SIMPLE SOLUTIONS For Great Lakes Health

A Resource Guide

WE'RE SO LUCKY!

We live on the shores of the great Lake Michigan and three rivers that flow through the city: the Milwaukee, Menomonee and Kinnickinnic rivers.

Water plays a **vital role** in our history, identity, industry and economy.

Did you know Milwaukee is now a **global leader** in water research, science and technology and water-focused businesses?

This legacy is being created in partnership with local municipalities, educational institutions, environmental organizations and businesses that work with *The Water Council*, the *Global Water Center*, the *City of Milwaukee* and the *UWM School of Freshwater Sciences*. Join us! Be "**Water Centric**" and help protect our waterways and support this global water mission. www.**WaterCentricCity.org**

WATER CENTRIC CITY
ecoCITY of MILWAUKEE

Global Compact Cities Programme

In 2009 Milwaukee was designated a United Nations Global Compact City (1 of 13 worldwide), based on work helping to solve worldwide water issues.

GET INVOLVED:

VOLUNTEER, LEARN, GET OUTSIDE, HAVE FUN!

Share these solutions with your family and friends :

Volunteer for cleanups in spring with Milwaukee Riverkeeper (www.milwaukeeriverkeeper.org) and Keep Greater Milwaukee Beautiful (www.kgmb.org) or in fall with the Adopt-a-Beach program (www.greatlakes.org). You can also check-out the Adopt-a-River program with Milwaukee Riverkeeper.

Increase Water Wildlife! Volunteer for river restoration projects with River Revitalization Foundation (www. riverrevitalizationfoundation.org) and invasive species removal and planting projects with any of the organizations below.

Check-out fun classes and events
Groundwork Milwaukee, Keep Greater Milwaukee Beautiful, Mequon Nature Preserve, Milwaukee River Keeper, Milwaukee Water Commons, Riveredge Nature Center (West Bend), Schlitz Audubon Nature Center, Urban Ecology Center (3 locations) and Wehr Nature Center.

LEARN MORE!

- Manage Rain water with the MMSD's **Rain Check** at www.freshcoast740.com
- Investigate sustainability ideas with the City of Milwaukee's **Eco Tool Kit** at WaterCentricCity.org
- Tour Milwaukee's Urban Water Trail: www.milwaukeeriverkeeper.org
- Surf water conservation solutions with the EPA's Water Sense: www.epa.gov/watersense
- Sail Great Lakes facts with the Great Lakes Information Network: www.glc.org/glin, www.mmsd.com
- Adopt-a-Storm Drain @ www.respectourwaters.org

Wisconsin Coastal Management Program

NOAA — National Oceanic and Atmospheric Administration, U.S. Department of Commerce

MILWAUKEE RIVERKEEPER

If you'd like copies of this guide or more information contact Kae at 414-588-0617

THE EARTH'S FRESHWATER SEAS:

- Our health and economy depend on clean abundant water from these lakes.
- Over 42 million people depend on the Great Lakes for drinking water, industry, transportation of goods, jobs, tourism and recreation. Thousands of wildlife species also depend on the Great Lakes.
- Economic Impact: The Great Lakes support a $4 billion commercial and sports fishing industry and a $20 billion tourism industry in Wisconsin.
- We all need to do our part to protect, preserve and improve water quality to ensure that the Great Lakes can be enjoyed and used by generations to come.

MILWAUKEE'S WATERS

Lake Michigan:

- The largest lake completely within the U.S.
- The 5th largest lake in the world
- Provides drinking water for over 13 million people
- Was formed during the last Ice Age when glaciers scoured this area and filled it with melt water
- Is a Ojibwe term meaning "great water"
- Challenges: invasive species (zebra and quagga mussels) and algae (Cladophera)

Max. Depth: 923 ft.
Max. Length: 307 m.
Max. Width: 118 m.

Milwaukee River Basin:

- Covers 900 square miles
- Home to over 1.2 million people
- Includes the Milwaukee, Menomonee and Kinnickinnic rivers and has 500 miles of streams
- Located in 7 WI counties
- Contains 68,000 acres of wetlands

Length: 106 miles
Headwaters: Fond du Lac County
Mouth: Lake Michigan

The Mississippi River, the largest river by discharge in the U.S., runs along Wisconsin's west coast. Wisconsin is also home to over 15,000 inland lakes.

What's That Smell? The mystery uncovered to our "Stinky, Slimy Beaches"
Residents, business owners, and municipalities add too many nutrients to our waters that encourage algae growth. Nutrients are nitrogen and phosphorous that come from fertilizers, pet waste, grass clippings, leaves and other yard waste that gets into our rivers and Lake Michigan. These nutrients are one of the factors causing beach closings and can be hazardous to fish, bird and human health. Read more about nutrients at: www.epa.gov – search for "nutrients".

Open this Guide to learn how to keep it clean.

What affects the health of these waters?

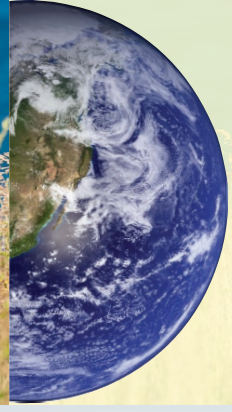
Rain and snowmelt mixes with dirt, garbage, pet and yard waste and chemicals in our yards and streets. This dirty mix is "stormwater runoff" and flows across the land into storm sewers and often directly to Lake Michigan and the Milwaukee, Menomonee and Kinnickinnic rivers.

Milwaukee has combined sewers in the area next to Lake Michigan. The combined sewers carry sanitary waste from our homes and businesses and storm water to the treatment plant. However, there are still some storm drains in this area that go directly into the Lake. We don't want to add these to Lake Michigan – the source of **our drinking water!**

Never pour chemicals or car or boat oil down a sink, drain, toilet, sewer or on the ground!

We DON'T want these in our drinking water!

SIMPLE SOLUTIONS



70% of our Big Blue Planet is water!

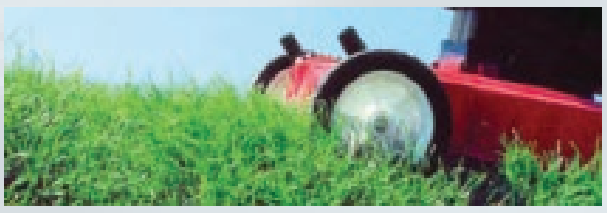
The World's Water: 97% is salt water in oceans and seas, and only 3% is freshwater. But wait... the majority of freshwater is locked-up in the ice of glaciers.

So... **Less than 1%** of all the world's freshwater is available for nearly 7 billion people!

Don't forget, other living creatures need water too!

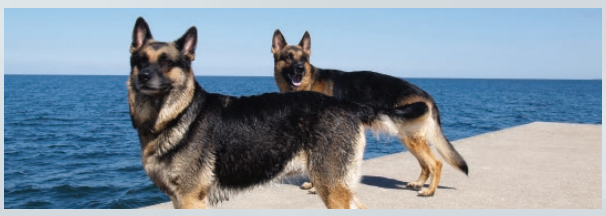
HOMES

- Keep hazardous chemicals out of sinks, drains, toilets and sewers. These chemicals are not cleaned out of wastewater and can enter our drinking water source.
- Choose less harmful household products. Read labels and avoid ingredients that are toxic, poisonous, corrosive or reactive.
- Use phosphorus-free cleaners. Less phosphorus in surface waters means less algae and cleaner beaches.
- Take a reusable grocery bag to the store. After a year you're reducing the need for up to 500 plastic bags. In the U.S. we throw away 100 billion plastic bags each year – the equivalent of 12 million barrels of oil. Many bags also end up in our waterways and kill wildlife and fish.
- Hire a service to check the lateral pipe from your home to the sanitary sewer to ensure it doesn't leak into storm sewers that go to the river and lake.



YARD CARE

- Properly manage yard waste. Grass clippings, leaves and garden debris can be reused as mulch or composted.
- Don't sweep or blow grass clippings, leaves and other debris into street's sewers. They end up in rivers and lakes and add unwanted nutrients.
- Use less fertilizer on your lawns to decrease polluted runoff when it rains. Corn gluten is a great natural weed killer and source of nitrogen for lawns. Contact UW Extension to learn how to test your soil and use corn gluten.
- Avoid applying bug killer (pesticides) or fertilizers just before or during rain to reduce polluted runoff.
- Start a compost pile that uses kitchen and yard waste to create natural fertilizer.
- Use native plants in gardens and landscaping, which use less water and are more resistant to pests.
- Disconnect rain gutters and direct to gardens or lawn. Contact your municipality to obtain their policy for disconnecting rain gutters.



PET WASTE

- Clean up pet waste regularly in your yard so it's not washed into waterways.
- Take garbage bags along on walks with your pet to pick up their waste.
- Pet waste contributes nitrogen, phosphorus, parasites and bacteria to waterways. Although the amount of waste produced by one pet might seem small, the cumulative impact of pet wastes on a water body can be significant and lead to conditions unfit for swimming or fishing.

CAR CARE

- Keep your car tuned-up to reduce chemical leaks, which wash into rivers and lakes when it rains.
- Take used motor oil and antifreeze to a recycling center. Never pour down a sewer! Google "used oil disposal" to find over 30 locations in the Milwaukee area.
- Wash your car at a car wash so dirty water and soap go to a sanitary sewer, not into a storm sewer that drains directly to rivers or lakes.
- Run several errands in the same trip to reduce air pollution, toxic metals and petroleum by-products that are released into the environment.
- Bike to work. Biking can save money, improve your health and protect the environment.

GARBAGE AND LITTER

- Close garbage bags and garbage cart lids tightly to prevent garbage from escaping and animals from making a mess.
- Don't litter! Bring a garbage bag along on walks to pick up litter you see.
- Don't throw cigarette butts on the ground – they end up in our waterways. Cigarette filters do not decompose easily (they're made of fiberglass) and are harmful to birds and fish.
- Don't flush medicines, cosmetics or personal care products down the toilet or drain. Wastewater treatment plants can't clean these chemicals out of the water. There are medicine collection days each year – visit www.mmsd.com for dates and locations. To find locations where to dispose of medications, visit: www.takebackmymeds.com

Photo: UW Extention

ENJOY YOUR RIVERS AND LAKES

- Go fishing, canoeing, kayaking, boating or hiking on the shores of the Milwaukee, Menomonee or Kinnickinnic rivers. Contact a local nature center such as Urban Ecology Center and enjoy their outdoor activities and programs.
- Become a Citizen Scientist. Do water quality monitoring and other programs with Milwaukee Riverkeeper.
- Restore the banks of the Milwaukee River with River Revitalization Foundation.
- You can also connect with local outfitters like Milwaukee Kayak Company or Clearwater Outdoors.

SMART WATER USE

- Since it takes a lot of energy to clean and filter water, conserving water conserves energy!
- Fix leaks! A leaky faucet or toilet can really add to your water bill. Use dye tablets to ensure your toilet isn't running up your water bill.
- Install low-flow faucets, shower heads and toilets and cut water use by one-third!
- Take shorter showers instead of baths and save about 7 gallons of water. A 10 minute shower uses about 16 gallons of water. Each minute you shorten your shower you save about 2 gallons of water.
- Turn off water when brushing teeth and save up to 3 gallons of water.
- Use dishwashers & washing machines for full loads only.
- Don't let faucets run. Collect water for reuse such as watering plants.
- Keep a pitcher of water in the fridge so you don't have to run the tap for cold water.
- Help eliminate sewer overflows in heavy rain: If you live in an area of combined sewers (handles water from your home and streets), take shorter showers and hold-off doing the laundry and using the dish washer until 8 hours after the storm ends.

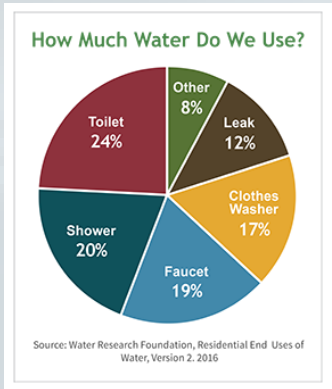
IN YOUR YARD

- Minimize evaporation by watering lawns or gardens in early morning when temperatures are cooler and winds lighter.
- Use soaker hoses or trickle irrigation systems for trees and shrubs.
- Set sprinklers to water lawns or gardens only – not the street or sidewalk.
- If your irrigation system is on a timer don't let it run when it's raining.

WATER FACTS:

An average American uses 150 gallons of water per day. An average person in a developing country struggles to find 5 gallons.

The diagram shows percentages a family of four uses daily for each task. What can you do to reduce your water use?



Reduce Stormwater Runoff

INSTALL:

- **Rain Barrels:** Disconnect a rain gutter downspout and install a rain barrel that collects water for your gardens or lawn. Gutters deliver up to 12 gallons of water a minute during heavy rain. Rain barrels save money! Up to 40% of a home's water use is watering lawns and gardens. Rain water also supplies soft, chlorine-free water which is better for plants and lawn. Contact your municipality to ensure downspout disconnection makes sense for your yard.
- **Rain Gardens:** Construct gardens in areas that collect water. Use deep-rooted native or ornamental plants to allow stormwater to slowly soak into the ground. Rain gardens help to decrease the amount of runoff going into our waterways.
- **Trees:** Tree leaves capture a significant amount of rain water. Tree roots break up soil to allow water to soak into the ground and take up water to release back into the air. Trees also provide shade, improve air quality, and can help filter polluted runoff before it enters our rivers.
- **Green Roofs** – Create rooftop gardens with plants that reduce water runoff up to 60%. Green roofs can also extend the life of your roof, decrease costs by improving heating and cooling of your house and reduce air pollution.
- **Pump Up Your Soil:** Maintain a healthy, plush and more beautiful lawn that will act more like a sponge to hold rain water. Take these 5 steps: 1. Cut your lawn at a higher level, 2. Aerate your lawn each year, 3. Add a thin layer of compost in spring or fall, 4. Fertilize properly – only add what you need, if any. Do a soil test to see what you really need, and 5. Over seed your lawn by throwing a thin layer of seed all over your lawn in spring or fall.

Visit the new **Green Infrastructure Center of Excellence** for more information on how to add green features to your home or business.
Visit **www.freshcoast740.com**