



**A workbook of environmental actions
for local officials**



Introduction

The Greenest Region Compact is an initiative of the Metropolitan Mayors Caucus to voluntarily improve the region's air, water and land, reduce greenhouse gases, minimize waste, and reduce energy consumption. Green is not just the concept of beautifying your community but is also necessary to maintain the economic competitive advantage of our region.

Individual preferences play a crucial role in combating the negative impacts of nearly 200 years of industrialization. Stopping further degradation of our environment can not be accomplished through international treaties and protocols alone. Minimizing the impacts of our actions will take behavioral change by all of us, particularly in the individual choices we make on everything from whether and how much we recycle, the amount of energy we consume, and our mode of transportation.

In order for environmentally-conscious behavior to become common practice our citizens need to understand the environmental impacts of their daily actions and see value in changing their behavior in order to protect the environment. Local government is the local place to start educating citizens about environmentally friendly choices. Municipalities played a vital part in the campaign to reduce air pollution. Since 1999, communities in the Chicago metropolitan region have participated in Clean Air Counts – an innovative, non-regulatory approach to reducing smog-causing emissions.

Local governments can demonstrate leadership around a broad array of environmental practices in two ways. Governments can shape behavior through education and discussion. And, more importantly, governments can lead the way through action. The Greenest Region Compact challenges local governments to take action to modify their own operations and practices, and to provide the tools and resources to enable residents to adapt their actions as well.

The Compact outlines a number of cost-effective environmental sustainability measures that enhance health and safety, reduce the consumption of energy and fossil fuels, conserve water, and reduce hazardous and solid waste and air pollution emissions.

The Greenest Region Compact workbook is designed to provide guidance to municipal and elected officials in Illinois who are interested in taking steps to help their citizens make the right choices for the environment.

This workbook takes issues of importance around the globe and highlights programs and case studies that address them right here in Illinois communities. The examples of green initiatives implemented are all taken from Caucus member municipalities. No matter the size of a community, the workbook's menu of programs and projects has something that will work for each community. Strategies highlighted are economically viable to implement – they don't require significant additional staff time or increased municipal revenues.

The Caucus's Environmental Committee selected twelve strategies as the foundation of our Greenest Region Compact. This list of recommended strategies is not designed to be all-inclusive. We anticipate the list of options to grow as participation in the Compact grows regionally. Rather, these twelve strategies were selected for their ease of implementation and the ability of all communities, irrespective of size, to institute the strategies listed below.

GREENEST REGION COMPACT STRATEGIES

PRIORITY

- Residential CFL Light Bulb Distribution
- Residential Water Conservation Education and Regulations
- E-Waste Recycling

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- Diesel Retrofits
- Transit Education
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ENERGY

- LED Traffic Signals
- Municipal Green Power Purchase

LAND

- Tree Planting Programs

WASTE

- Residential Curbside Recycling
- Construction and Demolition Debris Recycling
- Paint Recycling

WATER

- Residential Rain Barrel Program
- Residential Sprinkler Regulations
- Stormwater Best Management Practices

Over the years, the Metropolitan Mayors Caucus and its member municipalities have risen to the call for action in the fight against air pollution. Now is the time for meaningful actions to improve our overall environment. Our challenge is to broaden participation in environmental initiatives across all sectors and amongst all our members.



PRIORITY STRATEGIES

Residential CFL Light Bulb Distribution

Recommended Action: Participate in the Northern Illinois Energy Project's Residential Lighting Program

Description:

In partnership with the Midwest Energy Efficiency Alliance, the Residential Lighting Program of the Northern Illinois Energy Project (NIEP) was developed to increase the use of compact fluorescent light bulbs (CFLs) as well as to raise awareness that these light bulbs use less energy and help cut utility costs for Illinois residents. The NIEP program is working with Retail and Manufacturer partners to provide discounted bulbs, while supplies last, in local neighborhood stores and with participating municipalities to increase access to these energy and cost-saving products.

Municipalities interested in providing CFL light bulbs to their residents must submit a proposal to NIEP detailing the amount of matching funds the community is willing to commit, how the bulbs will be distributed, where the bulbs will be shipped, and where bulbs will be stored.

Municipal Example:

In March, 2007, the City of Chicago announced it was giving away 500,000 energy-efficient light bulbs. Bulbs are available at locations around the City including the Chicago Department of Environment and alderman's offices. Bulbs are free to residents with a limit of 2 per household.

The City made arrangement for old compact fluorescent bulbs to be recycled at its Household Chemical and Computer Recycling Center.

Chicago committed \$100,000 to purchase bulbs with NIEP donating \$300,000.

Where Can I Learn More?

Northern Illinois Energy Project: www.citizensutilityboard.org/niep_rlp.html

Cost:

NIEP estimates that the bulbs cost \$1.70/each.

Funding Available:

Municipalities participating in the Residential Lighting Program typically can receive a 3:1 matching grant from NIEP to purchase bulbs.

Residential Water Conservation Education and Regulations

Recommended Action: Through a combination of education and local regulation, promote residential water conservation practices.

Description:

According to the US EPA, in the past 30 years the US population has grown 52% while total water consumption has more than tripled. The Chicago region alone uses 2.4 billion gallons of water daily. Even in a water-rich region, such as ours, metropolitan growth is out-pacing water infrastructure and the ability to replenish our aquifers, lakes, and rivers. Withdrawal of water from Lake Michigan is set by a US Supreme Court decree. This allocation is almost fully used and it is unlikely to be increased. Additionally, the deep aquifer system is reaching its limit for sustainability. Future increases in water demand will have to be met through groundwater sources or inland water sources, making future water availability dependent upon precipitation and temperature.

Whether your community gets its water from Lake Michigan or from an aquifer, we all need to encourage water conservation among our residents. Conserving water is relatively simple through a combination of education and regulations and relies on both permanent water conservation measures and temporary water restrictions. The Chicago Metropolitan Agency for Planning (CMAP) has established a Water Supply Planning Group which has convened regional stakeholders to evaluate, plan, and mitigate growing water supply issues in the region.

Municipalities can promote water conservation through some very simple actions, such as the following:

- Publish on your municipal website, or in hard copy, tips on how to save water during household chores or with simple lifestyle changes, such as only running a wash machine for full loads, using a broom instead of hose to clean driveways and sidewalks or turning off the water when brushing teeth.
- Partner with schools, park districts, and local libraries to reach your youngest residents and teach them about the need to conserve water. Consider hosting poster or essay contests to promote efficient water-usage habits.
- Water meters are an important conservation tool. All housing units should be equipped with water meters to allow residents to monitor usage and check for leaks.
- Financial incentives often work best when effecting behavioral changes; charge your residents for actual usage of water in their household.
- Demonstrate your municipality's commitment by replacing and repairing old leaking water mains; the City of Chicago cut water consumption by nearly 20% through its water main capital program.
- Instead of allowing continuous flow, install on/off buttons on public drinking fountains.

- During droughts, landscape watering can use up to three-quarters of a household's total water usage. Xeriscape is a set of principles for planning landscape watering efficiently. These principles can be used in all climates, not just arid locales. Distribute recommended watering and landscaping guidelines to residents and local nurseries to encourage efficient irrigation, practical turf areas, soil improvement, and appropriate plants for the region.
- Because many residents will continue to have some of their landscape as turf grass, enact guidelines on when sprinkling and lawn watering is allowed.

Municipal officials have an opportunity to take the lead of water conservation through their planning process. Systems like low-flow toilets and showerheads and higher efficient clothes and dish washers can be encouraged in developments through incentives such as expedited permits.

Municipalities frequently enact regulation to decrease demand on their water system during times of drought to enable enough water to be left in storage reservoirs to fight fires when demand for water is high. Continuing to keep sprinkler and water regulations in place throughout the year not only gives added protection against fires but evens out demand on municipal water systems, keeps operating costs down, and delays costly infrastructure additions such as wells, storage, and transmission lines.

Where Can I Learn More?

Water – Use It Wisely Campaign: www.wateruseitwisely.com

Chicago Metropolitan Agency for Planning: www.chicagoareaplanning.org/watersupply

City of Chicago Department of Water Management: www.cityofchicago.org

E-Waste Recycling

Recommended Action: Enact an E-waste Recycling Ordinance in your community

Description:

The objective of an E-Waste Recycling ordinance is to establish a program for consumers and the public to return, recycle, and ensure the safe and environmentally sound disposal of electronic equipment. Management of this wastestream is becoming a challenge for local governments.

Properly disposing of old and/or obsolete electronic equipment isn't just environmentally responsible, it is fast becoming the law in many communities around the country. California passed the Electronic Waste Recycling Act of 2003, which includes, among other mandates, consumers pay a \$6-\$10 fee at time of purchase of certain electronics to cover the cost of proper disposal.

According to the National Safety Council, 500 million personal computers were buried in US landfills by 2007. Plastics in computer-related scrap decompose daily in landfills while contaminating our ground water. Old electronics contain hazardous amounts of toxic heavy metals including lead, cadmium, and mercury. When these products reach the end of their useful lives or become obsolete, some are considered hazardous waste. In general, hazardous waste may not be discarded in the regular trash. Instead, it must be sent to a facility that has a permit for treatment (including recycling), storage, or disposal.

Disposal techniques vary widely because the equipment includes materials which are valuable and recyclable as well as toxic. While modern technologies allow for nearly hazard-free recycling of e-waste, precautions must be taken to control harmful emissions and toxins from cause detrimental impacts on health and the environment.

Be sure to contract with a reputable recycler to ensure that data and any identifiers on equipment are properly deleted.

Consumers and recyclers can sell used electronic equipment or donate it to schools or non-profit organizations for its original intended purpose. However, not all used equipment is welcomed by such organizations. As a result, older and obsolete equipment quickly winds up in a landfill if not disposed of properly.

Municipal Example:

In 2004, Oak Park received a \$10,000 grant from Dell, Inc. to fund an electronics collection event. Evidence of the enormity of e-waste in our communities became quickly apparent when Oak Park collected 98,000 pounds of e-waste in one day. The amount of equipment exceeded funding available to continue with the program.

The West Cook County Solid Waste Agency works with area municipalities to collect and dispose of both hazardous waste and electronics. The agency serves 36 communities in West Cook County and operates special events throughout the year to collect these items. In addition, the Agency holds annual electronic collection days in municipalities, such as the Village of Oak Park. Economics determine what services are available and how often. One Household Hazardous Waste collection day can cost \$50,000.

The Solid Waste Agency of Lake County also provides a list of resources for electronic recycling, including:

- Companies providing electronic recycling reuse services
- Home pick-up computer recycling programs
- Cell phone donation/recycling programs
- Working computer donation programs
- Fundraising programs for computer accessories

Where Can I Learn More?

Solid Waste Agency of Lake County: www.co.lake.il.us/swalco/dosposal/electronics.asp#L04

California Integrated Waste Management Board, Electronic Product Management page:
<http://www.ciwmb.ca.gov/Electronics/default.htm>

Town of Westerly E-Waste Recycling Ordinance: <http://w-i-n.ws/Ordinance.htm>

Nevada Division of Environmental Protection Solid Waste Fact Sheet: <http://ndep.nv.gov/bwm/Docs/Ewaste.pdf>

Compaq and Hewlett-Packard E-waste recycling: www.hp.com/hpinfo/globalcitizenship/environment/recycle/index.html

IBM E-waste recycling: www.ibm.com/ibm/environment/products/prp.shtml

Dell E-waste recycling: www.dell.com/content/topics/global.aspx/corp/environment/en/recycling?c=us&cs=04&l=en&s=bsd



AIR STRATEGIES

Diesel Retrofits

Recommended Action: Retrofit municipal diesel engines by installing pollution control devices

Description:

Pollution emitted by diesel engines contributed greatly to our nation's air quality problems. Even with more stringent heavy-duty highway engine standards, existing trucks and heavy equipment will continue to emit large amounts of nitrogen oxides and particulate matter. Using pollution control devices such as a diesel oxidation catalyst (DOC) or a diesel particulate matter filter (DPF) are ways to upgrade, or retrofit, existing engines to pollute less.

A DOC is a device that uses a chemical process to break down pollutants in the exhaust stream into less harmful components. Specifically, it is a porous ceramic honeycomb-like structure that is coated with a material that catalyzes a chemical reaction to reduce pollution. DOCs reduce emissions of particulate matter by at least 20% and hydrocarbons by 50%. Much like a catalytic converter on a car, once a DOC is installed, it rarely requires maintenance. A DOC can be used on any engine. Most DOCs come with a 100,000 mile warranty, and can last up to 15 years. It takes approximately 3 hours to install a DOC.

A DPF is a ceramic device that collects the particulate matter in the exhaust stream; the high temperature of the exhaust heats the ceramic structure and allows the particles inside to break down, or oxidize, into less harmful components. DPFs reduce emissions of particulate matter and hydrocarbons by 60% to 90%. DPFs must be used with ultra-low sulfur diesel fuel. Use of regular diesel fuel in a DPF equipped vehicle could clog the filter and lead to exhaust backpressure increases. DPFs work best on engines built after 1995. Therefore, knowing the age and type of your engines as well as the exhaust temperature is an important part of a DPF retrofit. Manufacturers recommend that the devices be cleaned about every 100,000 miles. Most DPFs come with a 100,000 mile warranty, and can last up to 15 years.

Representatives for engine manufacturers have been promoting, and implementing, diesel retrofits in the region for many years. The easiest way to begin a diesel retrofit program is to contact the service rep your fleet department normally works with. Representatives will come out to examine your fleet, make recommendations, and provide cost estimates. Typically, the engine and/or parts manufacturer will do the installation, thereby ensuring that the installation was completed properly and your warranty would be void.

Municipal Examples:

Where Can I Learn More?

Voluntary Diesel Retrofit Program: www.epa.gov/otaq/retrofit

Transit Education Programs

Recommended Action: Raise awareness of public transit options by displaying information about options and promoting these choices to citizens, employees, and visitors.

Description: Local government can play a vital role in raising awareness of transit services. Anecdotal accounts from many residents and employees around the region indicate that more people would take transit if they understood the services available to them and felt more familiar (and less intimidated by) with the system. Since Village or City Hall is a first stop that many residents and employers make when relocating to a new community, municipalities can achieve significant results from an effective education program. Local governments should develop a message that promotes all forms of non-automotive transportation – rail, bus, van pool, carpool, bicycling or walking. They should also raise awareness of local transit facilities, such as rail stations, bus stops, transit hubs, park-and-ride facilities, and bike racks. Here are some tips for making this happen in your community:

Display information about rail, bus, and vanpool options:

- Install signage around your community directing riders to the rail station.
- Maintain current service information on your municipal website. Provide links to RTA, Pace, and Metra.
- Install kiosks at Village/City Hall, Library, schools, community events, recreation centers that contain schedule and route information.
- Publish regular blurbs in your newsletter to promote the use of transit. Include information about changes in service, where and how to access service, and why it's a cost effective and environmentally friendly choice. Interview riders who switched to transit and are happy with their choice.
- Create a brochure that gives an overview of transit service and provide to large employers, churches, grocery stores, senior homes, social service agencies, hospitals/doctors clinics, and theaters for distribution.
- Learn about your community's transit resources through the Regional Transportation Asset Management System (RTAMS). This helpful database provides planning and financial information on the transportation system in the northeastern Illinois region. RTAMS also allows users to access transit and tollway data through an interactive map. Users can search for information by political jurisdiction.

Promote transit choices:

- Provide incentives for municipal employees to choose transit by participating in RTA commuter programs.
- Meet with large employers to schedule Transit Awareness Events, educate them about Commuter Choice Tax Benefits, and to conduct an assessment of their employees commuting patterns.

- Work with new residential and commercial developers to inform them of existing transit services, ensure that plans incorporate transit- and pedestrian- friendly features, and encourage them to include transit information in their real estate and marketing brochures.
- Form a volunteer public transit commission to help promote transit and to provide a link between your community and the service boards.
- Meet with transit providers regularly to affirm the value of transit services in your community, ensure that route and schedule information is current, and to give feedback on the transit services provided.

Municipal Example:

The City of Wheaton maintains a website that highlights Pace and Metra schedules, new transit service, senior transportation programs, as well as bicycle and pedestrian access to the Illinois Prairie Path.

Over the last several decades, the City of Naperville has experienced tremendous population growth. This growth has brought numerous opportunities and challenges to the city's transportation system. The City developed a Transportation Options brochure (<http://www.naperville.il.us/emplibrary/commuteroptions.pdf>) to introduce new residents to the different types of transportation options that are offered in the City.

The Village of Downers Grove formed a Transportation Advisory Commission to review and evaluate matters pertaining to how people and materials are transported within the Village, between the Village and adjoining municipalities, and throughout the northeastern Illinois region. It covers commuter matters, the Downers Grove bus system, and the municipal parking lots and parking deck.

Where Can I Learn More?

- City of Naperville Website: http://www.naperville.il.us/dynamic_content.aspx?id=1537
- Village of Downers Grove Website: <http://www.downers.us/page/section/24>
- City of Wheaton Website : <http://www.wheaton.il.us/Community/Transporta/index.htm>
- RTA Trip Planner: <http://tripsweb.rtachicago.com/>
- Metra Website: <http://metrarail.com/>
- Pace Website: http://www.pacebus.com/sub/vanpool/commuter_choice.asp
- RTAMS: <http://www.rtams.org/ui/homepage.asp>
- City of Naperville Transportation Options www.naperville.il.us/emplibrary/commuteroptions.pdf

Bus Shelters and Bike Racks

Recommended Action: Build bus shelters and install bike racks throughout your community to encourage non-automotive travel.

Description:

By making improvements to their transit infrastructure, local governments can have a significant influence over the use of public transportation. For many of this region's communities, public transportation means bus transportation. Bus shelters provide clearly identifiable locations of bus stops will affording passenger protection, comfort, and safety. Additionally, many improvements can be made to bus stops to improve their user friendliness, such as providing route maps, schedules, and seating or leaning rails.

Communities interested in installing bus shelters are encouraged to work with Pace Bus and/or the CTA at the earliest stages of planning a shelter. The Service Boards have traffic engineers and planners to assist municipalities in siting bus shelters where they will be most beneficial to the riding public.

To minimize the cost to install a shelter, when designing and implementing a roadway or sidewalk improvement project, municipalities should include shelter footings at appropriate locations.

While public transportation probably offers the greatest opportunity to reduce vehicle miles traveled and emissions associated with car travel, other forms of transportation should also be encouraged in the region. Many provisions can be made to facilitate bike travel, such installing bike racks throughout your community, especially near retail areas. Bicycling can also be encouraged as a commuter option through facility enhancements like providing showers, changing rooms, and bike storage.

Municipal Example:

Currently Elk Grove Village maintains 25 bus shelters within the Elk Grove Industrial Park. The Village recently approved a \$325,000 project to add an additional eleven bus shelters to cover all major stops in the area along Higgins Road and Devon Avenue.

The total cost to the municipality is \$97,000 with more than \$227,000 covered by federal funding. The local match is provided from the Village's Industrial Commercial Revitalization Fund.

Where Can I Learn More?

Pace Bus Adopt-A-Shelter Program (847) 228-2465 or www.pacebus.com/sub/programs/adopt_a_shelter.asp

Both Pace Bus and CTA have ongoing bus shelter programs where the service boards will install shelters in a community at no cost. However, funding for these programs is limited.



ENERGY STRATEGIES

LED Traffic Signals

Recommended Action: Reduce energy consumption by changing out incandescent traffic signal bulbs to LEDs

Description:

By using light emitting diodes (LED) technology, municipalities have a way to reduce energy consumption and conserve fossil fuels by replacing old incandescent light bulbs with LEDs in traffic signals. There are about 260,000 intersections with traffic signals in the United States. It has been estimated that if all these intersections used LEDs, over three billion kilowatt hours of electricity could be saved yearly.

LEDs are much more energy efficient than their incandescent counterparts for several reasons. LEDs produce uniform light dispersion and light output is dispersed evenly over the lens which makes them brighter than incandescent lamps. LEDs are very energy efficient producing up to 90% light output with very little heat while incandescent bulbs use up to 90% of their energy generating heat. Incandescent lamps only produce white light which must be filtered for traffic signal use, and this leads to additional lost energy. LEDs produce colored light that doesn't need to be filtered so none of the energy is "wasted."

In addition to providing energy savings, LEDs last longer. The typical LED will last from five to ten years, while an incandescent bulb will need to be replaced annually. LEDs also focus light better, making the traffic signal easier to see for oncoming traffic.

Municipal Example:

The Village of Maywood completed LED traffic signal change-outs at five intersections. Retrofits included switching out 8" diameter signals for 12" diameter and/or replacing the face on existing 12" diameter signals. Prior to the retrofit, the Village used 17.93 kilowatts of electricity on the signals. Savings are estimated at 15.89 kilowatts and \$6,394 annually in electricity with \$1,000 in labor savings per intersection as well. The Village estimates that the new bulbs will last between 10 – 22 years.

The Village of Northbrook retrofitted ten of 49 signalized intersections within its community. Retrofits included converting incandescent light fixtures to LED fixtures. Each signal averaged \$3,000 to retrofit.

Where Can I Learn More?

Indiana LED Adoption Study Project: <http://www.nd.edu/~leds/index.htm>

Cost:

\$3,500 to \$5,000 per light, including labor.

Municipal Green Power Purchase

Recommended Action: Commit to annually purchasing renewable energy or renewable energy certificates

Description:

A Renewable Energy Certificate (REC) is an optional utility service that allows customers an opportunity to support a greater level of utility company investment in renewable energy technologies. Participating customers pay a premium on their electric bills to cover the incremental cost of the additional renewable energy. To date, more than 600 utilities, including investor-owned, municipal utilities, and cooperatives, offer a renewable product. While renewable energy is generated using renewable energy resources and is delivered through the utility grid, RECs represent the environmental, social, and other positive attributes of power generated by renewable resources.

The premium charged through the purchase of a REC represents the real cost differential between conventionally generated electricity and the higher cost of renewable energy, typically wind-generated electricity. The premium dollars go back to the wind farm to help them operate cost effectively. In all cases, the dollars are matched to specific supply and tracked by the public service commission. Purchasers are paying for real energy production. The premium pays for a specified number of kWh of renewable generation to be added to the grid supply.

Municipal Example:

The Village of Northbrook decided to lead by example by committing to annually purchase 4,500,000 kilowatt hours of Illinois Wind Renewable Energy Certificates. Northbrook contracted with Community Energy to purchase credits. The purchase of these credits will provide enough energy to run Northbrook's water filtration and pumping operations which treat and supply over 2.2 billion gallons of water a year to the community.

The wind farms are located about 100 miles southwest of Chicago in Princeton, Paw Paw, and the Mendota area. The direct impact on Northbrook's residents equals 3.5 cents per thousand gallons of water. This is equivalent of \$5/year for the average residential customer.

Where Can I Learn More?

Community Energy: <http://www.newwindenergy.com/>

U.S. Department of Energy Green Power Markets: <http://www.eere.energy.gov/greenpower/markets/certificates.shtml?page=1>



LAND STRATEGIES

Tree Planting Programs

Recommended Action: Implement a municipal tree planting ordinance to establish, and maintain, maximum tree cover.

Description:

Urban forests serve a wide variety of functions that promote the health, safety, and general welfare of residents, including conserving energy, improving local air quality, reducing noise pollution, providing natural habitat for birds, small mammals, and other wildlife, and increasing real property values. All of these benefits increase as canopy cover increases.

Possible tree program ordinance goals include:

- Establish and maintain maximum tree cover
- Maintain trees in a healthy condition through good cultural practices
- Establish and maintain an optimal level of age and species diversity
- Promote conservation of tree resources
- Select, situate, and maintain street trees appropriately to maximize benefits and minimize hazard, nuisance, hardscape damage, and maintenance costs
- Centralize tree management under a staff member with necessary expertise
- Promote efficient and cost-effective management of the urban forest
- Forest community support for the local urban forestry program and encourage good tree management on privately-owned properties

An easy way to develop a municipal tree planting program is to participate in the Tree City USA program. The National Arbor Day Foundation and the National Association of State Foresters developed the Tree City USA program to encourage urban tree planting. To qualify for Tree City USA, a town or city must meet four standards: designate a tree board or department as the entity legally responsible for the care and management of the trees; enact a tree care ordinance; develop a community forestry program with an annual budget of at least \$2 per capita; and, hold an annual Arbor Day observance and proclamation. Illinois ranks second in the nation for the number of communities participating in the Tree City USA program.

In addition, municipalities should encourage residents to plant trees to either replace previously existing trees or just beautify their area. Some communities offer special discounted pricing or rebates to residents who plant a tree. To ensure that the trees planted are consistent with the public welfare and safety, an ordinance regulating planting, trimming and tree removal as well as permits for digging or trenching activities is recommended. A link to a sample ordinance enacted by the Town of Normal, Illinois is listed below.

Municipal Example:

Numerous communities throughout the Chicago region participate in the Tree City USA program. For example, the City of Park Ridge has been a Tree City USA community for 23 years and was a recipient of a Tree City USA Growth Award in 2007 for demonstrating progress in its community forestry program including providing information to residents to preserve public and private trees during construction.

The following communities received Tree City USA designation in the past five years:

Riverside	Broadview	Morton Grove
Wood Dale	Lake Barrington	Riverdale
Lake In The Hills	Waukegan	South Holland
Park Forest	Forrest	
South Elgin	Lakewood	

Where Can I Learn More?

Tree City USA Program: call (402) 474-5655 or email [treecity @ arborday.org](mailto:treecity@arborday.org)

Park Ridge Residential Tree Preservation Program: www.parkridge.us/residents/tree-pres.asp

Normal, Illinois Residential Tree Planting Program: <http://www.normal.org/gov/ParksAndRec/TreePlantingProgram.asp> and ordinance for trees and shrubs planted on town property: http://www.normal.org/Code/08_07.asp



WASTE STRATEGIES

Residential Curbside Recycling

Recommended Action: Implement a curbside recycling program for your residents.

Description:

There are four ways to recycle: drop-off recycling centers, curbside recycling; buy-back centers; deposit/refund centers. Consumer participation is the key to any successful recycling program. Obviously the more convenient the program is to the consumer, the higher the participation level.

Understanding what motivates people to recycle and what discourages them from doing so is the first step in increasing participation. The following factors are seen to contribute to an increase in participation levels:

- **Perceived effectiveness of recycling** – The more that a recycling program is seen as effective, the more people will participate in the program.
- **Concern about the environment** – People who have a greater awareness about environmental concerns are more likely to recycle.
- **Social pressure** – People are motivated to recycle by actual pressure for family and friends. Implementing a recycling education campaign in grade schools is a good way to influence family behavior to recycle.
- **Financial motive** – Short-term incentives do not change behavior. However, “pay-as-you-throw” programs, where residents pay for waste collection based on actual amounts for garbage they generate, are extremely effective motivators.

The two key barriers to recycling: **INCONVENIENCE** and **LACK OF KNOWLEDGE**.

Municipalities will often devote significant resources to develop and distribute information on how to and what to recycle. Yet, many residents still don't recycle because of a perceived burden to preparing recyclables. Recycling information can often be communicated more effectively than it is, and providing information alone isn't enough to change behavior. Effective distribution of information needs to be combined with incentives and fostering an expectation that recycling is the norm.

Unfortunately, the costs of recycling are perceived to be greater than revenues generated from selling recovered materials and savings from avoided garbage collection and disposal costs. Yet these simple analyses do not take into account environmental and sustainability benefits of recycling. Research by the University of California – Berkeley shows that curbside collection substantially reduces global warming potential of waste management compared with garage collection and disposal. Additionally, the costs of curbside recycling tend to be lower when the amount collected per eligible household is higher.

A well thought-out curbside recycling program coupled with an education campaign will provide the greatest participation level for a community.

Municipal Example:

The City of Joliet has a curb-side recycling program that serves all single-family attached and detached dwellings, and multi-family buildings up to four units on a weekly basis. The City provides an 18-gallob blue bin for recycled products and accepts cardboard boxes for overflow items. The City also has two recycling drop-off centers and hired a part-time recycling educator whose curriculum is in all Joliet public and private grade schools.

The City of Joliet provides the following easy steps to educate residents on how to participate in Refuse, Recycling, and Yard Waste Programs:

Follow these simple instructions in preparing your materials for recycling.
NEWSPAPERS, NEWSPRINT, and MIXED PAPER PRODUCTS STEP

Step #1

Various types of low grade mixed papers are acceptable, including:

CARDBOARD BOXES - We request flattened and cut down to 2 foot in diameter or less.

CHIPBOARD BOXES - cereal boxes, shoe boxes, paper tubes, soda/beer cartons.

BROWN PAPER GROCERY BAGS

PHONE BOOKS and MAGAZINES

MIXED HOUSEHOLD PAPERS Including used mail.

NOTE: On windy days, you can place paper products in a brown kraft bag to reduce litter.

Step #2

CONTAINERS AND OTHER MATERIALS

A variety of different types of containers will all be accepted for recycling, including:

GLASS JARS & BOTTLES - Food and beverage containers - clear, green, blue, brown. Does NOT include... Window or plate glass, dishes, ceramics or Pyrex, bulbs, etc.

ALUMINUM / METAL CANS - Food and beverage cans, aluminum, steel, metal, and aluminum foil and pie tins.

PLASTIC FOOD GRADE CONTAINERS

PET – 2-liter or other size beverage containers.

HDPE – Milk and water jugs, laundry, and household detergent bottles.

PVC – Vegetable oil bottles, window cleaner and detergent bottles.

LDPE – Other food grade bottles.

PP – Yogurt cups and syrup bottles.

– Other plastic food containers.

(Look for the recycling symbols shown above, acceptable bottles will have one of these #'s on the bottom.) Polystyrene (carry-out containers) is no longer accepted. Bottles that contained motor oil, pesticides, or chemicals will NOT be accepted.

PREPARATION: All containers in Step #2 can be mixed in your plastic recycling bin. Please place the items from Step #1 on top. All items should be rinsed and the caps removed and discarded. Containers may be flattened to reduce volume. Plastic grocery bags are usually accepted at grocery stores.

Place your recycling bin at the curb on your regular pickup day. It's that easy!! Recycling will be collected on the same day as refuse, but at different times of the day.

Where Can I Learn More?

State of Massachusetts Department of Environmental Protection, "Motivating People to Reduce Waste":

www.mass.gov/dep/recycle/reduce/motivate.htm.

Illinois Recycling Association: www.illinoisrecycles.org

National Recycling Coalition: www.nrc-recycle.org

Construction and Demolition Debris Recycling Ordinance

Recommended Action: Adopt a local ordinance or policy which requires the recycling of construction and demolition debris.

Description:

Construction and demolition sites generate significant amounts of waste. A large percentage of this material can easily be recycled or reused. In the United States, Construction and Demolition (C&D) debris accounts for 30% of all solid waste produced. Most of this waste goes to landfills. Recycling C&D debris conserves valuable landfill space and reduces consumption of resources.

Municipal C&D ordinances promote the responsible separation and recycling of C&D debris to help contractors and individuals save on costly disposal fees while protecting the environment. Ordinances stipulate the amount of debris to be recycled, which projects must comply, what products qualify, and how contractors will keep track of waste generated at project sites.

C&D debris is non-hazardous, non-contaminated solid waste resulting from construction, remodeling, repair or demolition operations on pavement, buildings, and other structures. C&D Debris includes waste from new construction, renovation, and demolition projects, and may include:

- Bricks, concrete, and other masonry
- Rock
- Wood, including non-hazardous painted, treated, and coated wood
- Scrap metal
- Plaster
- Gypsum drywall
- Plumbing fixtures and piping
- Non-asbestos insulation
- Roofing shingles and other roof coverings
- Reclaimed asphalt pavement
- Glass
- Plastics
- Landscape waste

Recycling C&D debris saves money; contractors can save money through avoided disposal fees and by reselling or reusing C&D materials on future projects.

Municipal Example:

In 2006, the City of Chicago passed amendments to its Construction or Demolition Site Waste Recycling Ordinance to increase the amount of C&D debris recycled in Chicago. Starting with building and wrecking permits applied for March, 2006, contractors must keep track of how much waste is generated at a job site and meet recycling goals set forth in the ordinance:

- In 2006, contractors were required to recycle 25% of the C&D debris generated at a jobsite.
- In 2007, contractors must recycle 50% of the C&D debris generated at a jobsite.

The ordinance applies to all general contractors and demolition contractors on the following projects:

- Residential buildings with 4 or more units.
- Non-residential buildings with more than 4,000 square feet.
- Building rehabilitations that will require a Certificate of Occupancy from the Department of Buildings.

Contractors have the option of sorting debris on site and having it hauled to a recycler or hiring a recycler that will take mixed material and sort it at the recycling facility.

Compliance with the program is handled through the Department of Contracts and Permits (DCAP). Recycling compliance forms are issued by DCAP at the time of permit issuance. Contractors must fill out the form and return it to DCAP at the end of each project along with an affidavit from the waste hauler or recycler.

The Solid Waste Agency of Lake County (SWALCO) also developed a Demolition Waste Management Plan Specification Guide for Engineers (link listed below) to as a comprehensive guide outlining contractors' responsibilities. The Guide includes types debris to be recycled, performance goals, and how to appropriately dispose of waste.

SWALCO was created to implement a regional approach to solid waste management which addresses the economic, political, and environmental issues of waste disposal in Lake County.

Where Can I Learn More?

City of Chicago Construction or Demolition Site Waste Recycling Ordinance:

http://egov.cityofchicago.org/city/webportal/portalContentItemAction.do?contentOID=536932617&contentTypeName=COC_EDITORIAL&topChannelName=HomePage

Solid Waste Agency of Lake County Demolition Waste Management Plan Specifications Guide:
www.co.lake.il.us/swalco/programs/demospec.asp

List of local area C&D recyclers:
[http://egov.cityofchicago.org/webportal/COCWebPortal/COC_ATTACH/C and D Recyclers List 03 16 2006.pdf](http://egov.cityofchicago.org/webportal/COCWebPortal/COC_ATTACH/C_and_D_Recyclers_List_03_16_2006.pdf)

Illinois EPA – Construction and Demolition Debris Website: <http://www.epa.state.il.us/small-business/construction-debris/>

SUBSTITUTE

ORDINANCE

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CHICAGO:

SECTION 1. Section 11-4-1905 of the Municipal Code of Chicago is hereby amended by adding the language underscored and deleting the language struck through as follows:

11-4-1905 Construction or demolition site waste recycling.

- (1) For purposes of this section, the term
 - (a) “Contractor” means general contractor as defined in Section 4-36-010 and also includes any person engaged in the demolition or wrecking of a structure for which a permit is required under Section 13-32-230.
 - (b) “Construction and demolition debris” has the meaning ascribed to the term in Section 11-4-120 of this Code, but does not include materials that are contaminated by lead, asbestos, or other hazardous materials in such a way as to render recycling illegal or impossible.
 - (c) “Recycle” has the meaning ascribed to the term in Section 11-4-120 of this Code.
 - (d) “Recycler” means a recycling facility, transfer station, or other waste handling facility permitted pursuant to Section 11-4-250 of this Code which accepts construction and demolition debris for recycling or for further transfer to a recycling facility.
 - (e) “Reuse” means (i) the on-site use of reprocessed construction and demolition debris if such on-site use is authorized in writing by the commissioner pursuant to Section 11-4-1935 of this Code; and (ii) the off-site redistribution of a material which would otherwise be disposed of, for use in the same or similar form as it was produced.
- (2) Any project subject to this section shall be required to recycle or reuse construction or demolition debris produced on site as part of construction or demolition activities by meeting the following requirements:

- (a) The contractor on a project that is issued a permit with an application date on or after January 1, 2006, but before January 1, 2007, shall cause to be recycled or reused at least 25 percent of construction and demolition debris, as measured by weight, produced on site.
- (b) The contractor on a project that is issued a permit with an application date on or after January 1, 2007, shall cause to be recycled or reused at least 50 percent of construction and demolition debris, as measured by weight, produced on site.
- The following projects are subject to this section:
 - (a) Construction of a new residential building with four or more units.
 - (b) Construction of a new non-residential building, other than projects for which the total square footage is 4,000 square feet or less.
 - (c) Any rehabilitation of a building that will require a certificate of occupancy to issue from the department of buildings.
 - (d) Demolition of a residential building with four or more units that includes the demolition of at least one outside wall.
 - Demolition of a non-residential building, other than projects for which the total square footage is 4,000 square feet or less.

A project is exempt from this section if only a plumbing permit, only an electrical permit or only a mechanical permit is required.

- (4) Certification of compliance and enforcement.
 - (a) Within 30 days of completion of a project meeting the requirements of subsection (3) of this section, the contractor shall submit documentation as described herein to report compliance with this section and regulations promulgated thereunder . Documentation shall be in a form prescribed by the commissioner of environment and consist of notarized affidavits from the contractor and the waste-hauler or recycler for the project certifying the extent to which the project complies with subsection (2).
 - (b)
 - (i) The certificate of occupancy for a project subject to this section may be withheld until the applicant submits either (A) the required documentation, including, where applicable, proof that any fine due under subsection (6) of this section has been paid in full, or (B) proof of a written request for a hearing on the

applicability of this section and/or the amount of fine due, which hearing shall be conducted in the department of administrative hearings.

- (ii) Notwithstanding the foregoing subparagraph (i), if a contractor is unavailable or refuses to provide the required documentation, a property owner may obtain a certificate of occupancy by submitting a waiver application supported by an affidavit that the contractor is unavailable or refuses to provide the required documentation.
- (c) A contractor who fails to submit the required documentation as provided herein shall be subject to the full amount of the fines specified in subsection (6) as if no amount of construction and demolition debris was recycled or reused, and may be subject to suspension or revocation of the contractor's general contractor's license by the mayor or the director of business affairs and licensing pursuant to Chapter 4-4 of this Code. The contractor may file a written request with the Department of Environment for a hearing to determine the applicability of this section and /or the amount of fine due, which hearing shall be conducted by the Department of Administrative Hearings.
- (d) The executive director of construction and permits shall not issue any new building or demolition permit to a contractor who has failed to timely submit the required documentation with respect to any completed project, until the applicant either (A) submits the required documentation, including, where applicable, proof that any fine due under subsection (6) of this section has been paid in full, or (B) submits proof of a written request for a hearing on the applicability of this section and/or the amount of fine due, which hearing shall be conducted in the department of administrative hearings.
- (e) A contractor must comply with all reasonable requests for information and documentation made by the commissioner of the environment pursuant to an audit to monitor compliance with this section. Documentation required by this section must be maintained for at least three years.
- (f) Whenever any affiant knowingly and falsely states that a project has met the requirements of this section, or whenever any contractor knowingly submits an affidavit with such a false statement, or whenever any person knowingly fails to comply with a reasonable request made pursuant to an audit under this section, such action will subject the person to a fine of \$2,000 to \$5,000, and will subject the person to additional penalties and fines pursuant to this Code or state law including, but not limited to, the penalties specified in subsection (6) and the revocation or suspension of an affiant's or contractor's general contractor's license pursuant to Chapter 4-4. In the case of a contractor, the executive director of construction and permits may, after a hearing resulting in a finding that the contractor has committed any of the aforesaid violations, deny the contractor's right to obtain building or demolition permits for a period of up to one year.

- (5) The commissioner of environment may promulgate such rules and regulations as necessary to implement the provisions of this section.
- (6) Contractors who fail to meet the recycling percentages identified in subsection (2) shall be subject to the following fines:

For construction projects or demolitions involving 10,000 square feet or more of renovated, newly constructed, or demolished space	\$1,000 for each percentage point of difference between the amount required by this section to be recycled or reused and the amount actually recycled or reused
For construction projects or demolitions involving less than 10,000 square feet of renovated, newly constructed, or demolished space	\$500 for each percentage point of difference between the amount required by this section to be recycled or reused and the amount actually recycled or reused

SECTION 2. This ordinance takes effect upon its passage and approval.

Paint Recycling

Recommended Action: Offer a residential paint recycling program in your municipality.

Description:

Sometimes it isn't possible for residents or property owners to use all the paint they've purchased and opened. Providing a reuse and recycling program in your community can remove leftover paint from landfills and eliminate a hazardous material from entering into the ecosystem.

A municipality can provide two options for residents to prevent paint from entering the waste stream – reuse or recycle. Local charities, area schools, and churches will often accept leftover paint in good condition. Some communities offer swaps or product exchanges to encourage residents to bring in their unwanted paint.

Instead of reusing leftover paint, a paint recycling program collects unwanted paint which is then taken to a company that will recycle it into recycled-content paint, either reprocessed or rebleded paint. Both reprocessed and rebleded paints are sold as a recycled-content product.

The Illinois Environmental Protection Agency (IEPA) started the “Partners for Waste Paint Solution” program to assist municipalities collect and recycle leftover paint. Partnerships negotiated between IEPA and local paint retailers, such as hardware stores, offer consumers the opportunity to deliver unwanted paint to either municipalities or participating retailers. Paint is reformulated or remixed for reuse. Unwanted paint is picked up by an IEPA –contractor for disposal at IEPA's expense.

If you are planning on implementing a paint recycling program, you need to decide whether your community will also accept steel paint cans. Empty steel paint cans are recyclable but not every community collects paint cans as part of its local recycling program. To recycle, steel paint cans must be empty and all paint contents dried prior to recycling. Therefore, recycling paint cans requires additional education and outreach.

Municipal Example:

About 25% of the waste collected at Oak Park's Household Hazardous Waste collections is paint. In partnership with IEPA, the Village accepts oil-based and latex paints twice annually, at its *Great Paint Exchange*. There is no charge per can to the resident.

Since its first *Exchange* in 1998, the Village has collected more than 8,000 gallons and given away nearly 4,200 gallons of paint. Paint has been used by area community groups such as the Girl Scouts of America. The Village received an American Public Works Association award for technical innovation for its residential paint collection program.

Where Can I Learn More?

IEPA Partners for Waste Paint Solution: <http://www.epa.state.il.us/greentalk/v1996-n1/paint.html>

Oak Park Public Works: 708-358-5700 or publicworks@oak-park.us.



WATER STRATEGIES

Residential Rain Barrel Program

Recommended Action: Implement a residential rain barrel program to conserve water on use

Description:

A rain barrel program is part of a municipality's residential water conservation initiatives. Promoting rain barrels encourages residents to understand water conservation and protect water quality while managing the damaging effects of stormwater. Promoting the use of rain barrels is most effective in areas with frequent flooding. Residents are encouraged to disconnect their downspouts, block their sewer connections and redirect the rainwater from their roofs into rain barrels. This reduces runoff to combined sewer systems and promotes groundwater recharging.

A rain barrel is a system that collects and stores rain water from a building roof that would otherwise be lost to runoff and diverted to storm drains and rivers. Rain barrels are connected to a disconnected downspout to capture runoff. A rain barrel collects water and stores it for when you need it most – during periods of drought or little rainfall. A rain barrel can save single-family homeowners over 1,000 gallons of water during peak summer months.

Lawn and garden watering make up nearly 40% of total household water use during the summer. Water collected in a rain barrel is non-potable but can be used to water gardens and lawns, top off a swimming pool, and wash cars. Rain barrels provide an ample supply of free water to homeowners containing no chlorine, lime or calcium making it ideal for gardens, flower pots, and car and window washing.

Specifically, a rain barrel is composed of a 55-gallon drum, a vinyl hose, PVC couplings, and a screen grate to keep debris and insects out. A rain barrel is relatively simple and inexpensive to construct and can sit conveniently under any residential gutter downspout.

There are a number of factors to consider before implementing a rain barrel distribution program, including setting goals, educating the public about how to maintain a rain barrel, and being realistic about overall stormwater management benefits. Public education should address water quality and appropriate use of rain barrel water; disconnection of rain barrels during winter months; algae and mosquito control; physical site suitability; physical requirements to operate a rain barrel effectively; and, home foundation protection.

Even an extensive rain barrel distribution program will have minimal impact on combined sewer overflows. Nevertheless, combining rain barrels with other on-lot treatment programs, such as rain gardens and vegetated swales will provide greater impact and raise resident awareness on better management of stormwater in the community.

Municipal Example:

Based on the success of its 2006 Rain Barrel program, the City of Chicago has expanded its program in 2007. The Departments of Environment and Water Management are selling discounted rain barrels for \$40 at the Chicago Center for Green Technology, Greenmaker Building Supply, and at various Barrel Bonanza events throughout the summer.

The City has sold approximately 2,000 discounted rain barrels to Chicago residents since the pilot program began in 2004. Surveys completed by rain barrel owners report satisfaction with being able to conserve water in their yards and using free rainwater instead of tap water to water plants and lawns.

The City will provide approximately 4,000 rain barrels to residents through walk-ins at several locations and three Rain Barrel Bonanzas scheduled for mid-summer 2007. *(A copy of a rain barrel advertisement flyer is shown on the following page.)*

Where Can I Learn More?

City of Chicago Department of Environment: www.cityofchicago.org/Environment, "Learn About Rain Barrels" link

City of Chicago, Make Your Own Rain Barrel schematic:

http://egov.cityofchicago.org/webportal/COCWebPortal/COC_EDITORIAL/Rain_Barrel_Protocol-4-05.pdf

Milwaukee Metropolitan Sewerage District, Rain Barrels – Truth or Consequences:

<http://www.epa.gov/ORD/NRMRL/pubs/625r03003/32Sands.pdf>

To purchase from a local supplier, Greenacopia, call 630-818-6186 or email <http://www.greenacopia.com/rainbarrels.html> , or

Greenmaker Supply, call 773-384-7500 or visit their website www.greenmakersupply.com

Cost:

Ready-made rain barrels can be purchased from numerous companies and average \$40 to \$65. In addition, building your own rain barrel is relatively easy and costs about \$20.00 to purchase the materials.

Stormwater Best Management Practices

Recommended Action: Review local stormwater ordinances, identify barriers to implementation, and encourage the implementation of Stormwater Best Management Practices through local planned developments and redevelopments.

Description:

Urban development has a profound effect on the quality of local groundwater and rivers – roof tops, roads, parking lots, and other impervious surfaces do not allow rain water to soak into the ground. Since this natural storage capacity of stormwater has been lost, local elected officials and decision makers must now address proper stormwater drainage issues.

The cost of improper management of your community's stormwater can be devastating. Uncontrolled flow of stormwater can cause flooding and contaminate ground water and rivers. Every municipality should encourage the use of Best Management Practices (BMPs) by reviewing local ordinances and implementation in planned developments, and redevelopments, to reduce the amount of stormwater drainage into the sewer system and local waterways. Neighborhoods under redevelopment provide additional opportunities to implement BMPs where they may not have been used in the past.

BMPs are techniques used to control stormwater runoff, sediment control, and soil stabilization to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner in your community.

The subsequent list of BMPs encourages the deceleration of rain water as it hits roof-top gardens to allow time for absorption before flowing into a natural lake or wetland.