

# Water Resources

With the consumption of water continuing to increase, a by-product has been the straining of our sources of water supply - whether it is for domestic, commercial, industrial, or residential users. This has been further categorized by the United States Green Building Council, identifying the primary withdrawals of water from our supply due to thermoelectric power, irrigation, and being a primary source for buildings. In order to preserve and conserve water, one of our natural resources, the Water Resources working group has addressed objectives which monitor water as well as reduce consumption, improve water efficiency to reduce energy consumption in the water supply and wastewater infrastructure, and address water efficient landscaping. A critical component which is addressed is public education – the development of a water consumer awareness and outreach program.

## Water Resources Goal I Encourage Water Conservation

Water is not only critical for a sustainable population, it also is critical for a sustainable economy. While the Midwest has generally been considered water abundant, we must remember that water supply sources have finite capacities, especially with population growth and the degradation of existing water supply sources. In 2007, the Regional Water Supply Planning Group (RWSPG), along with the direction and facilitation of the Chicago Metropolitan Agency For Planning (CMAP), embarked on the development of Water 2050 Northeastern Illinois Regional Water Supply/Demand Plan. The March 2010 document projects a population increase of nearly 3,700,000 persons in the 11-county Northeastern Illinois region from 2000 – 2050. With this increase in growth, the planning document concluded portions of the region's water supply will reach critical levels by the year 2050 if the region does not change its water use habits. The city of Elgin shall utilize their position as a regional leader to demonstrate the benefits of water conservation within Northeastern Illinois. Water conservation will need to become part of the region's and the city's water supply management plan in order to maintain a sustainable source of water.

### Objective 1

Encourage the use of WaterSense labeled water fixtures through the development of a fixture rebate program.

WaterSense (<http://www.epa.gov/watersense/index.html>) is a product labeling program developed by the Environmental Protection Agency (EPA), similar to Energy Star, but for water conservation.

Products labeled with a WaterSense label:

- Perform as well or better than their less efficient counterparts.
- Are 20 percent more water efficient than average products in that category.
- Realize water savings on a national level.
- Provide measurable water savings results.
- Achieve water efficiency through several technology options.
- Are effectively differentiated by the WaterSense label.
- Obtain independent, third-party certification.

Tasks/Metrics

1. Develop WaterSense labeled fixture rebate program by the end of 2011.
2. Have 100 fixtures replaced by the end of 2012.

**Objective 2**

Lead by example by installing WaterSense labeled fixtures in community facilities (i.e. Centre, City Hall, etc.) and educate residents of the benefits of water conservation through signage at the facilities.

## Tasks/Metrics

1. Appropriately install WaterSense labeled fixtures in community facilities by the end of 2012.

**Objective 3**

Develop/enhance water conservation ordinance.

## Tasks/Metrics

1. Utilize the expertise of the Northwest Water Planning Alliance (NWWPA). Update ordinance by end of 2012.

**Objective 4**

Encourage use of automated lawn sprinkling systems that react to the weather conditions (i.e. do not sprinkle when precipitation levels are sufficient).

## Tasks/Metrics

1. Include within a water conservation ordinance.

**Objective 5**

Perform water conservation community outreach to elementary schools by developing a water lesson for 3rd or 4th graders.

## Tasks/Metrics

1. Develop water lesson by the end of 2011.
2. Reference the educational programs developed by the ISAWWA Water Efficiency Committee and the Village of Algonquin when developing the program for the City.
3. Coordinate With 25% of the teachers in 2012, 25% more in 2013, 25% more by 2014 and the final 25% by 2015.

**Objective 6**

Improve water consumer awareness of the amount of water they use, in an effort to reduce their water use.

## Tasks/Metrics

1. Add measurable and simplified (gallons per day) historical water consumption values to water bills, and/or develop a water bill interpreter/calculator for the City's website by the end of 2011.

**Objective 7**

Develop water conservation based water rate structure that provides sufficient revenue to fund operational, maintenance and rehabilitation expenses.

## Tasks/Metrics

1. Develop new rate structure by the end of 2012.

### Objective 8

Reduce city of Elgin per capita water use by 17% as recommended by Elgin’s Water Master Plan.

On average city of Elgin citizens use 114 gallons of water per day. This is 14% higher than the national average. According to the US EPA the average US citizen uses 100 gallons of water per day.

Tasks/Metrics

1. Reduce per capita water use from 114 gallons per capita per day (gpcd) to 94 gpcd by 2040.

### Objective 9

Become a WaterSense partner

Tasks/Metrics

1. Become a partner by the end of 2011.

### What is the NWPA?

The Northwest Water Planning Association NWPA represents 5 Council of Governments representing approximately 74 communities (including Elgin and Aurora) and 5 Counties (Kane, Kendall, McHenry, Lake and DeKalb). Elgin Mayor Ed Schock is on the executive committee along with other municipal representatives and the 5 County Board Chairman. The NWPA is dedicated to water planning and education and will likely take up the issue of a Model Water Ordinance for the 5 County Region, in the near future.



## Water Resource Goal II

### Educate residents about pollutants that affect Elgin's water supply.

The city of Elgin utilizes the Fox River for nearly 95% of its source of drinking water. The water quality within the Fox River and its tributaries directly affect the level of treatment required prior to the water distribution to the city of Elgin Water Works System users. By educating residents about pollutants that affect our water supply, the City will minimize its costs for water treatment.

#### Objective 1

##### Develop pharmaceutical recycling program.

Currently there are only two pharmaceutical drop-off locations near Elgin:

Naperville Fire Station #4

Corner of Rt. 59 and Brookdale (1/2 mile south of I-88)

Saturdays and Sundays

9 am. to 2 pm, excluding holidays.

Fox Metro Water Reclamation District

682 Route 31, Oswego

630-301-6820

Monday - Friday

8:00 am to 5:00 pm.

This objective recommends the establishment of drop-off centers within Elgin. By making proper disposal of pharmaceuticals more convenient, Elgin can make its water cleaner and safer.

##### Tasks/Metrics

1. Install one permanent drop off box soon after ESAP adoption.
2. Have five (5) installations by 2015.
3. Post map of drop-off locations on the City's website.

#### Objective 2

##### Provide water quality information within quarterly newsletters.

##### Tasks/Metrics:

1. Include at least one article in each quarterly newsletter.

#### Objective 3

##### Provide water quality educational information on water bills.

##### Tasks/Metrics

1. Develop water quality topic/comment for each billing cycle by 2012.

#### Objective 4

##### Encourage proper use of fertilizers and lawns and gardens.

##### Tasks/Metrics

1. Include as note on water bill and within newsletter by end of 2012.

#### Objective 5

##### Perform water quality community outreach to elementary schools by developing a water lesson for 3rd or 4th graders.

##### Tasks/Metrics

1. Include water quality section within water lesson. See water conservation section for implementation schedule.

### Objective 6

Improve water quality connection community awareness with symbolic storm sewer castings.

#### Tasks/Metrics

1. Adopt casting standard for new developments and rehabilitation projects that include water quality symbols (i.e. fish) and/or statement (i.e. discharges to waterway) by 2011.
2. Partner with local youth organizations (i.e. Boy Scouts and Girl Scouts) to stencil existing castings by the end of 2012.

### Objective 7

Discourage the disposal of automotive liquids into storm drains.

#### Tasks/Metrics

1. Include as topic within City newsletter.
2. Post map of drop-off locations on City's website by the end of 2011.

### Objective 8

Promote expanded household hazardous waste drop-off locations.

#### Tasks/Metrics

1. Include as topic within City newsletter.
2. Post map of drop-off locations on City's website by the end of 2011.

### Objective 9

Integrate educational signage into the Riverfront Esplanade project that explains the importance of the Fox River to the city of Elgin.

The Fox River is the main source of the city's drinking water, it is home to several species of fish, mussels, macro invertebrate and provides habitat for several other living creatures.

#### Tasks/Metrics

1. Include signs within the project construction documents.

### Objective 10

Maintain memberships, and actively participate, within water quality based organizations (i.e. Friends of the Fox, Fox River Study Group, Fox River Ecosystem Partnership, etc.)

#### Tasks/Metrics

1. Maintain memberships and actively participate.

### Water Resources Goal III

#### Improve water quality throughout Elgin's waterways

The city of Elgin lies within the watersheds of several important waterways, namely: the Fox River, Tyler Creek, Poplar Creek and Ferson Creek. The water quality within these waterways is important for passive and active recreation and the ecological health of the city's watersheds, as well as, their connection to, or as the direct source of, the city's drinking water (the Fox River currently provides 95% of the source of the city's drinking water). While these waterways generally are in good health, several are considered impaired by the Illinois Environmental Protection Agency (IEPA). Water quality improvement in these waterways will have direct benefits for the city's source of water supply, as well as, the benefits healthy watersheds and waterways bring to a sustainable community.

#### Objective 1

Supplement the County/City's stormwater ordinance by adding language that supports the use of green infrastructure such as bioswales, rain gardens, permeable pavers and other best management practices, focusing on the downtown and new developments

##### Tasks/Metrics

1. Develop stormwater ordinance amendments by the end of 2013.

#### Objective 2

Promote river and local waterway clean-up days.

##### Tasks/Metrics

1. Develop partnerships with organizations (i.e. Boy Scouts, Girl Scouts, high school environmental clubs, church groups, etc.) to establish clean-up days on major waterways by the end of 2011.

#### Objective 3

Develop rain garden cost-share program.

##### Tasks/Metrics

1. Develop program and help fund 10 rain gardens program year 1.
2. Work towards goal of funding 20 rain gardens in program year 2.

## Objective 4

Install xeriscape gardens with signage at high visibility areas (i.e. Centre, City Hall, etc.) and promote native plant usage in all designs.

Xeriscape gardening is a method of gardening that strives to conserve water through the use of native, drought resistant plantings, utilizing natural drainage patterns, limiting turf area and utilizing larger shrubs and trees for natural shading effects.

According to EarthEasy.com, the benefits of xeriscape gardening include:

- **Saving Water.** Xeriscape can reduce landscape water use by 50 - 75%.
- **Less Maintenance.** Aside from occasional pruning and weeding, maintenance is minimal. Watering requirements are low, and can be met with simple irrigation systems.
- **No Fertilizers or Pesticides.** Native plantings eliminate the need for chemical supplements.
- **Improves Property Value.** A good Xeriscape can raise property values which more than offset the cost of installation. Protect your landscaping investment by drought-proofing it.
- **Pollution Free.** Fossil fuel consumption from gas mowers is minimized or eliminated with minimal turf areas. Small turf areas can be maintained with a reel mower.
- **Provides Wildlife Habitat.** Use of native plants, shrubs and trees offer a familiar and varied habitat for local wildlife.

### Tasks/Metrics

1. Install one (1) garden in a highly visible public location by the end of 2011.
2. Strive to install five (5) gardens by the end of 2015.



<http://www.northbrookfield.net/images/Xer-Lg-1.jpg>

### Objective 5

Continue the City’s detention basin retrofit program\* which modifies the construction of the outdated detention basins which provide limited to no water quality benefit, to newer designs that incorporate stormwater treatment components

\*See Appendix B—Existing Elgin Initiatives for more information

Tasks/Metrics

1. Attempt to convert at least one basin per year until all the appropriate basins are converted (as funding allows)

### Objective 6

Institute recommendations within the City’s Long Term Control Plan with the goal of separating the storm and sanitary sewers in all parts of the city and removing the City’s 4 Combined Sewer Overflows (CSOs).

Tasks/Metrics

1. Complete the recommendations within the Long Term Control Plan in accordance with the USEPA approved timeline.

### Objective 7

Continue to implement “sensible salting” recommendations to reduce chloride levels within surface waters and the shallow groundwater.

The “sensible salting” recommendations, as developed by the DuPage River Salt Creek Workgroup, are as follows:

- Provide proper training of road salt applicator staff and public education to build community awareness.
- Conduct regular equipment maintenance and calibration.
- Ensure proper salt storage, handling and transport.
- Explore greater reliance on anti-icing and deicing (e.g. pre-wetted road salt) practices.
- Pursue judicious use of alternative deicing chemicals, including organic deicers such as those based on corn or beet derivatives.
- Monitor salt use to determine program effectiveness.

Tasks/Metrics:

1. Inclusion of compliance with ‘sensible salting’ recommendations within the annual snow removal report to the City Council.



## Additional Resources/Best Practices

Chicago Metropolitan Agency for Planning (CMAP) Model Water Conservation Ordinance

<http://www.cmap.illinois.gov/water-2050>

City of Titusville, Florida

<http://www.titusville.com/Page.asp?NavID=839>

Offers a variety of water conservation programs to reduce residential water use. Programs include free faucet aerators, a shower head exchange program and a toilet retrofit rebate program.

Kansas City Missouri - 10,000 Rain Garden program

[\(http://www.rainkc.com/\)](http://www.rainkc.com/)

A regional effort dedicated to educating citizens about improving water quality and managing stormwater on public and private property.

Las Virgenes, California Municipal Water District

<http://www.lvmwd.com/index.aspx?page=1>

Participates in Southern California's SoCal WaterSmart Program and provides

50 Ways to save H2O (<http://www.lvmwd.com/index.aspx?page=129>)

Madison Wisconsin - 1,000 Rain Garden program

<http://www.cityofmadison.com/engineering/stormwater/raingardens/1000raingardens.cfm>

This initiative spreads awareness and celebrates newly added rain gardens. A city-wide map is provided displaying each rain garden within the city. Citizens are encouraged to share photos of their rain garden.

Southern California WaterSmart Program

<http://socalwatersmart.com/index.php>

A regional rebate program that offers residential water customers rebates for high-efficiency clothes washers, rotating sprinkler nozzles and weather-based irrigation controllers

Village of Algonquin, Illinois

[http://www.algonquin.org/egov/docs/1210879749\\_230529.pdf](http://www.algonquin.org/egov/docs/1210879749_230529.pdf)

Provides an example of watering restrictions as well as outreach methods. Algonquin utilizes a green, yellow, orange, red notification system, letting residents know which regulations are in effect. Changes in color (regulations) are communicated via signage along roads as well as Algonquin's website.

Elkhart County Indiana - Rain Barrel and Rain Garden Incentive program

<http://www.stormwaterelkco.org/index.php>

Established a rain barrel/rain garden incentive program. The program was funded at \$10,000 and reimbursed residents up to \$250 per rain garden and \$50 per rain barrel (up to 2 barrels) until funds were exhausted.

Stormwater Ordinance Model Albemarle County, Virginia,

<http://www.epa.gov/owow/nps/ordinance/documents/D2b-Ablemarle.pdf>