



# Naperville



## FY 13 Sustainability Report

May 2013

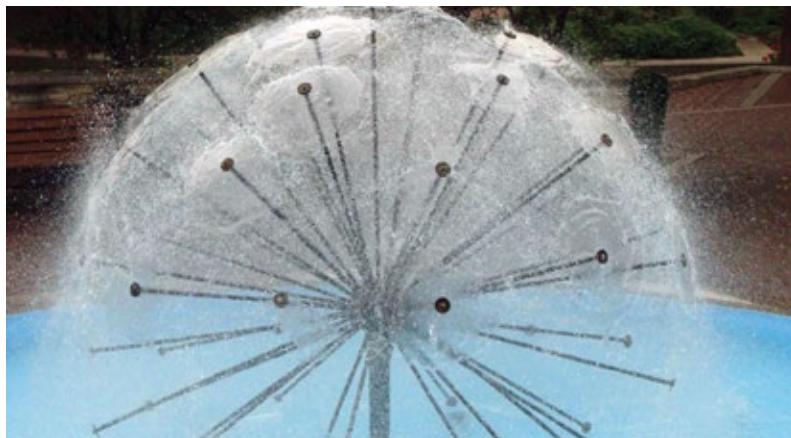
# INTRODUCTION

The City of Naperville works diligently to provide a safe and sustainable environment for residents, visitors and employees alike. Since the adoption of the *Naperville Environmental Sustainability Plan* in 2010, outlined goals have been set in motion, evaluated, and refined to advance the City of Naperville in environmental stewardship. The plan includes nearly 50 implementation objective items to promote sustainability.

Each year the plan is evaluated on the following categories:

1. Leadership & Education
2. Resources & Energy
3. Transportation & Mobility
4. Waste Management & Recycling
5. Sustainable Development & Infrastructure

This report will lay out the City's FY 13 initiatives according to these five categories.



Dandelion Fountain in Downtown Naperville

## 1. Leadership & Education

### *EnviroTeam*

In accordance with the eighth objective of the *Naperville Environmental Sustainability Plan* (Formalize Organization Structure for Implementation of the Environmental Sustainability Plan), an EnviroTeam consisting of staff from City departments was created. This group now convenes quarterly to promote communication between departments in order to more effectively implement the recommendations of the *Environmental Sustainability Plan*. The mission of the committee is threefold:

- i. Facilitate inter-departmental communication on "green" efforts to identify overlap, conflicts and requirements.
- ii. Communicate successes with the community.
- iii. Facilitate successful implementation of the *Environmental Sustainability Plan*.

The EnviroTeam is chaired by Amy Emery of the City Manager's Office. Members include: Jan Fischer (Finance), Larry Gunderson (IT), Katie Helfert (TED), Jim Holzapfel (DPU-Water), Kate Houlihan (Communications), Veronica Kloff (CMO), Beth Lang (DPW), Pat Lord (Legal), Ron Ritter (DPU-Electric) and Rick Sander (Fire).



### *Public Outreach*

In FY 13 city staff created an EnviroTeam webpage at [www.naperville.il.us/enviroteam.aspx](http://www.naperville.il.us/enviroteam.aspx). This site is designed to serve as a portal for residents, businesses and visitors looking for environmental information about Naperville. The site is being widely promoted to showcase its usefulness as a community resource. Since launching the site, it has been visited 350 times. To gain followers, the EnviroTeam is committed to weekly updates to page information, including a strong social media campaign focused on consumer purchase education and weekly event promotion.

### *Earth Day*

To promote environmental awareness in conjunction with Earth Day, the City's EnviroTeam worked with Communications to have the April edition of *Naperville Connected* "go green." The entire edition was dedicated to sustainability initiatives being pursued by the City of Naperville to promote awareness and inspire environmental action by residents. Based on the success of this edition, the City plans to annually dedicate this issue to sustainability efforts residents.

## **Earth Hour**

The City's EnviroTeam organized and promoted Naperville's participation in the annual Earth Hour event. The City's electrical system experienced a reduction in power usage of .75 percent during Earth Hour when comparing it to the hour just prior to the event. The City saw a 5.8 percent decrease in power usage for Earth Hour when compared to the same time period for the previous Saturday. In recognition of this global movement, the downtown tree lights were turned off at the start of Earth Hour.

## **Greenhouse Gas Inventory**

The 2010 *Environmental Sustainability Plan* calls for the bi-annual update to the Greenhouse Gas (GHG) Inventory. It was initially anticipated that this update would be completed by city staff in 2011 (using available data from either 2007 or 2009). Reductions in force reprioritized available resources to other areas.

In July 2012, Stephanie Hastings, President of Naperville for Clean Energy and Conservation (NCEC), and Adrienne O'Neil, School District 204 Science Teacher and iSTEM (Illinois Science, Technology, Engineering and Mathematics

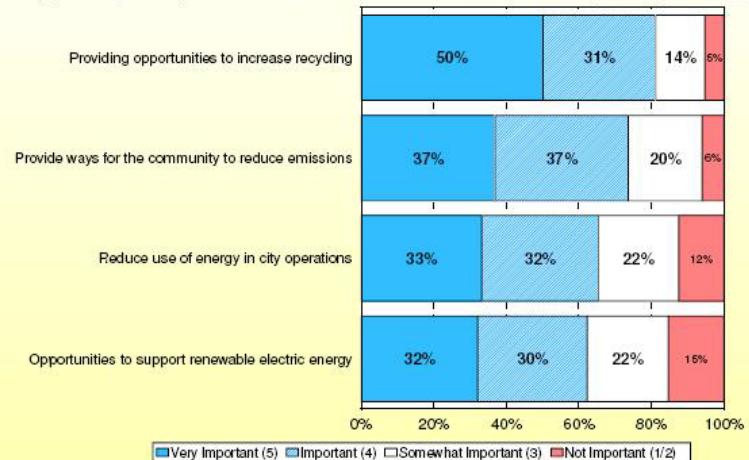
Education Initiative) student advisor, approached staff with an innovative idea for updating the GHG Inventory. Mobilizing SD204 iSTEM students (junior and senior level high school students with advanced science and mathematics skills) and an environmental science engineer volunteer liaison have worked to provide an update to the GHG Inventory looking at 2005, 2007, 2009 and 2011 data. City staff will present this updated information to City Council and make it available on the EnviroTeam webpage in FY 14.

## **Citizen Satisfaction Survey**

In the 2012 Citizen Satisfaction Survey several questions were asked specific to the environment. The results reveal that recycling is a top environmental priority (95% support), followed by reduced emissions (94% support), reduced energy use in City operations (88% support) and renewable electric energy (85% support). In 2008, 82% of residents thought it was important or very important for the City to invest in initiatives that will help preserve the environment.

## **Q19. How Important Various Environmental Issues are to Residents**

by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)



Source: ETC Institute DirectionFinder (December 2012 - Naperville, IL)

## **ETC Institute, 2012 Citizen Satisfaction Survey**

By comparison, in 2012, only 68% percent of residents thought it was important or very important. This reduction is likely due to the perception that environmental responsibility will result in added financial costs. The EnviroTeam, in accordance with the *Environmental Sustainability Plan*, is committed to minimal or cost-neutral efforts. In fact, several of the City's environmental initiatives actually provide cost savings, and in the case of some recycling efforts, generate revenue for Naperville.

## **Procurement Guidelines**

Procurement guidelines were adopted during FY 13 in accordance with ninth objective of the *Naperville Environmental Sustainability Plan*. The goal of this policy is to reduce the adverse environmental impact of our purchasing decisions by buying goods and services from manufacturers and vendors who share our commitment to the environment. By including environmental considerations in our purchasing decisions, along with our traditional concerns with price, performance, and availability, we will remain fiscally responsible while promoting practices that improve public health and safety, reduce pollution, conserve natural resources, and reward manufacturers and vendors that reduce the adverse environmental impact of their production and distribution systems. Essentially, the policy allows the City to open up a dialog with our clients when preparing a procurement and to discuss what "green" measures are possible. It simply keeps environmental concerns in the picture for each procurement.

# RESOURCES & ENERGY

## 2. Resources & Energy

### Renewable Energy Contract

The 2010 *Environmental Sustainability Plan* included the short-term goal of evaluating the Renewable Energy Contract. In FY 13, the renewable energy contract management was taken in-house. The savings have provided the opportunity to develop a grant program that will support local renewable energy projects through a competitive grant program to be made available in FY 14.

### Leak Detection Program

The Department of Public Utilities-Water (DPU-W) tested 25 percent of the pipe system with sonar technologies to detect and fix leaks. DPU-W tests 25 percent of the system each year as a proactive measure to maintain system efficiencies and save water resources.



Solar panel installation

### Solar Panels

Solar panels can be an effective source of renewable energy because solar energy can be stored in batteries, reflected, insulated, and transmitted. Over the reporting period, DPU-W partnered with DPU-E to install solar panels at the Springbrook Wastewater Treatment Facility.

### Naperville Smart Grid Initiative (NSGI)



Winners of the NSGI logo contest in 2011

The Naperville Smart Grid Initiative (NSGI), lead by the Department of Public Utilities- Electric (DPU-E), is an investment in Naperville's City-owned utility using the latest digital technology to increase reliability, reduce operating costs, improve efficiency and reduce waste for our customers. Installation of this infrastructure is consistent with Objective No. 14 contained in the *Naperville Environmental Sustainability Plan*. During the reporting period, the City continued with its extensive educational efforts and completed over 99 percent of the installation of approximately 58,000 meters serving customers across the City. In August of 2012, revamped utility bills started being sent to customers that allow additional energy usage information from future rate selections to be displayed on the bills. Extensive work to test the ePortal, a secure, and interactive website that will let customers learn more about their personal energy use, began in FY 13.

### 3. Transportation & Mobility

#### *Anti-idling Policy*

The Naperville Police Department (NPD) continued to successfully implement its anti-idling policy aimed at reducing carbon emissions and fuel consumption by not idling vehicles for prolonged periods of time. Idling can ruin a vehicle's engine and waste gas, resulting in higher maintenance costs and expedited vehicle replacement needs.

#### *Sidewalk Program*

Since 2004, sidewalk installations have closed gaps in 68 locations across Naperville, totaling approximately 9.8 miles. The Sidewalk Program allows more residents to become mobile in their community and creates an attractive and pedestrian-friendly atmosphere for Naperville residents and visitors alike. During FY 13, approximately 8,100 linear feet (1.5 miles) of sidewalk gaps were filled.

#### *Electric Vehicle Charging Stations (EVCS)*

After the Department of Public Utilities-Electric (DPU-E) installed and tested an EVCS at the Electric Service Center to investigate the impact of charging stations on the electric grid, the first public EVCS became available in the downtown Van Buren surface lot in October 2012. Since that time, nearly 300 plug-ins have been recorded at the site. In conjunction with the NSGI, the ribbon-cutting event for this amenity included a raffle where five Naperville property owners received an EVCS for residential use.



The City installed its first public Electric Vehicle Charging Station (EVCS) in the VanBuren Public Parking lot in downtown Naperville.

# WASTE MANAGEMENT & RECYCLING

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## 4. Waste Management & Recycling

### *Leaf Collection Program*

Naperville, certified as a Tree City USA through the Arbor Day Foundation for 22 years, is known for its abundant and beautiful trees. In FY 13, the Department of Public Works successfully collected 58,747 cubic yards of leaves during their collection program. Leaf collections help control pollution and reduce carbon emissions through residential burning.



City Manager, Doug Krieger with  
Public Works Staff collecting leaves, 2012

### *Recycle My Fridge*

In FY 13, DPU-E promoted the Illinois Municipal Electric Agency's "Recycle My Fridge" Program. The initiative provided free pick-up and recycling of older refrigerator/freezer units.

Replacement of these older units with newer, more efficient models promotes energy savings to customers and the utility. 191 Refrigerators / freezers have been recycled by DPU-E customers since the inception of this continuing program.

### *Household Hazardous Waste (HHW) Recycling*

Naperville continues to offer one of only four permanent HHW collection locations in the state. In 2012, storage lockers were replaced to continue to safely provide this service to the region. In 2012, more than 260 tons of materials were collected from 15,890 visitors.



The HHW Recycling facility, located at Fire Station 4 on Brookdale Road

### *Residential Electronics Recycling*

With the rapid pace of technological advances, electronics have short life spans that result in high waste rates. In response to this widespread issue, Naperville piloted a Residential Electronics Recycling Program even before the State of Illinois mandated such recycling in January of 2012. The successful pilot effort and law change has created exponential growth for this service. To accommodate demand, in 2012, Saturdays were added as a collection time in addition to Tuesdays and Thursdays at the DPW Recycling Drop-Off Center. The program collected nearly 485,801 pounds of old electronics in FY 13.

### *Environmental Collection Center*

To accommodate the growing demand for drop-off recycling, in 2012 the Department of Public Works consolidated and expanded its traditional and electronics drop-off collection facilities in one location. The plan is to eventually move HHW collection to this location as well. The result of this effort will be an Environmental Collection Center with a greater capacity to serve the community and region.

## 5. Sustainable Development & Infrastructure

### **Green Building Code Updates**

The City adopted the 2012 International Code Council (ICC) Family of Building Codes with local amendments, including the 2012 International Energy Conservation Code. Updating codes ensures that best practices are used for new developments that will conserve energy and resources for the future.

### **Greener Business Program (GBP)**

The Greener Business Program was created in 2009 using American Recovery and Reinvestment Act (ARRA) funds. The goal of the GBP is to assist qualifying owners and operators of Naperville businesses and multi-family buildings complete energy efficiency retrofit projects that reduce energy consumption and increase energy efficiency. During FY 13, applications were received and all remaining funds were spent. Through the course of the program, the City awarded approximately \$310,000 to 38 businesses, religious institutions and multi-family complexes. Additionally, the GBP has spurred over \$1,000,000 worth of total investment in energy efficient improvements to existing buildings located in Naperville.

### **Zoning for Solar Energy Systems**

In FY 13, the City Council approved an amendment to Section 6-15-5:1 (Solar Energy Systems) of the Zoning Ordinance in order to permit the installation of building-mounted solar energy systems by right in any residential district. The amendment was completed in order to eliminate barriers to and encourage additional installation of such systems in residential districts.

### **Tree Preservation**

In FY 13, the City Council approved a scope of work for Tree Preservation efforts and directed staff to convene a working group comprised of various Naperville stakeholders to investigate the use of specific tools to reduce or prevent tree damage during the construction or renovation of single-family homes. The group voted that Technical Assistance should be the highest priority. In FY 14, staff will work to develop an incentive program for tree preservation; funding for this program will require City Council approval.

### **City Garden Initiative**

In 2012, City staff worked during their own personal time to convert an unlandscaped area at the Naperville Municipal Center into a cooperative garden plot. Fifteen employees participated. The gardeners were very successful and able to share their harvest with fellow employees. Similar efforts were introduced at area fire stations. Based on the success of the program, it will be repeated in FY 14.

### **Water Meter Replacement Program**

This program was completed in April 2013. The effort replaced over 20,000 water meters that were 20 years old or older. The new meters improve accuracy and reliability. During the program unaccounted/unmetered flow has improved from 12% to less than 5%, reducing operational costs by over \$500,000 annually.

### **Emerald Ash Borer (EAB)**

EAB was first identified in Naperville in June of 2008 and has since been found in all subdivisions throughout the City. In FY 13, Department of Public Works (DPW) efforts focused on a containment strategy which consisted of removing infested ash trees and treating all parkway ash trees within a half mile radius of the infestation. The City treated 15,982 ash trees to prevent against the emerald ash borer and removed 651 infested trees in FY 13.

### **Arbor Day Tree Sale**

DPW annually hosts an Arbor Day Tree Sale. Residents can select from hundreds of trees and many varieties of trees at fantastic savings to beautify their yards and help the environment. In FY 13, DPW sold 399 trees.

### **Municipal Data Center Redesign**

Computer data centers are a high-growth and energy intensive sector of the U.S. economy that the U.S. Department of Energy has targeted as an important area to improve energy efficiency. In FY 13 the Department of Public Works and Information Technology Department completed a redesign of the City of Naperville's main computer data center at the Municipal Center. The redesign included relocating server racks, upgrading the HVAC duct work to improve air flow and a reduction in the overall size of the data center. The redesign is estimated to reduce energy consumption up to 37%, saving the City \$4,500 annually.

# DEVELOPMENT & BEYOND

## ***Ice Bear Clean Energy Demonstration Project***

In April 2013, as part of a public-private partnership, Verde Energy USA purchased and installed an Ice Energy "Ice Bear"™ air conditioning unit on the City of Naperville's Water Service Center, 1200 W. Ogden Avenue. The Ice Bear replaces a conventional condensing unit, a component of a typical building cooling system. Ice Bear shifts air conditioning electrical power demand to off-peak hours by using water to make ice at night, when the electric grid is generally unstressed. Then, during a hot summer day, when energy demand goes up and electrical prices may be higher, the melting ice provides the cooling that otherwise would have to come from the air conditioner compressor. The melting water is then recycled through the system when the process begins again the following night. The result is lower energy cost and increased electric grid reliability. The technology has proven effective in more than 50 investor and publicly owned utilities across the country. Naperville's pilot partnership provides an opportunity for education and demonstration of the equipment to other municipalities, community facilities, and businesses.



The "Ice Bear" installed in early spring 2013

## ***Ongoing Programs***

In addition to the initiatives and projects already noted in this report, every department continues on-going implementation efforts, including:

**Recycling** - Naperville is a strong proponent of recycling as evidenced not only by the volume but variety of materials recycled ranging from paper to scrap metal and refrigerants to motor oil.

**Leveraging Technology** - Maximizing use of available technologies helps to reduce staff time, fuel consumption, and resource demands in accordance with broader sustainability goals. Examples of these efforts include the NSGI, use of computerized mapping resources in inspection and planning efforts, and use of electronic systems to remotely monitor water systems and equipment.

**Systematic Fleet Downsizing** - On-going efforts across the City are focused on selecting the "right-size" vehicle for the task. This mentality is carried over into vehicle replacement purchasing recommendations.

**Fuel Conservation** – Since initiating fuel conservation policies, Naperville has saved approximately \$100,000 over peak consumption years. Annually, the City strives to reduce consumption levels by three percent.

**Promoting Transit** – As part of on-going efforts to promote transit use and provide options to commuters, during the reporting period the Park and Ride Agreement with St. Thomas Church was renewed. Additionally, the City meets monthly with PACE to discuss operations and make modifications based on ridership.

**Florescent Lighting** - During the reporting period, DPW continued efforts to replace fluorescent lighting from T-12 bulbs to T-6 bulbs that will require less energy. The benefits of fluorescent bulbs include efficiency, less expenditure, and higher quality lighting.