

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

Theme: Paper Purchasing and Reduction in Use

SUSTAINABLE PRACTICES	2015 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 2015 we used approximately 840,000 sheets of office paper. By using 30% recycled content paper in 2015 we saved:*</p> <ul style="list-style-type: none"> • 30 trees • 14 million BTUs of energy • 2,606 lbs. carbon dioxide • 14,136 gallons of water 	<p>By using 30% recycled content paper since 2012, we saved:*</p> <ul style="list-style-type: none"> • 106 trees • 49 million BTUs of energy • 9,102 lbs. carbon dioxide • 49,364 gallons of water <p>*Calculations made by the Environmental Paper Network Paper Calculator</p>

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 and Knoch Knolls Nature Center. • Recreation Support is using a 5-filter system for vacuums, resulting in cleaner air. • Recreation Support’s eco-flex carpet extractor uses less water and chemical when cleaning carpets. • Recreation Support’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. • Rec Support 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	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 5 pervious pavement projects completed between 2009 and 2015 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 and Sportsman's Park. • The District maintains approximately 100,000 sf of pervious pavement 	<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	2015 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 90% of the water used by the building • The 10,000 gallon underground cistern at Knoch Park provides up to 66% of the water used for ball field irrigation. 	<ul style="list-style-type: none"> • Knoch Park cistern harvested 397,000 gallons of water in 2015, which is 66% of the total gallons of water used at Knoch Park for irrigation (600,000 gallons) saving approximately \$940 in water costs. • The cistern at Knoch Knolls Nature Center harvested approximately 136,230 gallons of water in 2015, which provided 90% of the water used at the facility, saving approximately \$253 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.

Theme: Protect Wildlife

SUSTAINABLE PRACTICES	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. 	<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

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

Theme: Improve and Maintain the District's Natural Area

SUSTAINABLE PRACTICES	2015 UPDATE	BENEFITS
<ul style="list-style-type: none"> The Parks Department actively maintains 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"> The Park District completed the remediation of Sportsman's Park and received a No Further Remediation letter from the Illinois EPA in September 2015. More of the park is now open for the public to enjoy, with 7 acres planted and maintained as natural areas, accessible by trails. District-Wide Natural Area Management <ul style="list-style-type: none"> 46,890 LF of Shoreline Managed 238 acres of Woodland Managed 38 acres of Controlled Burning 37 acres of Invasive Removals 31 acres of Low Mowing 285 trees planted 680 volunteers devoted more than 4,580 hours to park maintenance projects in 2015. 	<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. Pond aerators eliminate the need for chemical applications, reducing pollution.

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

SUSTAINABLE PRACTICES	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 uses a safer broadleaf weed killer. Parks staff checks soil reports and applies fertilizers according to what elements are needed. 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. Central Parks uses Fiesta, a mineral based herbicide, for broadleaf control and Acelepyrn for grub control, which is safer for pollinators. Central uses Finalsan herbicide as a fast-acting weed, grass, algae, and moss killer. 	<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	2015 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. 	<ul style="list-style-type: none"> The fleet now has 6 trucks that run on propane fuel. Funding for purchasing/converting the vehicles was provided, in part, by a \$24,000 grant. The District also added a propane fueling station. 59% of the District's vehicles and motorized equipment runs on alternative fuel. <div data-bbox="993 313 1566 703" style="text-align: center;"> <table border="1"> <caption>% Fleet Using Alternative Fuel</caption> <thead> <tr> <th>Year</th> <th>% Fleet Using Alternative Fuel</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>33</td> </tr> <tr> <td>2014</td> <td>50</td> </tr> <tr> <td>2015</td> <td>58</td> </tr> </tbody> </table> </div> <ul style="list-style-type: none"> NPD has been designated as an Illinois Green Fleet since 2011. 	Year	% Fleet Using Alternative Fuel	2013	33	2014	50	2015	58	<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									
2013	33									
2014	50									
2015	58									

Theme: Renewable Energy Use

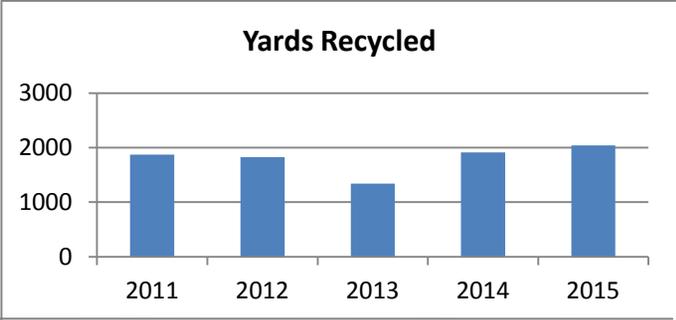
SUSTAINABLE PRACTICES	2015 UPDATE	BENEFITS												
<ul style="list-style-type: none"> Rooftop solar panels provide renewable energy at Knoch Knolls Nature Center, Nike Sports Complex, and Knoch Park. Parks operates a solar-powered pond aerator at Hobson West Ponds. Solar panels are considered for buildings when grants or rebates are available. 	<p>2015 Solar Output at Nike Sports Complex and Knoch Knolls Nature Center</p> <table border="1" data-bbox="470 1010 1446 1159"> <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>15,908</td> <td>\$1,590</td> <td>11 metric tons</td> </tr> <tr> <td>Knoch Knolls Nature Center</td> <td>21,195</td> <td>\$2,119</td> <td>14.6 metric tons</td> </tr> </tbody> </table> <p>View environmental benefits and daily output of PVs at both facilities online at http://www.napervilleparks.org/solarpower</p>	Facility	kWh Generated by PVs	Est. Cost Savings	CO2 Avoided	Nike Sports Complex	15,908	\$1,590	11 metric tons	Knoch Knolls Nature Center	21,195	\$2,119	14.6 metric tons	<ul style="list-style-type: none"> Solar panels produce clean, renewable energy. Annual cost savings throughout lifecycle. Educational value for the community.
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Principle 3: Effective Use of Energy Resources (cont'd)

Theme: Energy Conservation – Indoor and Outdoor Facilities

SUSTAINABLE PRACTICES	2015 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 	<ul style="list-style-type: none"> Trades replaced fluorescent lights with LED lights at the Administration Building, Alfred Ruben Riverwalk Community Center, and South Maintenance Facility, with support from a \$10,000 grant from the Illinois Clean Energy Community Foundation. LED lighting upgrades completed in 2014 at Naperbrook Golf Course, several sports complexes and Centennial Beach are now showing benefits. For example, the table below shows the energy and cost savings at Frontier Sports Complex. New, energy-efficient sports lighting was installed at Sportsman’s trapshooting range <p style="text-align: center;">Frontier Sports Complex (West Side)</p> <table border="1" data-bbox="506 609 947 776"> <thead> <tr> <th>Year</th> <th>kWh Used</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>63,852</td> <td>\$5,624</td> </tr> <tr> <td>2015</td> <td>28,598</td> <td>\$2,824</td> </tr> <tr> <td>Savings</td> <td>35,254</td> <td>\$2,800</td> </tr> </tbody> </table> <p>Energy savings resulted in a reduction of 24.3 metric tons of carbon emissions.</p>	Year	kWh Used	Cost	2013	63,852	\$5,624	2015	28,598	\$2,824	Savings	35,254	\$2,800	<ul style="list-style-type: none"> Reducing energy use realizes cost savings and reduction in pollution, water consumption & use of fossil fuels. 																				
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<ul style="list-style-type: none"> 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. 	<p style="text-align: center;">Energy and Cost Savings for Control Link System</p> <table border="1" data-bbox="415 1003 1373 1284"> <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>\$19,926</td> <td>\$22,059</td> </tr> </tbody> </table> <p>Reduced electricity demand with Control Link saved 181 metric tons of carbon emissions in 2015.</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	\$19,926	\$22,059	
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Principle 4: Reduction and Handling of Waste

SUSTAINABLE PRACTICES	2015 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. 	<p style="text-align: center;">Cubic Yards of Mixed Source Materials Recycled</p>  <p style="text-align: center;">Other Materials Recycled/Reused in 2015</p> <table border="1" data-bbox="541 862 1094 976"> <thead> <tr> <th>Tires (#)</th> <th>Engine Oil (gal.)</th> <th>Mobile Devices</th> <th>Used Vegetable Oil (gal.)</th> </tr> </thead> <tbody> <tr> <td>750</td> <td>750</td> <td>207</td> <td>70</td> </tr> </tbody> </table> <p>Note: The District received a rebate of \$2,562 for recycling mobile devices.</p>	Tires (#)	Engine Oil (gal.)	Mobile Devices	Used Vegetable Oil (gal.)	750	750	207	70	<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.)	Mobile Devices	Used Vegetable Oil (gal.)							
750	750	207	70							

Principle 5: Environmental Education and Interpretation

SUSTAINABLE PRACTICES	2015 UPDATE	BENEFITS
<ul style="list-style-type: none"> • The District maintains a page on its website with information about our environmental initiatives. • Interpretive signs 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, and Frontier Sports Complex. • We promote Earth Day as Earth Month with associated volunteer opportunities. • A volunteer training video is now available at www.napervilleparks.org. 	<ul style="list-style-type: none"> • There are now 31 outdoor interpretive signs throughout the District educating park visitors about natural area restoration, water quality improvements, renewable energy, and native plants and animals in our parks. • New interpretive signs installed in 2015 include signs at the Ron Ory Community Garden Plots educating visitors about the Idea Gardens. Eagle Scout Jeremy Tang designed the signs, which also can be accessed at http://www.napervilleparks.org/ideagardens. Another new interpretive sign was installed at Nike Sports Complex by the Park District explaining the benefits of the photovoltaic panels on the roof of Book Pavilion. • 24,382 people visited Knoch Knolls Nature Center in 2015, its first full year of operations. Special events included a week-long exhibition of recycled art by Chicago artist Lucy Slivinski with a workshop that attracted 448 visitors, a green building tour for DuPage County science teachers, an exhibition of environmental projects by fifth grade Project Idea students, a visit from the environmental club at Mill St. School, a teacher workshop, nature-themed summer camps involving 200 participants, and a Story Walk program for 180 participants, in collaboration with the Naperville Public Library and DuPage Children’s Museum. • New hands-on exhibits for children were added to the exhibit area of the Nature Center. • A nature blog was added to the Knoch Knolls Nature Center webpage, announcing news about animal sightings, seasonal topics of interest, and invitations to suggest names for the Nature Center’s new creatures, including a snake, toad, and turtle. • Knoch Knolls Nature Center achieved LEED Platinum Certification with the U.S. Green Building Council for Knoch Knolls Nature Center, which is the highest level of sustainability in the LEED system as of 2015. • Knoch Knolls Nature Center won several architectural awards in 2015, including an Excellence in Engineering award from the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), the <i>Engineering News Record (ENR) Midwest’s</i> Best Project of the Year Award in the category of small projects, and the American Institute of Architects (AIA) Northeast Illinois’ Design Excellence Award - Merit in Architecture for Distinguished Building Over \$3 Million category. • 680 volunteers devoted more than 4,580 hours to park maintenance projects in 2015. • The District’s Adopt-A-Park program continues to grow, with some groups adopting athletic fields or sections of trails. 	<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.