

# Memo

**To:** Curt Barrett – Village Manager  
**From:** Arber Ajeti, Administrative Intern  
**Date:** 3/25/2011  
**Re:** Water Conservation

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Nearly 70% of the earth's surface is covered by water but less than 3% is drinkable. The oceans hold about 97%, and the glaciers and polar ice caps hold another 2%. This leaves less than 1% of the world's water for its population; including agricultural, manufacturing, community and personal household needs.

Despite these troublesome figures, Winfield residents have been fortunate to partake in a water system that delivers high quality water and is rich in supply. Winfield's water comes from Lake Michigan, the largest body of freshwater in the United States and the fifth largest lake in the world. Nearly 750,000 people in DuPage County get their water from Lake Michigan. The average daily water use for Lake Michigan water users in DuPage County is 106 gallons/person/day. Over 71% of total water use is for residential customers.

The Village purchases the water from DuPage Water Commission (DWC), which in turn purchases its water from the Chicago Water Department. Lake Michigan water is treated at Chicago's Jardine Water Purification Plant. Following purification, the water is delivered to Winfield residents through a web of water pipes and towers. After consumption, the water enters our sewer lines and ends up at the West Chicago Wastewater Treatment Plant.

In addition to providing a reliable and efficient water supply, the Village has taken many steps to conserve water. Some of these steps include: providing high-end water meters, replacing or repairing Village water pumps, and providing water conservation tips and literature. In addition, the Village now has a system that reads water meters every 12 hours. This gives the Village the ability to detect major leaks and notify residents before the billing period has ended.

The cost of providing water and maintaining the delivery system has steadily gone up. To mitigate these increasing costs, the best practice is to conserve more water. Water conservation protects the future water supply and saves energy and money. By adjusting the way water is used, most of our residents can easily save around \$20 per month. Tips to conserve water include: turning water off while brushing teeth, taking shorter showers or turning water off when using the shampoo and soap, and turning water off when shaving (or filling the sink).

For more information on water conservation, I have attached the following documents to the memo:

1. Monthly Savings Table (Appendix A)
2. Water Conservation Tips (Appendix B)
3. Preserving Water Pamphlet from DuPage Water Commission (Appendix C)
4. A draft resolution that the Village can approve to pledge for water conservation (Appendix D)

In addition to these indoor water conservation tips, most households can also conserve water by utilizing rain barrels. On average, 1 inch of rain on a 1000 sq/foot roof can produce 600 gallons of water. Some of that water can be easily captured by using rain barrels. The captured water can then be used for outdoor needs. Another way of conserving water is to let grass go dormant during the hottest months of the summer. The grass will grow back with rainfall and drop in temperatures.



## Appendix A: Water Conservation Tips

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### Indoor Water Conservation Tips

#### General

- Never pour water down the drain when there may be another use for it. Use it to water your indoor plants or garden.
- Repair dripping faucets by replacing washers. One drop per second wastes 2,700 gallons of water per year!
- Check all plumbing for leaks. Have leaks repaired by a plumber.
- Retrofit all household faucets by installing aerators with flow restrictors.
- Install an instant hot water heater on your sink.
- Insulate your water pipes to reduce heat loss and prevent them from breaking.
- Install a water-softening system only when the minerals in the water would damage your pipes. Turn the softener off while on vacation.
- Choose appliances that are more energy and water efficient.

#### Bathroom

- Consider purchasing a low-volume toilet that uses less than half the water of older models. **Note:** In many areas, low-volume units are required by law.
- Install a toilet displacement device to cut down on the amount of water needed to flush. Place a one-gallon plastic jug of water into the tank to displace toilet flow (do not use a brick, it may dissolve and loose pieces may cause damage to the internal parts). Be sure installation does not interfere with the operating parts.
- Replace your showerhead with an ultra-low-flow version.
- Place a bucket in the shower to catch excess water for watering plants.
- Avoid flushing the toilet unnecessarily. Dispose of tissues, insects, and other similar waste in the trash rather than the toilet.
- Avoid taking baths—take short showers—turn on water only to get wet and lather and then again to rinse off.
- Avoid letting the water run while brushing your teeth, washing your face, or shaving.

#### Kitchen

- Operate automatic dishwashers only when they are fully loaded. Use the “light wash” feature, if available, to use less water.
- Hand wash dishes by filling two containers—one with soapy water and the other with rinse water containing a small amount of chlorine bleach.
- Clean vegetables in a pan filled with water rather than running water from the tap.
- Start a compost pile as an alternate method of disposing of food waste or simply dispose of food in the garbage. (Kitchen sink disposals require a lot of water to operate properly).
- Store drinking water in the refrigerator. Do not let the tap run while you are waiting for water to cool.

- Avoid wasting water waiting for it to get hot. Capture it for other uses such as plant watering or heat it on the stove or in a microwave.
- Avoid rinsing dishes before placing them in the dishwasher; just remove large particles of food. (Most dishwashers can clean soiled dishes very well, so dishes do not have to be rinsed before washing)
- Avoid using running water to thaw meat or other frozen foods. Defrost food overnight in the refrigerator or use the defrost setting on your microwave oven.

#### Laundry

- Operate automatic clothes washers only when they are fully loaded or set the water level for the size of your load.

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### Outdoor Water Conservation Tips

#### General

- Check your well pump periodically. If the automatic pump turns on and off while water is not being used, you have a leak.
- Plant native and/or drought-tolerant grasses, ground covers, shrubs, and trees. Once established, they do not need water as frequently and usually will survive a dry period without watering. Small plants require less water to become established. Group plants together based on similar water needs.
- Install irrigation devices that are the most water efficient for each use. Micro and drip irrigation and soaker hoses are examples of efficient devices.
- Use mulch to retain moisture in the soil. Mulch also helps control weeds that compete with landscape plants for water.
- Avoid purchasing recreational water toys that require a constant stream of water.
- Avoid installing ornamental water features (such as fountains) unless they use recycled water.

#### Car Washing

- Use a shut-off nozzle that can be adjusted down to a fine spray on your hose.
- Use a commercial car wash that recycles water. If you wash your own car, park on the grass so that you will be watering it at the same time.

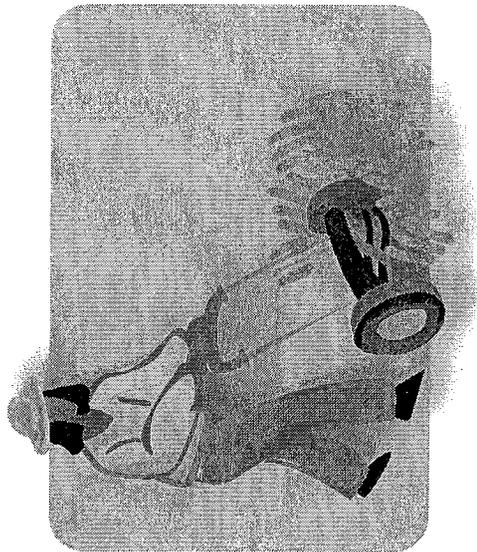
#### Lawn Care

- Avoid over watering your lawn. A heavy rain eliminates the need for watering for up to two weeks. Most of the year, lawns only need one inch of water per week.
- Water in several short sessions rather than one long one, in order for your lawn to better absorb moisture.
- Position sprinklers so water lands on the lawn and shrubs and not on paved areas.

- Avoid sprinklers that spray a fine mist. Mist can evaporate before it reaches the lawn. Check sprinkler systems and timing devices regularly to be sure they operate properly.
- Raise the lawn mower blade to at least three inches or to its highest level. A higher cut encourages grass roots to grow deeper, shades the root system, and holds soil moisture.
- Plant drought-resistant lawn seed.
- Avoid over-fertilizing your lawn. Applying fertilizer increases the need for water. Apply fertilizers that contain slow-release, water-insoluble forms of nitrogen.
- Use a broom or blower instead of a hose to clean leaves and other debris from your driveway or sidewalk.
- Avoid leaving sprinklers or hoses unattended. A garden hose can pour out 600 gallons or more in only a few hours.

### Pool

- Install a new water-saving pool filter. A single back flushing with a traditional filter uses 180 to 250 gallons of water.
- Cover pools and spas to reduce evaporation of water.



## Efficient Watering



### Timing

- **Monitor rainfall.** Don't water the lawn if rains are expected soon. Keep track of rainfall with your rain gauge. Don't apply more water than what is necessary.
- **Water early in the day** when lawns are normally wet from dew. Avoid midday watering due to evaporation, and at night due to potential increased chances of some diseases.



### Frequency

- **Water every 5-7 days (if no rain).** A soaking rain can extend the period to 10-14 days.
- **Water as infrequently as possible.** Water thoroughly so moisture gets down to the depth of the roots. Avoid frequent waterings that promote shallower root systems and weeds.



### Amount

- **Depends on your lawn.** Cool-season grasses need about 1-1 1/2 inches of water per week.
- **Avoid overwatering.** Overwatering does more than deplete the water supply, it also makes plants prone to pests and adds to stormwater runoff, which can pollute our waterways.
- **Consider drip irrigation.** When it comes to watering individual trees, flowerbeds, potted containers or other non-grassy areas, you can apply water directly to the roots with low volume drip irrigation. This will reduce water waste through evaporation or runoff and keep weeds from growing.

## Preserving Water

### While Caring for your Lawn

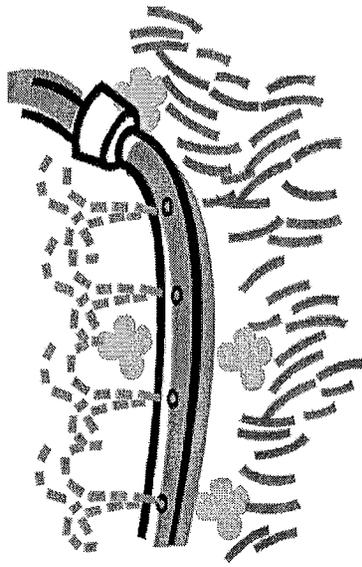
- Research has shown that on average about half of the water used in a single-family home during the course of a year will be put onto the landscape. If we considered watering the average-sized lawn of 1/5 of an acre with the recommended amount of water of 1" per week, that lawn would require more than 65,000 gallons of water for the 3 months of summer. Here are some ideas that might help cut down on your family's water use but still maintain a healthy lawn.
- **Water only what grows.** Make sure the heads are adjusted properly to avoid watering sidewalks and driveways. A properly adjusted sprinkler head should spray large droplets of water, not a fine mist, to minimize evaporation and wind drift.
  - **Let your lawn go dormant** during the hottest months by not watering. Cool-season grasses stop growing at temperatures above 90° F. It will grow back in the cooler months of fall.

## Efficient Mowing

- **Mow at the highest setting.** For most cool-season lawns, a height of between 3" to 3 1/2" is considered adequate. Keeping the grass slightly higher will increase shade on the soil, encourage deeper rooting and reduce evaporation.

## Efficient Fertilizing

- **Fertilize once a year** in October after the rainy season to allow fertilizer to be absorbed by the roots. Always use a slow release organic fertilizer. Excess fertilizer applications increase water consumption.

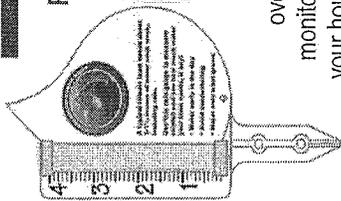


## DWC has developed 4 programs to help preserve our water:

- **Water Pledge Program**
- **Residential Leak Detection and Repair Program**
- **Rain Gauge and Landscape Irrigation Program**
- **Rain Barrel Program**

## This year DWC has presented these four programs (Water Pledge, Residential Leak Detection and Repair, Rain Gauge and Landscape Irrigation, and Rain Barrel Programs) to:

- DuPage Water Commission Board of Commissioners
- DuPage Mayors and Managers Conference
- DuPage County
- Member Utilities



Rain gauges are devices designed to measure how much rain was received at a specific location over a designated period of time. Rain gauges are easy to use and can act as an accurate way to measure how much water plants are getting over time. Use your rain gauge to monitor how much rain was received at your house. Keep track of weekly rainfall totals to determine whether your lawn needs additional water.

### How to Use a Rain Gauge

**Step 1** - Clean your rain gauge to begin use. Allow it to dry thoroughly before using it.

**Step 2** - Place your rain gauge straight up and down at the location where you want to measure the rain. Place the rain gauge outside free and clear of any buildings and trees or plants. Make sure your rain gauge is secure so it won't tip over.

**Step 3** - Determine the period of time that you want to measure the rainfall. Some people pour the rain out of their rain gauges at the same time each week to get an idea of the total rainfall for a week. Others check their rain gauges after each rainfall.

**Step 4** - Wait for the rain to be completely over before checking the level of rain to get the full rain reading. Rain gauges measure rain in tenths of inches.

**Step 5** - Write down in a notebook the amount of rain in your rain gauge in order to track the amount of rain you receive.

**Step 6** - Empty your rain gauge, and return it to its location so it's ready to collect the next round of rain.

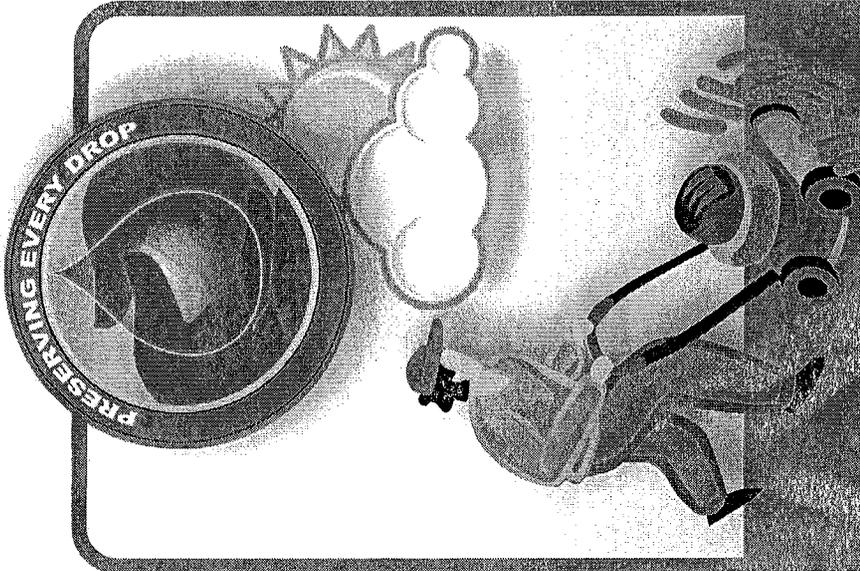
### Did You Know?

For an average non-conserving home, 80-90% of outdoor water use goes towards landscape irrigation. Efficient water use can cut down on water waste and still provide water for plants and turf. Outdoor water efficiency is especially important during the hot summer months when as much as 50% of home water use is for watering lawns and gardens.

- A typical Illinois lawn needs about 1-1½ inches of water each week, including rain according to [www.gardenillinois.com](http://www.gardenillinois.com).
- In Illinois, cool season grasses can go dormant during hot, dry weather without watering and recover when growing conditions improve in the late summer or early autumn.
- Overwatering causes runoff, wastes water, and carries fertilizers and other chemicals into the sewer system.

### Don't Forget!

- Use your rain gauge to measure rainfall and see how much water your lawn needs, if any!
- For more information on water conservation, please contact your local water utility or visit [www.preservingeverydrop.com](http://www.preservingeverydrop.com).



## LAWNCARE Water Use

**DuPage  
Water  
Commission**