and recreation.

Village Master Stormwater Management Plan (MSMP). The original Plan, written in 1992, identified that development and an associated increase in impervious (paved) surfaces caused rainwater to flow to the sewer system at a greater volume, with greater speed and with increased flooding and damage to basements during storms. In response, the Plan established the Stormwater Management Commission, a 10-member advisory group that works with residents, staff, consultants and the Board of Trustees to improve the Village's MSMP. The Commission prioritizes stormwater management construction projects and programs when funding is available and benefits are justified. In 2011, an update to the MSMP shifted focus from large-scale stormwater

projects requiring coordination with groups such as FEMA or the Army Corps of Engineers to smaller projects that are intended to minimize localized flooding issues. These projects provide protection to numerous properties in areas throughout the Village during smaller rain events reducing the total number of flooding occurrences over the course of a year.

Tree Planting. Over the past 5 years, the Village planted on average 417 trees each year to keep up with removals precipitated by the Emerald Ash Borer (EAB) infestation. This included 510 trees in 2013 alone. Participants in a cost-share program can pay \$150 to receive their chosen species of tree planted in the parkway. Figure 10 (below) indicates the number of trees planted in response to the trees removed due to EAB infestation.

Figure 10. Trees planted and removed since 2010



The Park District also has been replacing EAB-infested trees throughout Northbrook's parks. Between 2011 and 2012, the Park District removed 143 Ash trees and planted 262 new trees. The new trees were carefully selected to improve tree canopy diversity.

Rain Gardens and Rain Barrels. Residents who have experienced flooding can help alleviate standing water in their yards and protect their homes by installing bioswales, berms, or rain gardens. Residents with flooding conditions that qualify for this program are reimbursed 50% of the improvement cost, up to \$3,500. The Park District also has installed rain gardens to improve water management on public sites including: Floral Park, Indian Ridge Park, Joe Doud Administration Building, and Meadow Road Tot Lot.

Figure 11 (right). A selection of parks throughout Northbrook

The Village also encourages homeowners to disconnect their downspouts from the sewer system and redirect them to rain barrels or to the landscape directly to conserve water, reduce runoff and prevent contamination of waterways. The Village has sold nearly 500 rain barrels to residents.

Park District Natural Area Improvements. In addition to the installation of rain gardens, the Park District has implemented several other natural area improvement strategies. When the Park District created Floral Park in 2011, with the help of a grant from OSLAD, one of the goals was the promotion of conservation education opportunities. The park design includes a native prairie with educational signs, low-maintenance materials and recycled glass pavement.

About half of the 107-acre Techy Prairie Park and Fields is open prairie and woodlands. The park contains the award-winning Trail Through Time, a unique natural history walk that meanders along 14 acres with a restored wetland. The educational trail shows how early settlers developed a relationship with the land, celebrating the first pioneer settlers.

Sportsman's Country Club, managed by the Park District, is working with the Audubon Cooperative Sanctuary Program for Golf Courses (ACSP), an international certification program to help golf courses develop conservation and wildlife enhancement programs. Sportsman's already has received certification in two of six categories: Environmental Planning and Wildlife and Habitat Management. Sportsman's is also in the middle of a shoreline stabilization project. This multi-year project began in 2010 and will replace all rip/rap edging along golf course water features with 3.75 acres of native plantings to improve water quality, enhance aesthetics and create wildlife habitat.

Linking Human Uses with Ecosystems. The Park District connects water conservation to stormwater management activities that link human uses with ecosystems and habitat. For example, some irrigation at the golf course is supplied by stormwater held on-site in detention ponds, which provide an essential public service but also a resource for birds and other wildlife.

FUTURE RESOURCE STRATEGIES

Table 3 on the following page outlines the four goals that will guide future natural resource management strategies in Northbrook.

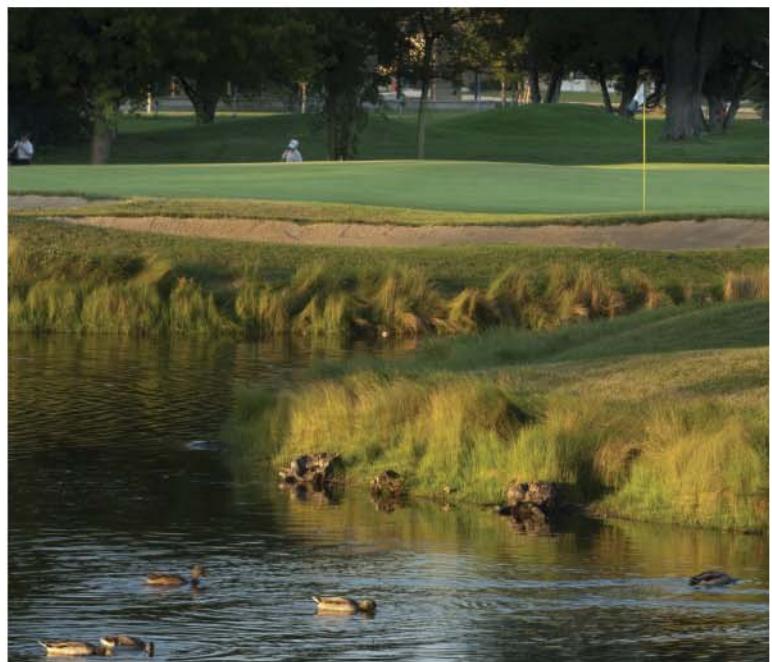


Table 3. Goals, Metrics and Strategies for improving natural resource management

Agency	Natural Resource Management Goal 1		Timeframe (Short, medium, long term or ongoing)
B: Both P: Park District V: Village	Conserve existing natural areas and restore available turf areas to provide habitat, promote biodiversity, decrease flooding and control erosion.		
Metric	Increase the total square footage of naturalized areas		
B Strategy	Increase diversity of tree species to reduce the impact of infestations		ongoing
B Strategy	As applicable, transition unused turf grass areas to native and non-invasive adapted plantings on Partners' property		medium term
V Strategy	Where possible and if prudent, incorporate native and adapted plants in medians and rights-of-way		medium term
P Strategy	Offer educational programs and materials on proper landscape management		short term
B Strategy	Protect and restore riparian, wetland, and shoreline buffers		medium term
B Strategy	Control, manage, and prohibit invasive plants at Partners' facilities		ongoing
P Strategy	Consider certifications such as Sustainable SITES or National Audubon Society for key parks and open spaces		medium term
Natural Resource Management Goal 2			
B: Both P: Park District V: Village	Implement Stormwater Best Management Practices (BMPs).		
Metric	Stormwater management projects completed with "green" elements		
V Strategy	Continue to utilize capital budget funds to implement Stormwater Management Plan		ongoing
B Strategy	Where possible, include stormwater BMPs in all roadway, park and facility improvements		medium term
B Strategy	Encourage the development of bioswales and rain gardens		ongoing
B Strategy	Educate the community about the value of downspout disconnection		short term
V Strategy	Where possible, build capacity to measure stormwater flow rate		long term
Natural Resource Management Goal 3			
B: Both P: Park District V: Village	Increase potable water BMPs village-wide.		
Metric	Number of potable water BMPs implemented throughout Northbrook		
B Strategy	Continue to promote rain barrels, rain gardens and gray water harvesting		ongoing
B Strategy	Where functional, install low-flow fixtures in Partners' facilities; encourage their use in commercial and residential construction		medium term
B Strategy	Install moisture sensors on existing irrigation systems		long term
Natural Resource Management Goal 4			
B: Both P: Park District V: Village	Encourage community-wide use of responsible pest control and fertilizer methods.		
Metric	Number of outreach efforts		
B Strategy	Offer educational programs on proper pest control and fertilizer use		short term
B Strategy	Develop and implement an active pest management plan for the control of known invasive plants at Partners' facilities		medium term
P Strategy	Provide interpretive signage at park sites to explain plans and benefits		short term
B Strategy	Encourage the planting of "Low Mow Fescues," native and adaptive plants, and increase plant bio-diversity to reduce the need for mowing and chemical pest control		short term

COMMUNITY DEVELOPMENT

Community development refers to strategies that achieve sustainable development through land use, urban design and green building. In alignment with the Plan's guiding principle, sustainable development meets the needs of today without compromising the ability of future generations to meet their needs. Sustainable development not only preserves environmental health by alleviating the impacts of development but also promotes economic growth and builds human capital through increased community engagement.

CURRENT DEVELOPMENT INITIATIVES

This Sustainability Plan provides an opportunity for Northbrook to add value to the community while preserving its historical integrity and character. Several existing initiatives showcase sustainable development principles.

Sustainable Development Incentive Program.

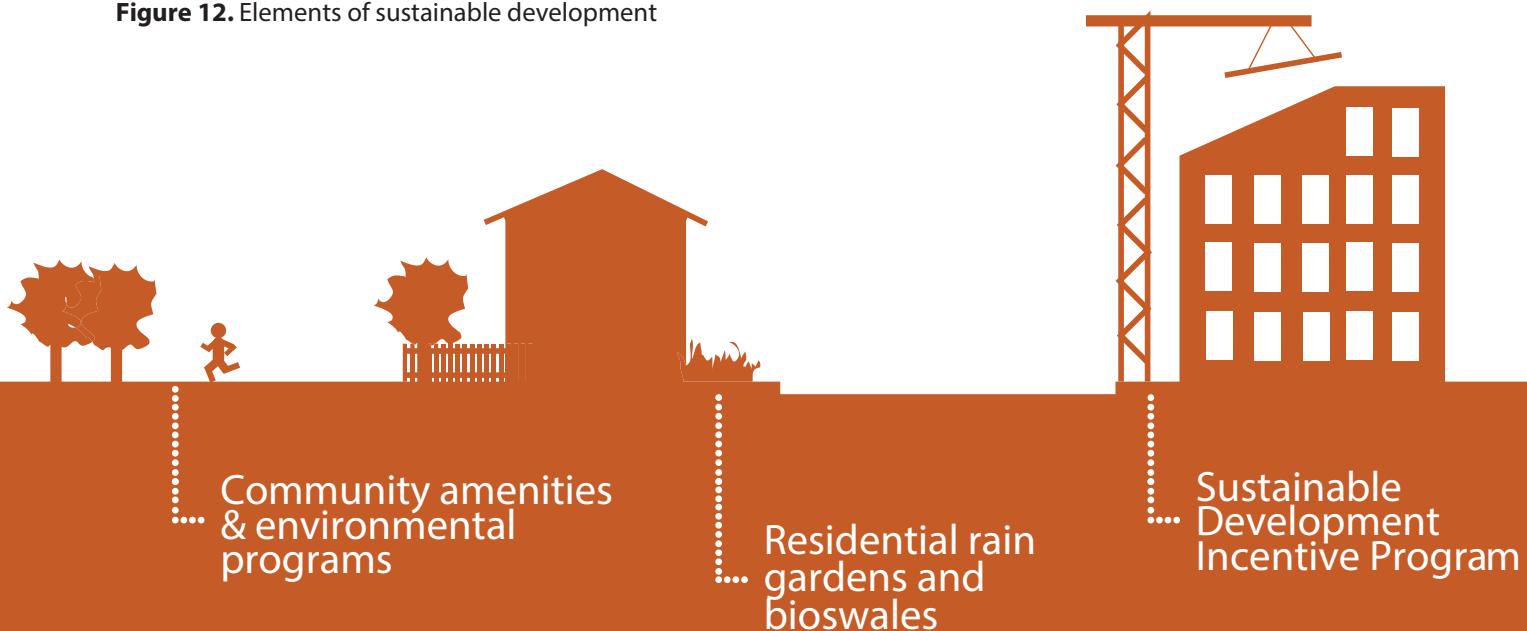
In 2008, the Village created a voluntary program to incentivize property owners and builders to construct buildings in an environmentally-friendly manner. The program is based on the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system and

provides incentives, including permit fee rebates, expedited permitting and review, and Village recognition. To date, six projects have applied for rebates under this program, including commercial, residential and mixed-use developments.

Community Gardening. There is a community garden behind the Village Hall and at Crestwood Place. Both feature individual plots and Food Pantry lots that donate produce to the Northfield Food Pantry and other charitable organizations. The Partners worked together on this initiative.

Village Green Overlay District. As an established community, Northbrook has limited opportunities for progressive development and infrastructure. However, the Village created a new zoning overlay district in 2004, called the Village Green Overlay (VGO), to encourage development that leads to a more mixed-use downtown to facilitate a vibrant, walkable community. The VGO requires continuity of pedestrian activity and pedestrian linkages to promote walkability, brick paving for crosswalks over pavement to promote downtown aesthetics and controlled lighting to reduce light pollution and glare while attractively illuminating the downtown area.

Figure 12. Elements of sustainable development





Community Amenities. The Park District promotes sustainable community development by providing amenities that support the well-being of residents. The Park District estimates that a majority of Northbrook residents live within $\frac{1}{2}$ mile of a park. In addition, the District builds community capacity to live healthier, more sustainable lives through its programming and events.

Park District Lands. The Park District owns 513 acres and manages an additional 30 acres due to intergovernmental agreements for a total of 543 acres. Since 2005 the Park District has acquired 8.65 acres at the following sites:

- Greenvew Park, 1.88 acres
September 2005
- Floral Park, 0.77 acres
November 2009
- 180 Anets Drive, 6.0 acres
December 2011

Environmental Programming. The Park District offers Camp Exploration, a kids' summer camp with an environmental theme. The curriculum includes canoeing in the Skokie Lagoon, geocaching, animal-predator games that teach children about the food web and relationships in nature, and science experiments involving soil layers and the water cycle.

FUTURE DEVELOPMENT STRATEGIES

Table 4 on the following page outlines the three goals that will guide future community development strategies as well as specific strategies for attaining these goals and the measures that will be used to determine their success.

Figure 13 (left). Northbrook residents enjoying parks and programs in the community

Table 4. Goals, Metrics and Strategies for improving community development

Agency	Community Development Goal 1			Timeframe (Short, medium, long term or ongoing)
B: Both P: Park District V: Village	Increase the sustainable development ('green') methods throughout the community.			
Metric	Number of building permits issued for projects incorporating sustainable design elements			
V	Strategy	Where possible, investigate incentives for sustainable development to encourage green building		ongoing
V	Strategy	Assess the possibility of adopting a lower cost Northbrook-specific certification program to encourage sustainable development		medium term
V	Strategy	Assess opportunities for transit-oriented development		medium term
V	Strategy	Where possible and fiscally prudent, encourage adaptive reuse of buildings throughout the community		ongoing
B	Strategy	Work to pair future Comprehensive Plan development with key strategies, policies and criteria of this plan		medium term
Community Development Goal 2				
B: Both P: Park District V: Village	Amend Village codes (zoning, engineering standards and specifications, building codes, etc.) to encourage green building.			
Metric	Annual number of green buildings built			
V	Strategy	Provide regular reviews of Village codes to remain current with green building technologies and initiatives		ongoing
V	Strategy	If practical, review potential zoning code amendments to allow multi-generational housing		medium term
V	Strategy	Review Zoning Code for possible amendments necessary for Transit Oriented Development to occur in the VGO		short term
Community Development Goal 3				
B: Both P: Park District V: Village	Increase opportunities for outreach and education on sustainable practices.			
Metric	Number of communications, website hits, attendance at Earth Day/Arbor Day Events, and number of other events with green booths			
B	Strategy	Improve existing websites and link the Partners' "green" pages		short term
B	Strategy	Provide interpretive signage of green amenities		short term
P	Strategy	Increase nature appreciation and environmentally-oriented educational programs offered by the Park District		short term
B	Strategy	Encourage collaboration and resource sharing between organizations, businesses, schools and other local agencies		short term
V	Strategy	Create a Sustainable Development Resource Booklet to disseminate to community development stakeholders through educational forums		medium term
B	Strategy	Provide educational forums for developers and contractors on white roofs, geothermal, building orientation, solar access, etc.		medium term
B	Strategy	Work to pair Communications Policies with key strategies, policies and criteria of this plan		ongoing

TRANSPORTATION

Transportation is the second largest contributor of Greenhouse Gas (GHG) emissions after building-related energy consumption. Transportation is also a major source of nitrogen oxide, which continues to keep the Chicago Metropolitan Area from meeting National Ambient Air Quality Standards.

Transportation, however, also represents an opportunity for residents and commuters to be more active and healthy. Reducing or replacing the use of fossil-fuel-based transportation supports environmental stewardship, alleviates environmental impacts, and improves environmental quality. High quality transportation systems support high quality of life through feasible alternatives such as public transit, biking and walking. With convenient public transit options such as Metra and Pace, and lower impact options (biking and walking), Northbrook has dedicated time and funds to provide convenient alternative transportation options.

CURRENT TRANSPORTATION INITIATIVES

Top Transit Suburbs. The Village of Northbrook was named one of the 20 “Top Transit Suburbs” (toptransitsuburbs.com) in the Chicago Metropolitan Region, based on a 2012 report from the Chaddick Institute for Metropolitan Development at DePaul University. This report considered community infrastructure, such as commuter rail stations and walkable downtown areas.

Bicycle Task Force. The Village’s Bicycle Task Force coordinates all bicycle-related initiatives in the community, reviews the need for access to bicycle transportation, identifies existing needs and offers recommendations to make the Village more “bike-friendly.” The Bicycle Task Force also has developed a Bike Plan to guide the further development of bike infrastructure throughout the village.

Anti-Idling Efforts. Beginning in March 2007, the Village partnered with parks, schools, and other organizations to install anti-idling signage. It also published articles in newsletters urging drivers to cut idling engines to reduce harmful pollutants at school pick-up locations, Park District facilities and train stations.



6 Pace bus routes



1 Metra train stop



11 bike trails
12 bike routes



27 bike rack locations

Figure 14. Alternative transportation options

Greening the Village Fleet. The Village received a grant for \$16,561 through the Clean Air Counts Program for Public Works staff to install diesel oxidation catalysts on 13 vehicles to reduce harmful emissions from diesel fuels, including particulate matter, carbon monoxide, hydrocarbons and nitrogen oxides. Northbrook was among the first communities to retrofit its equipment. The Village also has nine hybrid vehicles in its fleet.

Greening the Park District Fleet. The Park District fleet contains cars, trucks, landscape equipment and miscellaneous small engines. Most of the fleet relies on gasoline; although there are some diesel, electric and hybrid pieces of equipment.

Active Transportation. The Partners support active transportation, such as walking and bicycling, to access their facilities and services by making bicycle parking available. Throughout the Village, there are 15 parks with walking, biking, or multiuse trails, totaling over 8.5 miles. Northbrook is also participating in a multijurisdictional effort to convert former railways into a bike path, the Skokie Valley Bike Trail, to connect Chicago and Wisconsin.

Parking Management. The Park District shares its parking facilities with neighboring groups to reduce the number of spaces needed. This reduces the need for paved surfaces that interfere with effective stormwater management. The Park District has the following parking agreements:

- St. Norberts School and Church uses the parking lot at Village Green Center for parent drop-off, special occasions and Sunday overflow.
- Village Green and the Northbrook Historical Society share a parking lot
- Leisure Center and Beth Shalom allow shared parking during special events.
- The parking areas near Meadowhill Park and Northbrook Jr. High are used for overflow parking since the high volume times for each are opposite times of day and times of year.
- The Islamic Cultural Center uses the far southwest parking lot at the Sports Center as overflow parking.
- Wood Oaks Green Park visitors can use the Wood Oaks Junior High parking lot when school is not in session.

The Village has also worked to view parking as an integral component to both economic development and sustainable practices. This includes:

- Providing access to commuter parking at the lowest per-day rates in the area, and also utilizing those same commuter parking lots for free shopper parking after 10:00 a.m. on weekdays and all day on the weekends.
- Sharing parking between the Village Hall campus, the Northbrook Public Library campus and Greenbriar School campus to allow for large event parking.



Figure 15. Bike lane outside Village Hall

FUTURE TRANSPORTATION STRATEGIES

Although Northbrook has easy access to alternative transportation options, residents and staff seek additional improvements to the network of commuter rail and bus stations, a walkable downtown, bicycle and pedestrian paths and wayfinding signs. See Table 5 on the following page for goals and strategies for improving transportation.

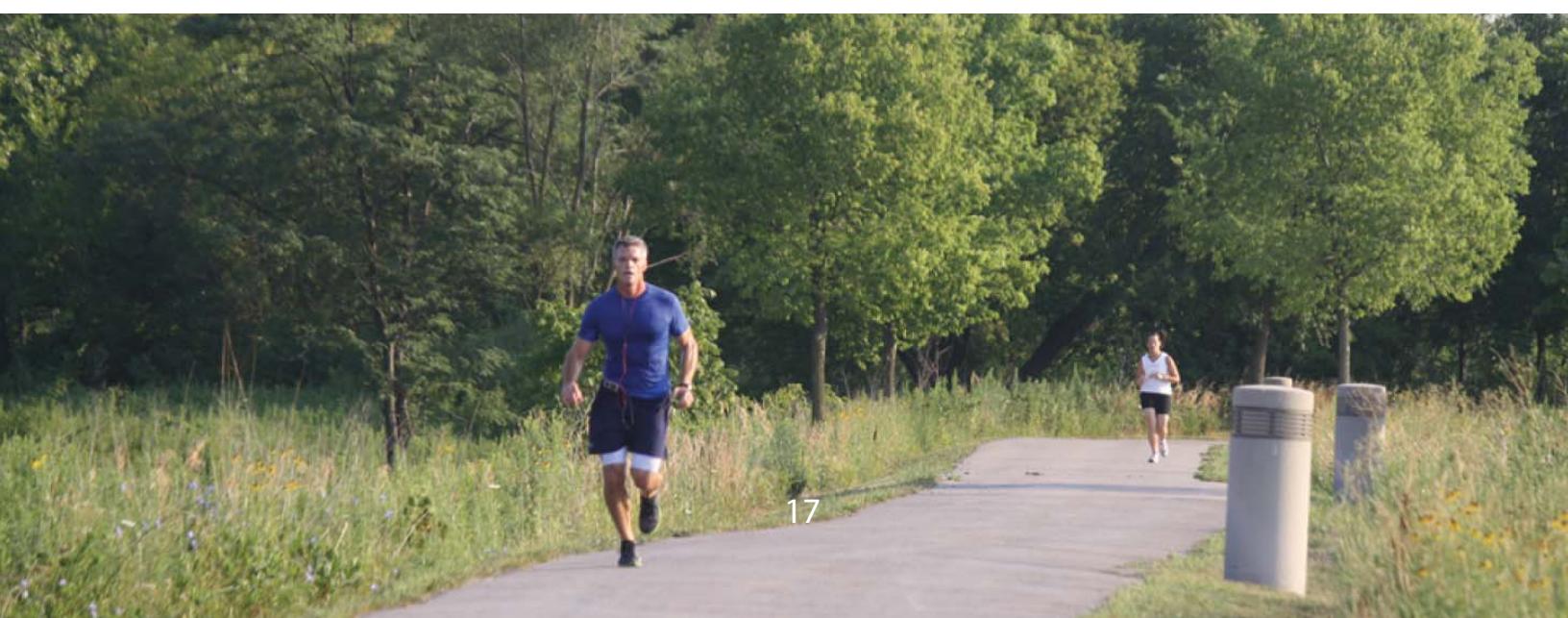


Figure 16. One of Northbrook's many multiuse trails

Table 5. Goals, Metrics and Strategies for improving transportation

Agency	Transportation Goal 1		Timeframe (Short, medium, long term or ongoing)
B: Both P: Park District V: Village	Maintain a diverse, safe, and high quality transportation network.		
Metric	Reduction in accidents, increased number of bicycle and pedestrian amenities, number of transportation alternatives		
B	Strategy	Identify potential links between open space and other activity centers (schools, Park District facilities, downtown) and provide signage for pedestrian and bike routes	short term
B	Strategy	Encourage multi-agency initiatives to link regional bike/pedestrian paths	medium term
B	Strategy	Where practical, provide adequate bike storage at facilities, parks, and downtown	short term
V	Strategy	Continue to work with other agencies to enhance public transportation options	ongoing
V	Strategy	Identify relevant bus and train routes on the green website	short term
B	Strategy	Incorporate IDOT's Complete Streets Initiatives into projects	ongoing
B	Strategy	Seek additional grant funding to improve the transit network	ongoing
Transportation Goal 2			
B: Both P: Park District V: Village	Reduce fuel consumption and emissions by Village and Park District fleet vehicles.		
Metric	Decrease in the amount of fuel purchased		
B	Strategy	Take into account factors such as miles-per-gallon, as well as hybrid or other energy efficient options, when considering the purchase of new fleet vehicles that best meet the needs of the Partners	ongoing
B	Strategy	Institute anti-idling policies and increase use of anti-idling technology in fleet vehicles	short term
B	Strategy	Assess the environmental and financial benefits of energy-efficient fuel sources for golf carts	medium term
Transportation Goal 3			
B: Both P: Park District V: Village	Reduce pollution and land development impacts from single occupancy vehicle use.		
Metric	Increased number of carpool parking spots, increased number of fuel efficient vehicles, increased Pace/Metra ridership, reduction in year-over-year growth in average daily vehicle traffic in key spots		
P	Strategy	Provide preferred parking for carpools at Park District facilities	short term
V	Strategy	Where possible, promote shared parking between businesses (night/day use)	ongoing
P	Strategy	As possible, provide preferred parking for fuel-efficient vehicles at facilities	short term
V	Strategy	Use newsletters and other means of communication to recognize businesses that provide shuttles, guaranteed ride home programs, and other transportation options	ongoing
B	Strategy	Participate in and support Commuter Challenges	short term

CONCLUSION

The Northbrook Strategic Sustainability Plan builds upon the demonstrated commitment of local government, business and residents to environmental and social responsibility, and it marks a significant step forward in the process of building a more sustainable Northbrook for current and future residents. Over the next several years, this plan will provide direction for Northbrook to continue to become more healthy, livable and environmentally resilient. The Village of Northbrook and the Northbrook Park District will maintain oversight of this plan, measuring progress made towards the goals that have been set and updating the plan as appropriate.

This plan was prepared by the Delta Institute.



Figure 17. Northbrook's Wood Oaks Green Park

