Water—A Most Precious Resource

Without fresh water almost all life on Earth would wither and die, including people. Human bodies average about 55 to 60 percent water, which means we need water for a lot more than just drinking. The carbohydrates and proteins that we use as food are metabolized and transported by water in our bodies and water also moves the resulting wastes out of our bodies. In so many ways, water is our life blood.

Few people in Chesterfield or West County think of fresh water in terms of scarcity, not with the Missouri and Mississippi Rivers nearby. But with large parts of the country experiencing drought and water shortages, especially in the Great Plains and the West where most of our food is produced, water is a subject we all must become more familiar with.

According to the U.S. Geological Survey (USGS), the average American family of four uses 400 gallons of fresh water per day, or 146,000 gallons each year. In Chesterfield, that means our nearly 48,000 residents use about 175 million gallons of fresh water annually and people in the St. Louis metropolitan area use about one trillion gallons annually. And that's only in our small part of the Midwest.

As U.S. and world populations grow each year, the demand for fresh water increases. Pollution and poor management practices are reducing the water supply available for human use. Consequently, we must use water wisely in our daily lives. The good news is adopting water-saving techniques can reduce your in-home water use by up to 35 percent. Since we are accustomed to thinking of water as plentiful and cheap and too often fail to look for ways to use less, several easy steps to using water wisely are listed below.

Here are some ***water use averages*** calculated by the USGS that are important to our daily lives.

- Brushing your teeth, shaving, or washing your hands/face takes about one gallon each.
- A ten-minute shower uses about 25 gallons and a bath about 36 gallons.
- A toilet flush takes between one and 3.5 gallons and individuals generally flush toilets five times each day.
- Growing one pound of wheat takes between 80 and 150 gallons.
- Growing enough cotton for one shirt requires 700 gallons.

- Growing one orange takes 13 gallons; eight ounces of orange juice takes 53 gallons.

- Growing one apple requires 18 gallons; eight ounces of apple juice takes 59 gallons.

- Raising a single pound of beef requires about 1,800 gallons of water, which includes water for feed grains, grasses, and meat processing.

U.S. and world populations are growing, increasing the demand for freshwater. However, water available for human use is being reduced by pollution/contamination and mismanagement/misuse, thus decreasing supply.

Although Chesterfield and West County residents seldom think about water shortages, we are not insulated from fresh water supply problems. Witness what has been happening over the last thirty years on the Great Plains. Also known as America's Breadbasket, the Great Plains is one of the world's most fertile and productive agricultural regions. Agriculture there, from which all Americans benefit in terms of food products, is largely sustained by groundwater irrigation from the Ogallala Aquifer. That massive underground system of nearly 175,000 square miles stretches from central Texas through southern South Dakota. Nearly 30 percent of all irrigated land in the U.S. uses groundwater from the Ogallala.

Nationwide our water supply is under steadily increasing stress. It's really important for everyone who lives in Chesterfield and the St. Louis metro area to realize that water conservation is a critical part of the solution. Unlike cities on the West Coast like San Diego and Los Angeles, it's not necessary for us to start talking seriously about purifying sewer water to drinkable quality.

Not all water issues are about supply and human use. Many critical issues concern the quality and quantity of water in our local streams. Two important streams, Bonhomme Creek and its major tributary, Caulks Creek, rise in an area of rolling uplands in west St. Louis County and the Cities of Wildwood and Ellisville and flow through the City of Chesterfield to the Missouri River. Those buffer zones occupy areas between various terrestrial and aquatic ecosystems.

In urban and suburban landscapes, surface runoff and groundwater flows from adjacent terrestrial ecosystems to riparian zones have been critically altered from previous natural conditions that served as complex buffers. Soils, habitat, and native vegetation have been removed or drastically altered and exotic species were introduced, sharply reducing the riparian zone's ability to buffer overland flows of water, energy, and nutrients, resulting in stream corridors that are highly eroded and prone to flooding in heavy rainfall events.

The most effective and efficient means of addressing stream corridor restoration in urbanizing areas is through a combination of local jurisdiction cooperation coupled with stakeholder and volunteer efforts focused not only on improving stream dynamics and corridor habitats, reducing pollution, and increasing water quality but also on raising the quality of life for residents and web-of-life within the watershed. Therefore, we look

forward to the Cities of Chesterfield, Wildwood, and Ellisville, St. Louis County, the Metropolitan Sewer District, and MDOC working together with volunteer organizations and other stakeholders to address methods of ameliorating the existing adverse conditions on both Bonhomme and Caulks Creeks.

Easy Steps to Water Conservation

1. Think about How You Are Using Water
Outdoors, over sprinkling lawns and gardens is bad for plants and your wallet. Water lawns and landscaping in the morning only when they need it; be sure to avoid watering paved areas. Turn the faucet off while you are brushing your teeth or shaving.

2. Repair Leaks
Leaks waste enormous amounts of water. One drop per second wastes 2,400 gallons of water annually. Check your water meter to see if you have leaks by shutting off all water uses in your house for an hour and see if your meter continues to move. If it does, you have a leak or two. Since leaking faucets tend to be obvious, check your toilet for slow leaks from the tank to the bowl.

3. Install Water Saving Devices
Faucet aerators, flow regulators for showerheads and low-flow faucet aerators, and displacement devices for toilets reduce your water consumption. Look for ***WaterSense*** labeled devices in the market place that can achieve at least 20% more efficiency than their less efficient counterparts. With the average person flushing five times a day, waste disposal makes up about 30 percent of overall household water consumption. Not surprisingly, toilets are the single highest use of water in the average home, which is an important opportunity for water conservation. Ultra-Low Flush toilets use 1.6 gallons per flush and High Efficiency Toilets only use 1.3 gallons per flush. Thus, replacing low-efficiency toilets with more efficient models will significantly reduce family water consumption and water bills as well as being beneficial for the environment.

4. Reuse Water
Unused or slightly used water may be suitable for other purposes, even without treatment or filtration, such as watering plants etc. Make the most of your water before it goes down the drain. Using rain barrels to recycle and reuse rainwater for gardens and landscaping saves potable water and money.

Replacing herbaceous perennial borders with native plants will result in less water use and the garden will be more resistant to local pests and diseases.

Things you can do to improve water quality

- Do not put anything down a storm drain that could harm your local stream, river or lake. Hazardous materials should be disposed at appropriate sites.

- Support developers who include rain gardens and storm water retention basins in their plans.

- Support bond issues that build or upgrade local waste water treatment plants.

- Learn responsible lawn care when utilizing fertilizer, pesticides and herbicides.

- Plant native species in your yard to enhance beauty, create habitats for wildlife and reduce the need for water, fertilizers and pesticides. Do not litter or throw trash or yard waste in the street.

- Throwing unused medication down the toilet or the drain contaminates our freshwater systems. ***Remember, clean water is critical to human health, biodiversity, and the web-of-life***.

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