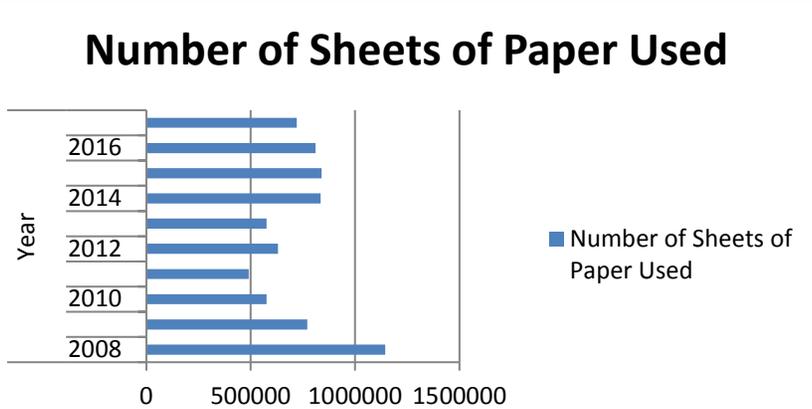


2017 Sustainability Report

Principle 1: Purchase and use of environmentally safe and sensitive products

Theme: Paper Purchasing and Reduction in Use

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS												
<ul style="list-style-type: none"> We replace paper with electronic communication whenever practical; including bidding documents, registration confirmations, P-cards, accreditation documents, staff manuals, etc. We print double-sided pages when possible. We use 30% recycled content office paper. 	<p>In spite of adding multiple facilities, parks and programs over the past 10 years, the Park District has decreased its paper use since 2008 and was able to reduce 2017 paper use by 90,000 pieces compared to 2016.</p>  <table border="1"> <caption>Number of Sheets of Paper Used</caption> <thead> <tr> <th>Year</th> <th>Number of Sheets of Paper Used</th> </tr> </thead> <tbody> <tr> <td>2016</td> <td>~700,000</td> </tr> <tr> <td>2014</td> <td>~800,000</td> </tr> <tr> <td>2012</td> <td>~600,000</td> </tr> <tr> <td>2010</td> <td>~550,000</td> </tr> <tr> <td>2008</td> <td>~1,100,000</td> </tr> </tbody> </table>	Year	Number of Sheets of Paper Used	2016	~700,000	2014	~800,000	2012	~600,000	2010	~550,000	2008	~1,100,000	<p>By using 30% recycled content paper since 2012, we saved:*</p> <ul style="list-style-type: none"> 159 trees 71 million BTUs of energy 13,683 lbs. carbon dioxide 74,211 gallons of water <p>By switching to direct mailing of our Program Guide, we are able to print 10,500 fewer guides each quarter, resulting in the following paper savings annually:</p> <ul style="list-style-type: none"> 2,898,000 sheets of paper 348 trees 472 million BTUs of energy 331,147 gallons of water <p>*Calculations made by the Environmental Paper Network Paper Calculator</p>
Year	Number of Sheets of Paper Used													
2016	~700,000													
2014	~800,000													
2012	~600,000													
2010	~550,000													
2008	~1,100,000													

Theme: Use of Green Cleaning Supplies and Services throughout the District

SUSTAINABLE PRACTICES	BENEFITS
<ul style="list-style-type: none"> Parks staff uses a bulk cleaner dispensing system by Metro with lidded, 5-gallon buckets. Cleaners are pre-measured and diluted with water. Staff uses green cleaners in all facilities and parks, including golf courses, Centennial Beach, Knoch Knolls Nature Center, Fort Hill Activity Center and Knoch Park Central Maintenance Facility. Custodial is using a 5-filter system for vacuums, resulting in cleaner air. Custodial's eco-flex carpet extractor uses less water and chemical when cleaning carpets. Custodial's eco-flex auto-scrubber strips floors with water and small amounts of low VOC cleaners. All cleaning machines use cold water only, and peroxide-based cleaners. All floor finishes have a 0.95% or less VOC. Restroom paper products are made of 100% recycled content. Custodial uses recycled plastic trash can liners. Fleet uses a solvent-free cleaner to clean vehicle parts. 	<ul style="list-style-type: none"> Green products are safer for employees using them. Green products are safe for volunteers to use, including volunteers with special needs. Containers are refillable, reducing waste. Green products do not pollute soil, air, or water.

Principle 2: Effective Use and Protection of Air, Water, Soil, and Wildlife

Theme: Use Pervious Materials for Construction of Hardscape When Practical

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS
<ul style="list-style-type: none"> Consider installing pervious pavement in areas where maintenance is practical. Seek grants to assist with initial cost and/or maintenance of pervious pavers. Each of the 6 pervious pavement projects completed between 2009 and 2016 was funded, in part, by grants. Parks Department manages annual sweeping of pervious pavement at Winding Creek Park, Seager Park, Weigand Riverfront Park, Knoch Knolls Nature Center, Sportsman’s Park and Fort Hill Activity Center. 	<ul style="list-style-type: none"> The District maintains approximately 118,033 SF of pervious pavement including 8,033 SF added at Knoch Park Central Maintenance Facility parking lot in 2017. 	<ul style="list-style-type: none"> 50-year lifecycle cost of pervious pavement is projected to be 25% less than asphalt. Improves water quality of the DuPage River and other streams by reducing runoff and filtering water on site. Pollutants removed include nitrogen, phosphorus, lead, zinc, and total suspended solids.

Theme: Conserve Water in Operations

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS
<ul style="list-style-type: none"> Use water from retention ponds and quarries for irrigation. Synthetic turf fields at Nike Sports Complex and Commissioners Park reduce the need for irrigation. Golf continues to reduce water usage by adjusting the spray patterns of sprinklers. The 1,400 gallon cistern at Knoch Knolls Nature Center reuses rainwater for indoor plumbing, providing approximately 50% or more of the water used by the building The 10,000 gallon underground cistern at Knoch Park provides approximately 50% of the water used for ball field irrigation. 	<ul style="list-style-type: none"> The Knoch Park cistern was not used for irrigation in 2017 due to a broken pump. The pump was repaired by the installer in fall 2017 and should be ready for use again in 2018. The cistern at Knoch Knolls Nature Center harvested approximately 146,376 gallons of water in 2017, down from 2016 due to the sewer backup and resulting restoration work at the Nature Center in April and May. The cistern provided 65% of the water used at the facility, saving approximately \$1,025 in water costs. 	<ul style="list-style-type: none"> Reuse of rain water saves money, local potable water supply, and slows runoff from the site, leading to improved water quality of local streams.

Principle 2: Effective Use and Protection of Air, Water, Soil, and Wildlife (cont'd)

Theme: Protect Wildlife

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS
<ul style="list-style-type: none"> • Park Police hand out river wildlife cards on the Riverwalk to encourage visitors to refrain from feeding ducks and other waterfowl • Central Parks staff maintains two hives of honeybees at the back of the organic area of the Ron Ory Community Garden Plots. • Central Parks discontinued use of the chemical, Merit, for grub control and uses Acelepyrn instead, which is safer for pollinators. • Approximately 125 milkweed plants, planted by a boy scout, are located near the honey bee hives at the Garden Plots, attracting Monarch butterflies to the area • Both golf courses have incorporated native areas with milkweed and other pollinator plants (approx. 2.5 acres at Springbrook and 5 acres at Naperbrook). The native areas receive minimal herbicide treatments, and no insecticide treatments. No pesticides are applied during egg laying periods. Annual mowing and other practices help minimize invasive weeds; milkweed seeds are sown to increase the number of plants. 	<ul style="list-style-type: none"> • In 2017 the District added 5 monarch way stations at Knoch Knolls Nature Center, Nike Sports Complex, Country Lakes Park, Seager Park, and the Ron Ory Community Garden Plots. All are certified through Monarch Watch (the first 4 were certified in 2017 and the Garden Plots in early 2018). A monarch way station includes 10 or more milkweed plants and 4 or more nectar plants in an area that is at least 100 SF. 	<ul style="list-style-type: none"> • Honeybees are essential to many of the fruits and vegetables that we enjoy. Providing a safe place for several hives will benefit the garden plots and will help bring back the honeybee population. • Allowing ducks to feed naturally leads to better health for the ducks, prevents crowding and aggression among the ducks, and helps keep the river clean. • Milkweed plants provide habitat for Monarch butterflies.

Theme: Improve and Maintain the District's Natural Areas

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS
<ul style="list-style-type: none"> • The Parks Department actively maintains more than 260 acres of existing natural areas and works with the Planning Department to restore additional natural areas. • Community volunteers assist with park maintenance projects when possible. 	<ul style="list-style-type: none"> • District-wide natural areas include prairie, woodland, shoreline and "low mow" areas. The total acreage of natural areas is being re-calculated as part of a new natural areas management plan and will be reported in next year's Sustainability Report. • South Parks seeded 18 acres of prairie/woodland with native grass and forb seed. • Natural area management practices in 2017 included 33 acres of controlled burning, 53 acres of invasive removal and 34 acres of low mowing. • 408 trees were planted District-wide. • 754 volunteers devoted 6,110 hours to park maintenance projects in 2017. • Planning completed a pond dredging project at Hunters Woods, where contractors excavated sediment which was formed into a berm on site. The shoreline was regraded and planted with native plants and pond aerators were installed. 	<ul style="list-style-type: none"> • Benefits of restoring shorelines include less maintenance for staff, improvement in the water quality of rivers and streams, smaller Canadian geese population, and improvement in native riparian animal & insect habitat. • Benefits of increased low-mow areas include reduction of air pollution caused by mowing and reduction in the amount of fuel used for mowing and reduction in labor and related costs. • Pond aerators eliminate the need for chemical applications, reducing pollution.

Principle 2: Effective Use and Protection of Air, Water, Soil, and Wildlife (cont'd)

Theme: Improve and Evaluate Use of Chemical Applications for Landscape Maintenance and Hard Surfaces

SUSTAINABLE PRACTICES	2017 Update	BENEFITS
<ul style="list-style-type: none"> • Golf and Parks are using best management practices in applying fertilizers and herbicides, including soil testing to limit elements only to what are needed for the soil. • Parks staff continues to reduce the amount of salt applied in deicing; uses magnesium chloride in all sensitive areas and for walkways. • Central Parks uses microbes to improve turf quality while decreasing the use of synthetic fertilizer and plant protectant chemicals. • Golf continued the use of naturally occurring microbes to reduce thatch in turf, helping to naturally reduce pests and disease problems. • Central Parks top dresses fields with 10 tons of compost, mostly composed of leaves, twigs and landscape waste, reducing fertilizer use, to relieve compaction and feed the soil bacteria that provide nutrients to the turf. • The Riverwalk team applies leaf compost on perennial beds in place of mulch, which helps to add nutrients to the soil, reduce the need for fertilizer and relieve compaction. • The Riverwalk division also uses an organic fertilizer called 3-4-3 Healthy Start Landscape N-P-K Fertilizer on planting beds in place of a chemical fertilizer. • Ft. Hill Activity Center has heated walkways to the entrance to reduce need for salt in winter. • South Parks is using “Power Melt Green” to melt ice; it is calcium magnesium acetate based and labeled one of the most environmentally friendly ice melt formulations. 	<ul style="list-style-type: none"> • Parks began an organic park maintenance initiative, in which 8 parks and more than 65 playground areas will be maintained only with organic products for two years. Weeds, turf and soil will be monitored and the approach evaluated. 	<ul style="list-style-type: none"> • Benefits of best management practices in landscape maintenance include improved water quality in streams and ponds, healthier turf, improved soil, protection of pollinators, and reduced cost. • Benefits for reducing use of salt include reduced replacement costs for salt damaged landscaping trees and shrubs; protection of water quality, plant, and animal life in sensitive wetland areas; and reduced costs from more efficient application of deicers, minimizing waste. (From IPRA’s <i>Environmental Toolkit</i>)

Principle 3: Effective Use of Energy Resources

Theme: Energy Conservation - Vehicles and Equipment

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS										
<ul style="list-style-type: none"> Using bio-based fuel and fluids, including B20 Dieselelex Gold fuel during the warm season, EcoTerra hydraulic fluid, fully synthetic engine oil, and canola based lubricant. Continue to purchase or convert vehicles for alternative fuel, including hybrid, electric and propane. Continue to test efficiency and economy of new fuels, fluids and types of vehicles. Reuse oil from Centennial Grill and Springbrook and Naperbrook clubhouses to fuel the vegetable oil tractor. Recycle excess oil via a vender. The fleet now has a propane fueling station and 14 road vehicles that run on propane and gasoline fuel, 3 propane forklifts and 4 propane zero-turn mowers. 	<div data-bbox="940 321 1518 678" style="text-align: center;"> <h3>% Fleet Using Alternative Fuel</h3> <table border="1" style="margin: 10px auto;"> <caption>% Fleet Using Alternative Fuel</caption> <thead> <tr> <th>Year</th> <th>% Fleet Using Alternative Fuel</th> </tr> </thead> <tbody> <tr> <td>2014</td> <td>50</td> </tr> <tr> <td>2015</td> <td>55</td> </tr> <tr> <td>2016</td> <td>60</td> </tr> <tr> <td>2017</td> <td>65</td> </tr> </tbody> </table> </div> <p data-bbox="926 711 1533 735">NPD has been designated as an Illinois Green Fleet since 2011</p>	Year	% Fleet Using Alternative Fuel	2014	50	2015	55	2016	60	2017	65	<ul style="list-style-type: none"> Electric vehicles produce no emissions. Hybrids are expected to provide twice the gas mileage of the vehicles they replaced. Synthetic oil improves fuel economy, uses less oil. Propane is cleaner and costs less than gasoline. Use of vegetable oil is carbon neutral.
Year	% Fleet Using Alternative Fuel											
2014	50											
2015	55											
2016	60											
2017	65											

Theme: Renewable Energy Use

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS																				
<ul style="list-style-type: none"> Rooftop solar panels provide renewable energy at Knoch Knolls Nature Center, Nike Sports Complex, and Fort Hill Activity Center. Parks operates 2 solar-powered pond aerators at Hobson West Ponds. Fleet installed a solar panel to power a diesel pump and also used solar power for a trailer lift. Solar panels are considered for buildings when grants or rebates are available. 	<p data-bbox="569 1016 1541 1040" style="text-align: center;">2017 Solar Output at Nike Sports Complex, Knoch Knolls Nature Center and Ft. Hill Activity Center</p> <table border="1" data-bbox="541 1040 1518 1292"> <thead> <tr> <th>Facility</th> <th>kWh Generated by PVs</th> <th>Est. Cost Savings</th> <th>CO2 Avoided</th> </tr> </thead> <tbody> <tr> <td>Nike Sports Complex</td> <td>16,245</td> <td>\$1,787</td> <td>12.1 metric tons</td> </tr> <tr> <td>Knoch Knolls Nature Center</td> <td>22,932</td> <td>\$2,522</td> <td>17.1 metric tons</td> </tr> <tr> <td>Ft. Hill Activity Center</td> <td>44,780</td> <td>\$4,926</td> <td>33.3 metric tons</td> </tr> <tr> <td style="text-align: center;">TOTAL</td> <td>83,957</td> <td>\$9,235</td> <td>62.5 metric tons</td> </tr> </tbody> </table>	Facility	kWh Generated by PVs	Est. Cost Savings	CO2 Avoided	Nike Sports Complex	16,245	\$1,787	12.1 metric tons	Knoch Knolls Nature Center	22,932	\$2,522	17.1 metric tons	Ft. Hill Activity Center	44,780	\$4,926	33.3 metric tons	TOTAL	83,957	\$9,235	62.5 metric tons	<ul style="list-style-type: none"> Solar panels produce clean, renewable energy. Annual cost savings throughout lifecycle. Educational value for the community.
Facility	kWh Generated by PVs	Est. Cost Savings	CO2 Avoided																			
Nike Sports Complex	16,245	\$1,787	12.1 metric tons																			
Knoch Knolls Nature Center	22,932	\$2,522	17.1 metric tons																			
Ft. Hill Activity Center	44,780	\$4,926	33.3 metric tons																			
TOTAL	83,957	\$9,235	62.5 metric tons																			

Principle 3: Effective Use of Energy Resources (cont'd)

Theme: Energy Conservation – Indoor and Outdoor Facilities

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS																																																
<ul style="list-style-type: none"> The District conducts an ongoing energy audit, tracking electric and gas bills. Trades is upgrading to LED lights whenever budget allows. Energy efficient lighting and HVAC systems are installed in new buildings Athletic fields use energy-efficient lighting that can be controlled remotely to accommodate schedule changes. All sports lighting is now integrated into the Control Link system. Drop-in tennis and basketball court lighting is now on push button controls, for more energy savings. 	<ul style="list-style-type: none"> Trades completed the installation of LED lights at the Commissioners Park and installed LED lights in the food and beverage areas at both Springbrook and Naperbrook Golf Courses. <p style="text-align: center;">Energy and Cost Savings for Control Link System</p> <table border="1" data-bbox="430 500 1451 868"> <thead> <tr> <th>Year</th> <th>kWh Saved - Early Offs</th> <th>kWh Saved Using Push Buttons</th> <th>Total kWh Saved</th> <th>Tons CO2 Saved</th> <th>Cost Savings in Early Offs</th> <th>Cost Savings Push Button</th> <th>Total Cost Savings</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>18,589</td> <td>118,373</td> <td>136,962</td> <td>94</td> <td>\$1,673</td> <td>\$10,654</td> <td>\$12,327</td> </tr> <tr> <td>2014</td> <td>21,767</td> <td>106,342</td> <td>128,109</td> <td>88</td> <td>\$1,959</td> <td>\$9,272</td> <td>\$11,231</td> </tr> <tr> <td>2015</td> <td>23,700</td> <td>238,477</td> <td>262,177</td> <td>181</td> <td>\$2,133</td> <td>\$23,848</td> <td>\$25,981</td> </tr> <tr> <td>2016</td> <td>20,189</td> <td>222,646</td> <td>242,835</td> <td>171</td> <td>\$1,817</td> <td>\$22,265</td> <td>\$24,082</td> </tr> <tr> <td>2017</td> <td>20,067</td> <td>258,380</td> <td>278,447</td> <td>207</td> <td>\$2,207</td> <td>\$28,422</td> <td>\$30,629</td> </tr> </tbody> </table> <p>Reduced electricity demand with Control Link saved 207 metric tons of carbon emissions in 2017.</p>	Year	kWh Saved - Early Offs	kWh Saved Using Push Buttons	Total kWh Saved	Tons CO2 Saved	Cost Savings in Early Offs	Cost Savings Push Button	Total Cost Savings	2013	18,589	118,373	136,962	94	\$1,673	\$10,654	\$12,327	2014	21,767	106,342	128,109	88	\$1,959	\$9,272	\$11,231	2015	23,700	238,477	262,177	181	\$2,133	\$23,848	\$25,981	2016	20,189	222,646	242,835	171	\$1,817	\$22,265	\$24,082	2017	20,067	258,380	278,447	207	\$2,207	\$28,422	\$30,629	<ul style="list-style-type: none"> Reducing energy use realizes cost savings and reduction in pollution, water consumption & use of fossil fuels.
Year	kWh Saved - Early Offs	kWh Saved Using Push Buttons	Total kWh Saved	Tons CO2 Saved	Cost Savings in Early Offs	Cost Savings Push Button	Total Cost Savings																																											
2013	18,589	118,373	136,962	94	\$1,673	\$10,654	\$12,327																																											
2014	21,767	106,342	128,109	88	\$1,959	\$9,272	\$11,231																																											
2015	23,700	238,477	262,177	181	\$2,133	\$23,848	\$25,981																																											
2016	20,189	222,646	242,835	171	\$1,817	\$22,265	\$24,082																																											
2017	20,067	258,380	278,447	207	\$2,207	\$28,422	\$30,629																																											

Principle 4: Reduction and Handling of Waste

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS														
<ul style="list-style-type: none"> • Conduct periodic waste audits. • The District specifies mixed-source recycling for its waste hauler contract. • NPd requires contractors to recycle construction waste. • Staff continues recycling and reusing materials whenever possible. • Parks staff chips trees and uses mulch for trails, etc. • The District hosts community recycling opportunities when practical. 	<ul style="list-style-type: none"> • Mixed Source Materials and Yard Waste Diverted from the Landfill: Approximately 38% of the District’s waste was diverted from the landfill, with 25% comprised of recycled materials (plastic, aluminum, paper and glass) and 13% comprised of yard waste. • Central Parks collected 5,000 leftover Christmas trees from local businesses to create 22 truckloads of valuable mulch. Central also collected 100 tons of manure from local horse farms for use by gardeners in the Ron Ory Community Garden Plots. • South Parks chipped the trees that were removed at Knoch Knolls disc golf course and used the chips to mulch trees, basket rings and paths through the course. • Two students from Naperville Central High School raised money to purchase a tennis ball recycling bin for Knoch Park Tennis Courts. They will send the balls they collect to Recycle Balls, a recycling company that makes a crumb rubber product for use in manufacturing. In the fall of 2017 they collected 1,450 balls for recycling. • Fleet uses Pig Mats to absorb oil and then recycle it. <p style="text-align: center;">Other Materials Recycled/Reused in 2017</p> <table border="1" data-bbox="556 781 1446 1003"> <thead> <tr> <th>Tires (#)</th> <th>Engine Oil (gal.)</th> <th>Electronics</th> <th>Holiday Lights</th> <th>Used Vegetable Oil (gal.)</th> <th>Pallets</th> <th>Metal</th> </tr> </thead> <tbody> <tr> <td>145 tires</td> <td>650</td> <td>61 desktop computers and misc. equipment</td> <td>414 lbs.</td> <td>*</td> <td>163</td> <td>11,000+ lbs.</td> </tr> </tbody> </table> <p>*Kitchen oil saved for future recycling by Golf</p>	Tires (#)	Engine Oil (gal.)	Electronics	Holiday Lights	Used Vegetable Oil (gal.)	Pallets	Metal	145 tires	650	61 desktop computers and misc. equipment	414 lbs.	*	163	11,000+ lbs.	<ul style="list-style-type: none"> • Materials are kept out of the landfill. • Reuse and recycling generates cost savings and rebates.
Tires (#)	Engine Oil (gal.)	Electronics	Holiday Lights	Used Vegetable Oil (gal.)	Pallets	Metal										
145 tires	650	61 desktop computers and misc. equipment	414 lbs.	*	163	11,000+ lbs.										

Principle 5: Environmental Education and Interpretation

SUSTAINABLE PRACTICES	2017 UPDATE	BENEFITS
<ul style="list-style-type: none"> • The District maintains a page on its website with information about our environmental initiatives. • Interpretive signs (34 to date) are installed where appropriate to educate park visitors about our natural areas. • “Conservation at Home” signs showcase restoration and demonstration projects at the Ron Ory Community Garden Plots, Winding Creek Park, Frontier Sports Complex and Knoch Knolls Nature Center. • We promote a rain barrel sale with The Conservation Foundation. • A volunteer training video is now available at www.napervilleparks.org. 	<ul style="list-style-type: none"> • Naperville Park District received the 2017 Illinois Sustainability Award based on its initiatives over the past 5 years, including constructing Knoch Knolls Nature Center, restoring parkland at Sportsman’s Park, a variety of energy saving measures, its natural areas maintenance, and more. • 18,666 people visited Knoch Knolls Nature Center in 2017, including participants in environmental education programs, special events and mobile tours. Special events included the inaugural Monarch Festival that attracted 700+ visitors, Creepy Critters Day, involving 390+ participants, and Nature Discovery Days with 864 participants. Overall attendance was down due to the closing of the Center in April and May for restoration following the flood. • In 2017, 354 people accessed the mobile tours at Knoch Knolls Nature Center. 268 of the 354 were new users. • Volunteer Manager Lynnette Hoole coordinated with 12 organizations to launch the first Earth Week Naperville—a community-wide initiative to offer educational events and engage volunteers in beautifying parks and other public spaces in celebration of both Earth Day and Arbor Day. A total of 961 volunteers logged 1382 service hours, and hundreds of people attended educational seminars and the City of Naperville’s Arbor Day Tree Sale. • Naperville Park District staff participated in the Molex Earth Week environmental fair, sharing information about Park District green initiatives. • In addition to posting the 2016 Sustainability Report on our website, we posted a ParkTalk blog, entitled, “Hidden Measures: A behind-the-scenes look at the Park District’s new green initiatives.” The post received nearly 5,800 views. • Manager Carl Gorra served on a panel of experts on Natural Lawn Care and Integrated Pest Management at a Lawn and Land Workshop on Nov. 13, 2017 at Oakton Community College. 	<ul style="list-style-type: none"> • NPD is known as a leader in promoting green practices. • Education and communication leads to growth in sustainable practices within NPD and in the community.