

DuPage County

Environmental Progress Report

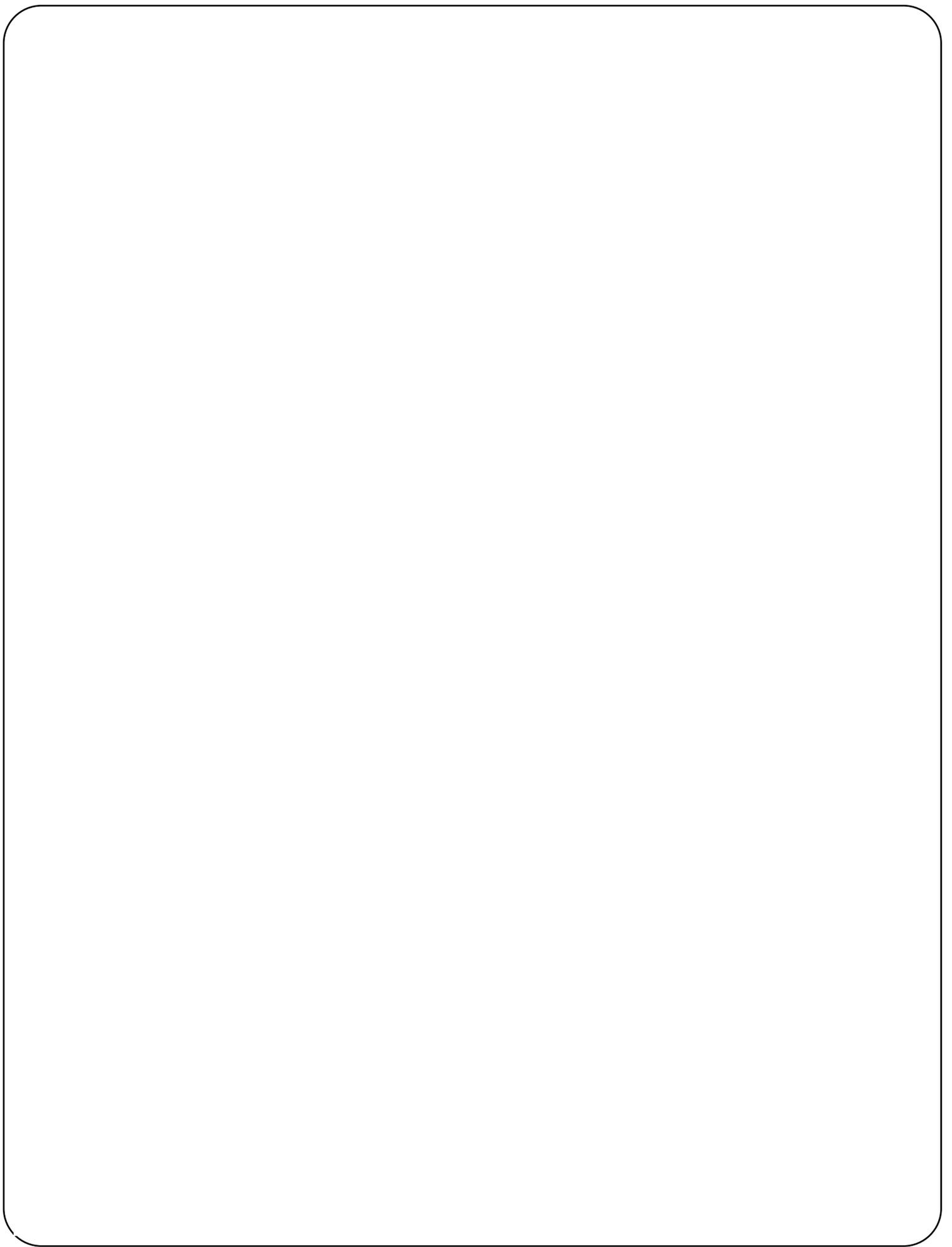
2011



Making DuPage a great place to live, work and raise a family.

Winner of the 2011 Illinois Governor's Sustainability Award

DuPage County Board Chairman Daniel J. Cronin
Environmental Committee Chairman Jeff Redick
Environmental Committee: Rita Gonzalez, Michael McMahon, Debra Olson
Tony Michelassi, Robert Larsen



INTRODUCTION

While DuPage County has been pursuing green initiatives for many decades, we reaffirmed our commitment to protecting the environment in 2008 with the adoption of the Environmental Responsibility & Conservation Policy. The goal of the Policy was to formalize DuPage County's commitment to act in an environmentally responsible manner in carrying out our duties and functions and to move forward in a sustainable fashion. This activity and many other programs are described in the following 2011 Environmental Progress Report.

DuPage County's experience as leader in environmental programming has improved the quality of life for people throughout DuPage County. The County's efforts have proven to be good for our environment but the programs have also been shown to provide valuable improvements in good government.

This report includes quantifiable measures of our success and documents our plan to navigate the path into the future. Included you will find activities that were included in the first edition Environmental Progress Report in 2005 and information on new programs that were undertaken between 2005 and 2011. New to this report is an economic element. Where applicable, the County has identified the initial investment and determined the payback for the project. At a time when we are all working to do more with less, our County has been progressive in the use of environmental programs to cut costs.

We are proud that on October 27, 2011, DuPage County was the first county in the State of Illinois to receive the Illinois Governor's Sustainability Award. This award recognizes DuPage County's leadership and achievements in saving water and energy; reducing waste; conserving resources; and being a sustainability mentor in the community.

Sincerely,

Daniel J. Cronin
Chairman
DuPage County Board

Jeff Redick
Chairman
DuPage County Environmental Committee

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HISTORICAL BACKGROUND

The following programs were included in the 1993 – 2005 Environmental Progress Report. Updates to applicable programs can be found under the appropriate category of this document.

1965 DuPage County Trail System Improvement Plan

1978 Open Space Corridors and Non-Motorized Transportation Planning*

1984 Regional Bikeway Plan*

1985 Sanitary Sewer Improvement Projects*

1987 Solid Waste Committee

1988 Stormwater Management Committee*

1988 Voluntary Buyout and Flood Control Projects*

1989 DuPage County Stormwater Management Plan*

1990 Environmental Education Program*

1990 Open Burning Ban*

1991 Intermediate Processing Facility

1993 Recycling Program On-Campus*

1993 Wetland Mitigation Program and Division of Environmental Concerns*

1996 One-day Household Hazardous Waste Collection Events

1996 DuPage County Natural Areas Study

1996 DuPage County Regional Bikeway Plan Update

1996 Cogeneration Plant Woodridge Greene Valley Wastewater Treatment Plant

1997 Illinois Construction and Demolition Site Recycling Guidebook &
Directory

1998 Transportation Coordination Initiative*

1999 We Reduce Program

2000 Water Quality Stakeholders Workgroup*

2000 Weatherization Program*

2001 Latex Paint Recycling Program*

2001 Appendix J DuPage County Stormwater Management Plan*

2002 DuPage Area Transit Plan*

2002 Lead Hazard Reduction *

2002 Native Landscape Ordinance (NLO) for Stormwater Basins*

2003 National Pollution Discharge Elimination System (NPDES)*

2004 Healthy Roads Initiative*

2004 Water Quality Education*

2005 Bus Rapid Transit Study*

2005 Stormwater Economic Redevelopment Zones (SERZ)*

2005 LED Traffic Signal Upgrade

2006 Transportation Coordinate Initiative Steering Committee

2006 Bicycle Parking Improvement Program

2009 RxBox Pharmaceutical Collections*

*Indicates ongoing program

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ENERGY

The County's energy conservation projects can be placed into two categories: Fuel, including gasoline and diesel; and electricity and natural gas. As noted below, the County has been pursuing efficient projects on both fronts. Most of these projects also have the benefit of providing a financial savings in addition to reducing energy consumption.

FUEL – TRAFFIC SIGNAL OPTIMIZATION

Fuel Savings: 289,226 gallons/year

Fuel Cost Savings: \$661,500/year

Capital Investment: \$452,301

Return on Investment: 0.7 years

Year Project Implemented: 2010

The County is responsible for the coordination of 320 traffic signals and 45 signal systems within the County's arterial street network. Starting in 2010, the County utilized Federal Energy Efficiency and Conservation Block Grant (EECBG) funding to start re-optimizing traffic signal system timing at 58 intersections on major arterial roadways and expressway interchanges. The investigation consists of traffic volume counts, progressive movement capacity calculations, software integration of daily/weekly/holiday traffic responsive programming, and before and after time delay studies.

When complete, the project is expected to save commuters nearly one-half million dollars annually in fuel costs. Commuters will not only save fuel, but the air quality will benefit due to reduced pollution and commute times are expected to be reduced a total of 2 million hours annually. Models also project an increase in productivity when signals are optimized.

Outlook: The project will be continuing into 2012.

FUEL – ALTERNATE FUEL VEHICLE POLICY

Fuel Savings: 28,475 gallons of diesel/year

Reduced CO₂ Emissions: 527,150.10 lbs/year

Investment: \$0

Year Project Implemented: 2007

DuPage County revised its Vehicle Policy to encourage the purchase and use of alternative fuel vehicles. It provided that the County pursue alternate bids for comparable vehicles and that the approving committee give preference when practicable. In addition, the County utilizes B-20 biodiesel for any vehicle or piece of equipment operating on that fuel. The County's fleet currently includes nineteen hybrids, two compressed natural gas, sixty-two flex fuel, one electric and 119 biodiesel vehicles. The County has also pursued the purchase of smaller engine vehicles to increase mpg.

Outlook: The County will continue to implement the policy and evaluate alternative fuel options regularly.

FUEL – TRAIL MAPPING SOFTWARE

Energy Savings: 512 gallons/year

Fuel Cost Savings: \$1,920/year

Capital Investment: \$56,000

Year Project Implemented: 2010

The County utilized Federal EECBG funding for the development of software to enable users to map a non-motorized route from point A to point B. In its first year, over 10,000 miles were mapped and assumed to have offset vehicle miles. The software provides a safer method of travel for pedestrians and cyclists. While the program is not shown as savings to the County, it is a fuel savings on the part of the users.

Outlook: The software has shown to be a valuable tool in the County's planning for non-motorized transportation.

ELECTRICITY – LIGHTING RETROFIT IN PARKING GARAGES AT THE COUNTY COMPLEX

Energy Savings: 677,375 kWh/year

Electricity Cost Savings: \$50,803/year

Capital Investment: \$537,298

Return on Investment: 10.5 years

Year Project Implemented: 2010

The County utilized Federal EECBG funding to replace the existing 150 watt high pressure sodium light fixtures in the parking garages with energy efficient 50 watt LED lighting. More than 900 lamps were replaced with the funding. The new fixtures have a 50,000 hour life and can be dimmed if deemed necessary. An additional benefit to the project is increased light diffusion and security in the garages.

Outlook: The next phase of making the garages more efficient is to investigate daylight harvesting to further reduce energy consumption.

ELECTRICITY – LIGHTING RETROFIT AT THE DUPAGE COUNTY JAIL

Energy Savings: 425,767 kWh/year

Electricity Cost Savings: \$21,000/year

Capital Investment: \$71,700

Return on Investment: 3.4 years

Year Project Implemented: 2010

The County utilized the Illinois Dept. of Commerce & Economic Opportunity's energy efficiency incentive program to retrofit the lighting at the jail. The existing T12 lamps were removed and replaced with the more energy efficient T8 lamps. The project included the replacement of 2,023 fixtures and 5,283 lamps. The County's investment was \$71,700 and DCEO \$47,000. The above return on investment was calculated using the investment of County funds and DCEO funds.

Outlook: The County is investigating water conservation potential at the jail.

ELECTRICITY – LIGHTING AT PUBLIC WORKS BUILDINGS

Energy Savings: 242,653 kWh/year

Electricity Cost Savings: \$18,198/year

Capital Investment: \$80,000

Return on Investment: 2.7 years

Year Project Implemented: 2011

DuPage County Department of Public Works implemented a facility wide lighting retrofit at the underground maintenance garage, Woodridge Greene Valley and Knollwood buildings. The retrofit included installation of compact fluorescent, tubular fluorescent, LED fixtures and exit signs. A total of 1056 fixtures were upgraded saving 55 kilowatts or 242,653 kilowatt-hours of electricity.

Outlook: The County will continue to investigate new technologies to save energy at the above buildings.

ELECTRICITY – ENERGY STAR ROOF

Energy Savings: 1,598 kWh/year

Electricity Cost Savings: \$3,100/year

Incremental Capital Investment: \$29,000

Return on Investment: 9 years

Year Project Implemented: 2010

In 2010, the County utilized Federal EECBG funding to replace the existing asphalt roof with an Energy Star rated white roof. The intent of the roof is to lower the temperature of the roof to reduce the energy demand when cooling the building. The new membrane also has a longer life expectancy and is expected to reduce the demand on the existing HVAC system. The roof was installed in four locations. Two ancillary covers above a stairwell and entrance, one above a pedestrian bridge and the roofing over the auditorium.

Outlook: The roof serves as an example to building owners on possible techniques that can be used to lower operations costs.

ELECTRICITY – EXIT SIGN REPLACEMENT AT CONVALESCENT CENTER

Energy Savings: 50,573 kWh/year

Electricity Cost Savings: \$3,973/year

Capital Investment: \$15,069

Return on Investment: 3.8 years

Year Project Implemented: 2011

DuPage County utilized Federal EECBG funding to replace 163 existing incandescent exit signs with energy efficient LED signs throughout the Convalescent Center. It was enabled the Center to standardize the signs for consistency and safety of the staff and residents. Due to the longer life span of LEDs, the Center will also see a savings in labor over time.

Outlook: The project was successful and the County will continue to seek out improvement opportunities at the Center.

ELECTRICITY – LIGHTING RETROFIT AT THE COUNTY HIGHWAY MAINTENANCE GARAGE

Energy Savings: 85,781 kWh/year

Electricity Cost Savings: \$6,004/year

Capital Investment: \$19,268

Return on Investment: 3.2 years

Year Project Implemented: 2011

DuPage County utilized Federal EECBG funding to replace less efficient lighting at the County's Highway Maintenance Garage. The County is replacing the 400-watt lighting fixtures with efficient 148-watt fixtures.

Outlook: The project is expected to show immediate electricity savings for the Division of Transportation.

ELECTRICITY – LIGHTING RETROFIT AT THE COUNTY CONVALESCENT CENTER

Energy Savings: 22,400 kWh/year

Electricity Cost Savings: \$1,700/year

Capital Investment: \$35,107

Return on Investment: 20.6 years

Year Project Implemented: 2011

DuPage County utilized Federal EECBG funding to replace incandescent lighting in the Convalescent Center's physical therapy and recreational rooms. The new fixtures were chosen due to their life span, maintenance level and light output.

Outlook: Although the County has updated most of the lighting in the Center, lighting technology is constantly developing and there will be room for improvement in the future.

ELECTRICITY – OCCUPANCY SENSOR INSTALLATION AND LIGHTING CONTROL SYSTEM AT THE COUNTY ADMINISTRATION BUILDING

Energy Savings: 151,840 kWh/year

Electricity Cost Savings: \$11,388/year

Capital Investment: \$171,530

Return on Investment: 15 years

Year Project Implemented: 2011

DuPage County utilized Federal EECBG funding to install occupancy sensors in the Administration building. The sensors allowed the County to turn off lighting that had previously remained on in the evenings when cleaning crews were working in the building. The new system will only illuminate occupied areas.

Outlook: The project will continue to be measured with anticipated savings well into the future.

ELECTRICITY – OCCUPANCY SENSOR INSTALLATION AT THE JUDICIAL OFFICE FACILITY

Energy Savings: 189,800 kWh/year

Electricity Cost Savings: \$14,235/year

Capital Investment: \$16,200

Return on Investment: 1.1 years

Year Project Implemented: 2008

DuPage County installed occupancy sensors in the main Judicial Office Facility. A total of 270 sensors were installed in the building. Lighting will turn off when areas are not occupied. Improvements were also made to make the HVAC system more efficient and reduce operating time.

Outlook: The project has proved to be beneficial in saving energy with a small capital investment and short return.

RECYCLING & MATERIALS CONSERVATION

The County has increased on-campus recycling and has assisted businesses and residents with recycling of multiple items. The County has also pursued projects that reduce the waste stream through source reduction & materials conservation.

MATERIALS CONSERVATION – PAYMENT CONSOLIDATION

Cost Savings: \$3,000 /year

Year Project Implemented: 2011

Investment: \$0

In 2011, the DuPage County Treasurer modified the issuance of reimbursement and flex spending checks to employees by adding the amounts to payroll checks in lieu of issuing a separate check. The improvement has allowed the County to save paper, printing charges, bank processing costs and labor.

Outlook: The project's success has inspired staff to continue to seek out other opportunities to reduce waste generation.

MATERIALS CONSERVATION – REUSABLE DISHWARE

Cost Savings: \$13,103.50 /year

Investment: \$12,690

Return on Investment: 0.9 years

Year Project Implemented: 2010

DuPage County utilized Federal Energy Efficiency and Conservation Block Grant funding to switch from disposable dishware to reusable dishware in an effort to save the energy used in manufacturing and the landfill space. The dishes were purchased for the Convalescent Center and resulted in ongoing savings at the Center. The project eliminated the purchase and disposal of 107,675 foam plates, 54,750 foam bowls, 136,875 foam cups, 109,500 plastic spoons, forks and knives annually. The project saves the County from purchasing costs of foam dishware and the expense of disposing it. The County also distributed reusable mugs to employees to use in the cafeterias for beverage purchases. This has also reduced the number of foam cups purchased and disposed.

Outlook: The project's success has inspired staff to continue to seek out other opportunities to reduce waste generated.

MATERIALS CONSERVATION – ELECTRONIC AGENDAS

Cost Savings: \$ 3,418.80 /year

Investment: \$0

Year Project Implemented: 2010

On April 13, 2010, the DuPage County Board switched to electronic copies of the meeting agendas. The paper copies resulted in the consumption of 660,000 pieces of paper a year or 31 trees per year. The committee and Board rooms were already wired with Wi-Fi and the Board members were already issued laptops so new capital was invested. There were minor labor expenses in working with the IT Department to manage the implementation, but the labor saved not making paper copies offset associate costs.

Outlook: The County continues to seek out opportunities to utilize electronic files. The IT Department will be launching the use of remote servers to reduce the number purchased and maintained by the County.

RECYCLING – COMMERCIAL RECYCLING PROGRAM

Cost Savings: \$79,765 annually in avoided landfill tipping fees

Investment: \$179,420 over 3 year period

Waste Diverted: 1,505 tons

Year Project Implemented: 2010

DuPage County utilized Federal EECBG funding to launch a Commercial Recycling Program that has resulted in 115 businesses starting recycling programs and 1,505 tons have been diverted from area landfills. Waste tons diverted represent a cost savings to area waste haulers of \$79,765 in tipping fees at landfills. The County partnered with businesses, municipalities and waste haulers in starting pilot recycling programs and awareness campaigns such as:

- Commercial Recycling Pilot Program and Contest with the Village of Westmont and the Westmont Chamber of Commerce that resulted in 41 businesses starting a workplace recycling program and brought recycling incentives to several hundred Westmont businesses.
- Apartment Recycling Pilot Program with the Village of Carol Stream that delivered recycling bins to more than 865 residents of three apartment complexes.
- Commercial Recycling Awareness Campaign with the Village of Lombard that resulted in 61 businesses starting a workplace recycling program and brought recycling incentives to several hundred Westmont businesses.
- Commercial Office Building Recycling Pilot Program that delivered 39 recycling bins to over 11 commercial office buildings in Lombard.
- Hotel Recycling and Organics Composting Initiative that delivered approximately 500 recycling bins to one major hotel in the area and launched a food scrap organics composting program in two large hotels in the County.
- There are ongoing recycling awareness campaigns and partnerships with chambers of commerce and municipalities around the County including Village of Lisle, City of Naperville, Village of Addison, City of Elmhurst, Village of Downers Grove, Village of Glen Ellyn and the City of West Chicago.

Outlook: Staff continues to seek additional opportunities to increase commercial recycling and reduce waste generation.

RECYCLING – ELECTRONICS RECYCLING PROGRAM

Cost Savings: \$31,800 annually in avoided landfill tipping fees

Investment: \$0

Year Project Implemented: 2008

DuPage County has partnered with governmental entities and non-profits to collect electronics from residents and businesses for recycling. The program is a zero cost program to the County, partners or participants and in 2011 the recycler began making payments to partners. Since the start of the program in 2008, the County has recycled and diverted more than 2 million pounds of electronics from landfills. There are 10 regular drop-off locations with additional seasonal or special collections throughout the year.

Outlook: Starting January 1, 2012, most electronics will be banned from a landfill which makes finding a recycling outlet more crucial.

RECYCLING – ENHANCED COMPLEX RECYCLING PROGRAM

Savings: 59.5 tons/year recycled

Investment: \$14,822

Year Project Implemented: 2009

In 2009, the County received funding from Illinois' Department of Commerce and Economic Opportunity to purchase recycling bins for the complex. A site review was completed and the County determined that additional bins were necessary to increase recycling at the complex including in Convalescent Center rooms and at the Lisle campus for the Work Force Development Division staff. The County purchased 700 recycling bins and has increased recycling 59.5 tons. Employees recycled more than 1,000 gym shoes, 35 boxes of plastic caps and 9,500 pounds of electronics.

Outlook: The County continues to review and pursue recycling opportunities on the campus.

RECYCLING – GROUND RUBBER TIRE ROAD PAVING

Savings: 22,000 used/waste rubber tires

Year Project Implemented: 2008

DuPage County piloted the use of ground tire rubber (GRT) asphalt as a substitute for polymer-modified asphalt cement on an Army Trail Road resurfacing project. The GRT improves the performance of the road by increasing its resistance to oxidation and reducing rutting. The project resulted in the reuse of 2,000 tires per lane mile.

Outlook: The County will continue to assess the wear and longevity of the surfaces paved with GTR. The County is also reviewing other opportunities to reuse waste products.

WATER QUALITY & STORMWATER

The County strives protect and enhance the quality, quantity and availability of surface and groundwater resources. These programs vary from providing a stormwater benefit to water quality improvement.

STORMWATER–VEGETATED ROOF

Incremental Capital Cost: \$139,487

Energy Savings: 791 kWh/year

Year Project Implemented: 2011

With funding from the U.S. Department of Energy, DuPage County converted the blacktop roof over the cafeteria to a vegetative roof. The project allows the County to store up to 90% of the precipitation that falls on it in the summer months and up to 40% in the winter months. An added benefit is that the roof filters the storm water and moderates the temperature of the water it also delays the time at which the runoff occurs resulting in decreased stress on storm systems during peak flow. The roof will also provide some energy savings and is expected to have an increased longevity.

Outlook: The County will be using the roof as a model for educating the public on the components, benefits and aesthetics of a vegetated roof.

STORMWATER–RAIN BARRELS FOR SCHOOLS

Investment: \$4,830

Year Project Implemented: 2008

In 2008, DuPage County Stormwater Management developed a program to purchase rain barrels for participating public schools. On behalf of the County, environmental educator SCARCE went to the schools to teach the kids the benefits of rain barrels, and also how to paint them. The project intended to engage kids in stormwater management and water conservation. Numerous public elementary schools and one high school within DuPage County painted designs on their schools' rain barrels. 68 schools participated in the program and 69 rain barrels were painted and displayed or installed.

Outlook: The program will continue with new schools participating each year.

WATER QUALITY–RX BOX PROGRAM

Investment: \$550/partner

Savings: 5 tons of unwanted/unused medicine

Year Project Implemented: 2008

DuPage County partnered with the DuPage Health Department, the Illinois Environmental Protection Agency and 13 police departments collected unwanted/unused medication. Each partner invested in a collection receptacle which is the cost reflected above. The Illinois EPA provides for the disposal of medications.

The project has provided the additional benefit of providing for safe disposal and an outlet for residents to protect themselves and families from the unlawful or improper use of the medications. The environmental benefit is shown under water quality as most medicines are disposed improperly in toilets and sinks. Wastewater treatment plants are not currently equipped to remove the medicine from the water so the discharge can still contain trace amounts of medicines.

Outlook: A new State law has provided a permanent funding source for collections. It is anticipated that many new partners can be added with the additional support.

WATER QUALITY– ROADWAY CHLORIDE REDUCTION

Investment: \$38,000/year

Salt Cost Savings: \$503,316

Salt Saved: 8,100 tons/year

Year Project Implemented: 2008

DuPage County Division of Transportation is responsible for 950 road miles throughout the County. In 2008, the Division began using Geomelt, Super Mix 217 Geomelt K and Ecosalt to augment the effectiveness of salt used to maintain roads in the winter. The salt stock is treated with the Geomelt, a sugar beet based organic accelerator. The Super Mix 217 is a liquid blended product used as a replacement for liquid calcium chloride. The Geomelt K is a non-chloride liquid used in the parking garages that eliminates concrete and metal corrosion and Ecosalt is less corrosive than traditional salt. The use of these alternative products allowed the use of traditional salt to be reduced by one-third with the additional benefit of a financial savings as well.

In 2011, DuPage County Division of Transportation received the inaugural Low Salt Community Award from The Conservation Foundation for these practices. Chlorides, mainly from winter deicing compounds such as sodium chloride or common salt, have a major impact of local rivers limiting both fish and aquatic insect life. In addition to the environmental impacts, winter salts corrode transportation infrastructure and vehicles. The reductions were made while maintaining or improving public safety level.

Outlook: As new products are developed, the Division is testing them on the campus to determine their viability for use on the roadway system.

