

protecting water resources through conservation



The Water Resource Protection and Conservation Toolkit

This is one of a series of 12 fact sheets developed by the Northwestern Indiana Regional Planning Commission with funding from the Joyce Foundation for the Water Resources Protection and Conservation Toolkit. The toolkit provides background on, and methods to protect and conserve local water resources. These tools are intended to help citizens and local officials to manage and protect water resources for future generations.

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How Can Local Governments Protect Water Resources Through Conservation?

A single withdrawal of water from a single family home or business does not usually hurt water sources. But taken together, unlimited residential, commercial, and industrial water withdrawals can weaken a community's ability to sustain residents and businesses. Local officials have the opportunity to be leaders in ensuring water resources are available for current residents and to support thriving future generations through local planning. Below are a few examples of water conservation requirements that can be put into local ordinances to promote efficient water use.

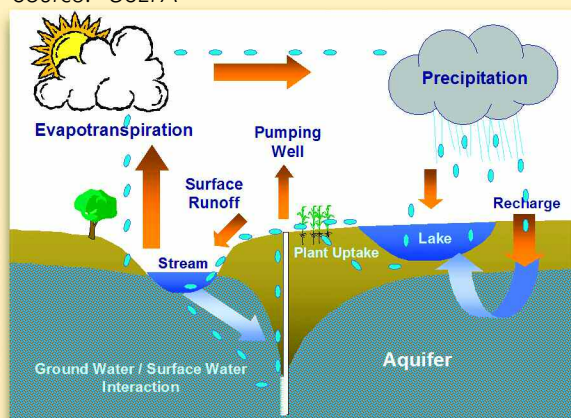
What are Basic Conservation Requirements?

Illinois communities receiving Lake Michigan water follow these requirements:

- Metering requirements in ordinances
 - * Require meters for all new construction
 - * Require meters for existing houses and facilities as part of any major remodel
- Efficient water use requirements in ordinances
 - * Installation of water-efficient plumbing fixtures
 - * Installation of closed-system air conditioning in all new construction or remodeling
 - * Installation of metering or self-closing faucets in all restrooms open for public use
 - * Lawn water and non-essential outside water use restrictions
 - * Installation of water recycling systems at all newly constructed or remodeled car wash installations
 - * Limitation of hydrant uses to one percent or less of net annual pumpage in each year
 - * Reduction of unaccounted-for flows to eight percent or less
 - * Adoption of water rate structures based on metered water use that discourages excessive water use



Source: USEPA



Water Resources and The Natural Water (or Hydrologic) Cycle

Water resources can be significantly affected by development activities. Water resources move through the water cycle, sometimes called the hydrologic cycle. The water cycle is the continuous movement of water from ocean, lakes, rivers, and other water bodies to air and land then back to these water bodies through rain and snow in a cyclic pattern as water is used and re-used. Some water infiltrates (or seeps into) the ground or evaporates back into the atmosphere.

What are Examples of Innovative Community – or Utility-Based Conservation Programs?



Incentives such as rebates, tax breaks, vouchers, and conservation rate structures can encourage users to conserve water. These incentives can encourage water users to install water-efficient equipment, appliances, or plumbing fixtures, repair water leaks, or implement sound landscaping practices. Conservation programs that provide financial incentives in other parts of the country that have long realized the potential for water shortages have been funded by State Revolving Loan programs. Midwestern states generally do not provide these funds for conservation programs and are just now starting to plan for possible water shortages. More information on state revolving loan funding is available at the U.S. EPA Drinking Water State Revolving Loan Fund website,

www.epa.gov/safewater/dwsrf.html

- **Require retrofitting of toilets and other plumbing when a building or home is sold.**
www.codemanage.com/santamonica/index.php?topic=7-7_18-7_18_050
- **Create a rebate program for the purchase of water-efficient appliance program.**
www.awwa.org/waterwiser/links/index.cfm?LinkCategoryID=34
 - **Low Flow Toilet Rebate Program,**
www.cabq.gov/waterconservation/opflow.html
 - **Washing Machine Rebate Program,**
www.cabq.gov/waterconservation/washingmach.html
 - **Dishwasher Rebate,**
www.cabq.gov/waterconservation/dishwasher.html
 - **Hot Water Recalculating System Rebate,**
www.cabq.gov/waterconservation/hotwater.html
 - **Rain Barrel Rebate,**
www.cabq.gov/waterconservation/rainwater.html
 - **Multi-setting Sprinkler Timer Rebate,**
www.cabq.gov/waterconservation/sprinkler.html
- **Offer home, business, or industrial water assessments or audits for free or a nominal fee.** *Audits can provide valuable information to the customer that will persuade them to participate in conservation programs. Residential audits involve sending trained agency staff, contractors, community groups or students to evaluate indoor and/or outdoor water uses. Some water agencies offer audits to all residential customers, while others target certain customers based on housing type (e.g., all single-family residences or pre-1980 buildings) or on amount of water use (e.g., top 15% of users). Many of the residential audit programs include direct installation of conservation devices. [See sidebar for more details]*
- **Charge a fee for homes that do not have water-saving appliances.**
http://santa-monica.org/epd/residents/Water/bay_saver_fee.htm





Steps for an In-Home Water Use Audit

1. Explain purpose of audit (identify ways to save water and energy, implement simple water-efficiency measures and repairs, reduce environmental burdens, and help control water and sewer costs)
2. Determine water use based on metered use or billing data
3. Test and repair leaks
4. Provide retrofit devices
5. Evaluate lawn and irrigation needs and recommend design modifications
6. Evaluate other outdoor water uses
7. Customize lawn watering schedule if needed
8. Identify all water conservation opportunities
9. Evaluate water efficiency measures
10. Educate customers on conservation

Steps for an Industrial, Commercial, and Institutional Water Use Audit

1. Obtain support from the facility's owners, managers and employees
2. Conduct an on-site inventory of water use
3. Calculate all water-related costs
4. Identify and evaluate water efficiency measures
5. Evaluate payback periods using life-cycle costing
6. Prepare and implement an action plan
7. Track and report progress



Source: *Handbook of Water Use and Conservation*



What are Examples of Public Education Programs?

One critical form of incentives is to establish an information network for the public. Many consumers lack the knowledge that will contribute to more efficient water use. Public education is arguably the driving force behind the success of any program. Additional information on public education efforts is available at:

- www.savingwater.org/education_links.htm
This web site is sponsored by the Saving Water Partnership, a group of local utilities that fund water conservation programs in Seattle and King County.
- www.awwa.org/waterwiser/
WaterWiser, a program of the American Water Works Association, is a clearinghouse of water efficiency information and provides links to water conservation public education information.
- www.H2Ouse.org is a website that shows homeowners how to identify water saving opportunities in each area of a home. The site helps:
 - Identify the top 5 actions to save water in and around the home.
 - Calculate how much water is used in the home.
 - Identify which plants need less water in a garden.

For more information, please contact:
Northwestern Indiana Regional Planning Commission
ph: 219.763.6060 • www.nirpc.org

For More Information on Conservation

American Water Works Association Conservation website:
www.awwa.org/community/links.cfm?FuseAction=Links&LinkCategoryID=32

Edwards Aquifer Groundwater Conservation Plan
www.edwardsaquifer.org/pdf/Conservation_Plan.pdf

Handbook of Water Use and Conservation, Amy Vickers.
The book is available for purchase at:
www.waterplowpress.com

Industrial, Commercial, Institutional conservation fact sheets:
www.dep.state.pa.us/dep/subject/hotopics/drought/SavingWater.htm

NIRPC Homeowner Conservation Fact Sheet

Regional Case Studies: Best Practices for Water Conservation in the Great Lakes-St. Lawrence Region,
www.glc.org/wateruse/conservation/pdf/CaseStudie6_18_04.pdf

Urban Water Conservation Implementation Challenges and Opportunities
www.cuwa.org/library/092304WaterConslmplementationChallenges.pdf

U.S. EPA Water-Efficient Products Market Enhancement Program:
www.epa.gov/owm/water-efficiency/index.htm

