

Spotlight on Green Communities

Whether they're purchasing renewable energy, recycling construction debris, or installing permeable paving, communities in northeastern Illinois are getting greener. On this page we're highlighting communities and park, conservation, and forest preserve districts willing to share their experiences with selected green practices.

Case Study: Village of Algonquin **Water Conservation Outreach and Education Campaign**

By 2003, the summer demand for water in the Village of Algonquin was more than the water system could handle. Short of an unseasonably wet spring and summer, the anticipated consequences of a shortage included poor water quality, unacceptable water pressure, and the potential for complete loss of water to certain areas. This was the driving force behind the Village's development of a comprehensive water conservation plan. Since the plan's strategies have been put into action, the average peak demand in summer has gone down by 2 million gallons per day (mgpd).

Katie Parkhurst, senior planner for the Village, says that the demand for water in the summer has decreased to the point where the water system can easily handle it. The Village's average daily consumption for the past 10 years has remained fairly constant even with the increase in population. From 2000-2009 demand was, on average, 2.5 to 3.0 mgpd per summer even though the population grew by over 7,000 people in that same time period. As noted, the average peak demand in summer months has gone down about 2 mgpd.

Parkhurst says that it was essential to have consensus among the Village departments and elected officials in order to move forward with conservation efforts.

The Village's Water Conservation Plan contains outreach and education components, and also recommendations such as seasonal water rates, enforcement measures and modification of Village operations (for example, providing free effluent and limited watering of Village Plant materials). This Spotlight focuses specifically on elements of the outreach and education strategies that have been or are being implemented.

About Water Conservation Outreach

An information and outreach program serves as the backbone to water conservation and efficiency initiatives and can smooth a community's transition before, during, and after adoption of a water conservation ordinance. Algonquin's Water Conservation Plan identifies a number of different techniques to conserve water and increase resident awareness. Specific measures that are implemented may change from year to year and are tailored partly to the availability of resources.

Benefits

The American Water Works Association (AWWA) notes that few places have unlimited water supplies and that conservation can stretch existing supplies, whether supply is from groundwater or surface water. Taking water from its natural source changes the environment of that source, affecting, for example, wildlife habitat. In contrast, water left in rivers, reservoirs and groundwater basins can be used for not only environmental purposes, but also for recreation and aesthetic enjoyment. And, the less water taken, transported and treated, the less electricity and energy used, resulting in a reduction of greenhouse gas emissions.

There are cost benefits as well as environmental advantages. Water conservation decreases the cost of removing water from its source, and transporting, treating, and delivering it to users, saving taxpayers and industries money and reducing municipal infrastructure budgets. Lowering water production and/or distribution costs can save utilities and its constituents money in reduced operation cost and possibly deferred capital costs. Customers who conserve water may have lower water, wastewater, and energy bills.

The Process

According to Katherine Parkhurst, Senior Planner for the Village, the first thing they did was form a Water Conservation Committee made up of staff from the police, administration, community development and public works departments. The initial goal was to identify strategies to increase property owner's awareness of the need to conserve water. The following are strategies that have been used or are currently in use by the Village. They include contacts with residents and other property owners, and special events to communicate the water conservation message.

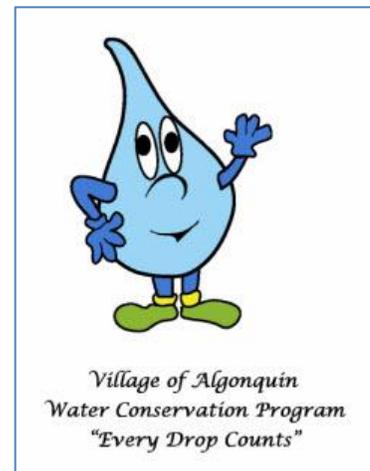
- ***Contact with residents and other property owners***

- Door hangers - hung where over-watering appears to occur - all Village employees help post the hangers that address watering restrictions, water usage, water surcharge rates, and conservation tips. Cost: \$500.00 for printing.
- Notices placed on water bills, website, and newsletters - for example, "effective June, July, and August billing rates triple for consumption above 18,000 gallons." Cost: staff time.
- Newsletter articles with information - such as inside and outside conservation methods (such as washing only full loads of laundry and dishes; installing low-flow showerheads, using native plants, setting mower blades high, and leaving grass clippings on lawn). Cost: staff time.
- Voice mail and email messages – changed weekly; includes reminder about water conservation such as what a resident can do to reduce water use. Cost: staff time.
- Magnets that outline conservation program - such as the water use restrictions (tip - it's important to date them so you can tell if people are looking at the current brochures, magnets, etc.) Cost: \$4800, including mailing.



Conservation Community Day 2010

- Business education – working with those that have irrigation systems to limit or eliminate watering (includes a letter explaining the benefits and the status of the watering system).
 - Flyers that encourage water-conserving building improvements, low flow toilets and showerheads, dish washers, etc. – for example, urging Home Depot to push low flow appliances.
 - Water brochures – mailed to every resident, includes restrictions and tips for conserving water.
 - Messages to homes and business notifying if water system status changes to red.
 - Contact with Homeowner’s Associations – notifying all present at meetings or through pamphlets.
 - Press contacts – sharing the plan’s outreach efforts such as contests and other events.
- *Events*
 - Elementary School Presentations - 10 minute presentations by staff over 2-3 days to 4th graders with take away materials. Examples include stickers, pencils, handouts with games, toothbrushes, sports bottles, blue stretch bracelets, rain gauges, and a water cup. Costs vary widely. Rules for the poster contest with water regulations on the back are distributed as well. Printing cost: \$500-\$900.
 - Conservation Community Day and Founders Day
 - Logo contest and slogan
 - “Who can use the least amount of water?” contest
 - Poster contest – for schools to design a poster to be used the following year in water conservation education



Water conservation poster

Results

Parkhurst says that the demand for water in the summer has decreased to the point where the water system can easily handle it. The Village’s average daily consumption for the past 10 years has remained fairly constant even with the increase in population; from 2000-2009 the demand was, on average, 2.5 to 3.0 million gallons per day (mgpd) in summer, even though the population grew by over 7,000 people in that same time period. The average peak demand in summer has gone down about 2 mgpd.

The following tables show potential water and energy savings for residences using water conservation practices (such as retrofitting or replacing fixtures) based on a regional per capita of 2.8 persons/household.

Water Savings

Fixture	Potential Water Savings (gallons)/household/day	Potential Water Savings (gallons)/household/year
Toilet	32	11,500
Lavatory Faucet	15	5,500
Showerhead	7	2,400
Clothes Washer	12	4,500

Energy Savings

Fixture	Energy Savings (kWh/household/day)	Energy Savings (kWh/household/year)
Lavatory Faucet	.84	307
Showerhead	.86	315
Clothes Washer	1.4	511

Note: These tables contain general savings estimates. Both water and energy savings will be dependent on local factors, the specific conservation program implemented, and customer behavior.

Sources: Water 2050, Northeastern Illinois Regional Water Supply/Demand Plan, March 2010, Chicago Metropolitan Agency for Planning.

WaterSense Draft Specification for Showerheads-Supporting Statement - United States Environmental Protection Agency (USEPA). See http://www.epa.gov/watersense/docs/showerhead_suppstat508.pdf

Costs and Funding

Funding for this initiative comes from the Village’s water/sewer department. Costs can be minimal to expensive depending upon the activity chosen. One of the largest expenses includes printing and mailing brochures to all residents, although this outreach method can be done in other ways if cost is a factor. The other large outlay is the handout and takeaway for the 4th graders, which again can range in price depending on budget.¹

Costs for Algonquin’s initiatives are listed with the outreach strategies in the previous section under the “Process” heading.

¹ Both the design and implementation of a water conservation outreach and education campaign costs money. As successful conservation programs decrease water sales, utilities can experience decreased revenue when campaigns are not implemented in tandem with water price changes. Care should therefore be taken when embarking on a water conservation campaign to carefully analyze and proactively address potential effects on utility finances. There are many financing and rate design options available to water utilities that consider developing and implementing conservation programs and managing their associated impacts. In Algonquin’s case, the water conservation outreach and education campaign was partnered with implementation of a summer surcharge rate, which raised the price of water consumed over a community baseline average of 18,000 gallons to triple the normal rates. This pricing signal reinforced the messages communicated via the outreach and education campaign to successfully get residents to re-consider their outdoor water use in summer months (which was driving system peak use).

Advice to Other Communities

Parkhurst notes that initial consensus among village departments and elected officials was critical to move forward since the community was impacted with watering restrictions and enforcement of higher water rates in summer. She said that the most important part of successful implementation and participation from the community is educating about the need, the goal, the benefits, and how everyone can play apart. She reiterated that rules and restrictions should not be imposed without education first.

One of the educational challenges they faced came early on. There was some public sentiment that if they could not provide water, the Village should not allow new people to reside there. Parkhurst said they devoted a lot of time to explaining that water is a regional issue and that they can grow and conserve water at the same time.

Next Steps

The program is evaluated and revised in early spring and implemented starting in May of each year based on community needs. For example, based on feedback from the community and the status of their water system, the Village slightly changed the water restrictions over the years.

Resources

AWWA, 2008. *Water Conservation Programs – A Planning Manual (M52)*. See <http://www.awwa.org/publications/MainStreamArticle.cfm?itemnumber=2185&showLogin=N>.

CMAQ, 2010. *Model Water Use Conservation Ordinance*. See <http://www.cmap.illinois.gov/uploadedFiles/committees/watersupply/Documents/ModelOrdinance.pdf>.

CMAQ, 2010. *Water 2050: Northeastern Illinois Regional Water Supply/Demand Plan*. See http://www.cmap.illinois.gov/uploadedFiles/committees/watersupply/Documents/FY10-0079_RWSPG_PLAN_final_low_res.pdf.

McHenry County, 2009. *Groundwater Protection Program -contains a comprehensive action plan and model policies for local governments. One section deals specifically with education and outreach*. See <http://www.co.mchenry.il.us/departments/waterresources/Pages/GroundwaterProtectionProgram.aspx>.

USEPA – the WaterSense Promotional Partner program assists local governments in establishing a public information campaign by providing basic outreach materials such as brochures and literature that can be customized to reflect local needs while promoting a nationally consistent message for water conservation. See <http://www.epa.gov/watersense/partners/promotional.html>.

Contact

For more information on the Village of Algonquin's outreach and education program and other water conservation efforts, contact Katie Parkhurst, AICP, by phone at 847-658-4184, or by email at katiet@algonquin.org.

Are there other green practice case studies you'd like to see? Is your community interested in being in the spotlight? Please contact Lori Heringa by phone at 312-386-8621, or by email at lheringa@cmap.illinois.gov.