GOOD NEIGHBOR GUIDE

For Healthy Yards
& Clean Water

Contents

Welcome to the Good Neighbor Guide!

We all know what a good neighbor is. It's that person who **goes the extra mile** to do something kind or courteous — just because.

There are many ways to be a good neighbor, but this guide is focused on things we do **in our yards and streets**. Why? Because those things impact the environment — and protecting the environment is being a good neighbor too.

In this guide, we'll expose some of the hidden ways that good neighbors make the world a better place. We'll show you how a **healthy, naturally maintained yard** helps protect our water resources. And we'll show you just how easy it is to be a good neighbor.

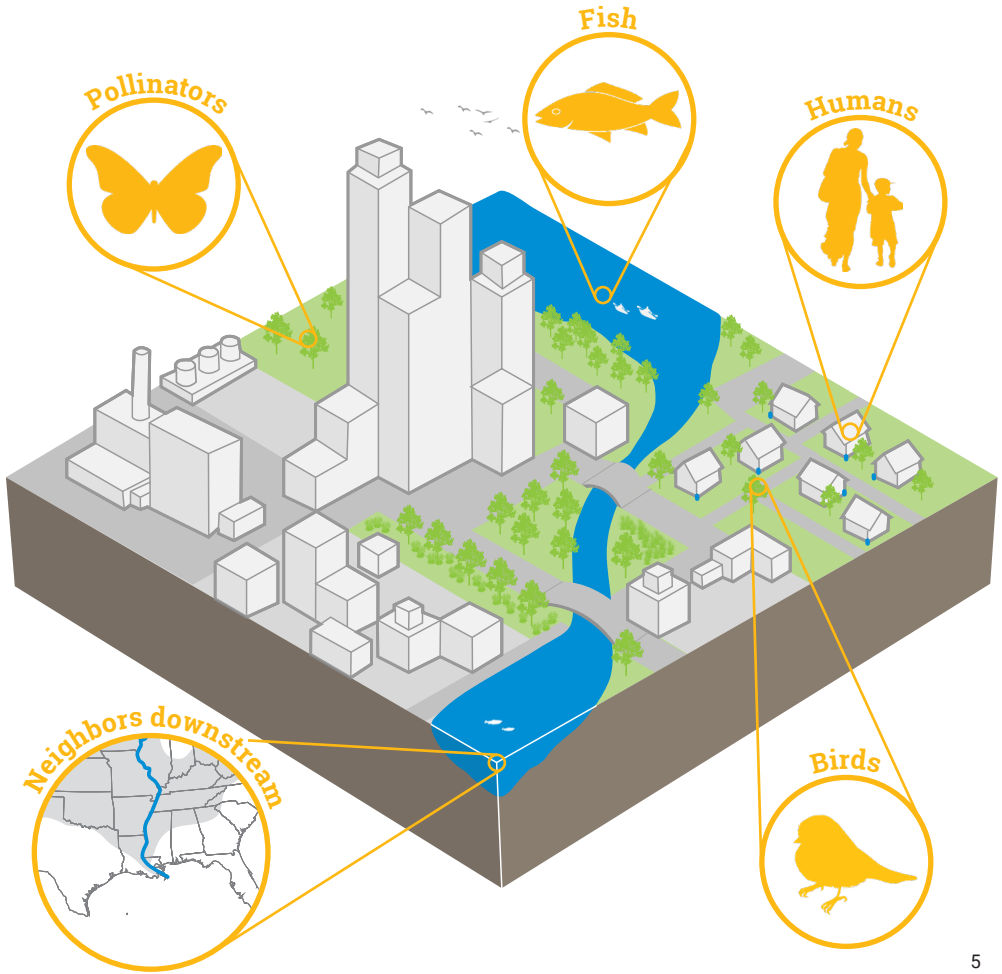
Who Are Our Neighbors?

You probably think of neighbors as being the people who live on your block or in your apartment building. That's true, but what about other people? What about plants and wildlife? What about birds, butterflies, bees and fish? What about trees and flowers?

It's not crazy to think of these things as neighbors. We're all connected by our need for clean air, clean water and a healthy environment.

Unfortunately, what's bad for some of our neighbors is usually bad for the rest. Polluted water is harmful to humans and wildlife alike. Tearing down habitat is bad for animals, but also makes our neighborhoods less enjoyable.

It's also important to think about neighbors who live downstream from us. Minnesotans who pollute the Mississippi River are affecting people in places like St. Louis, Missouri and Memphis, Tennessee. Eventually, our water pollution travels all the way down to New Orleans, Louisiana, and into the Gulf of Mexico.

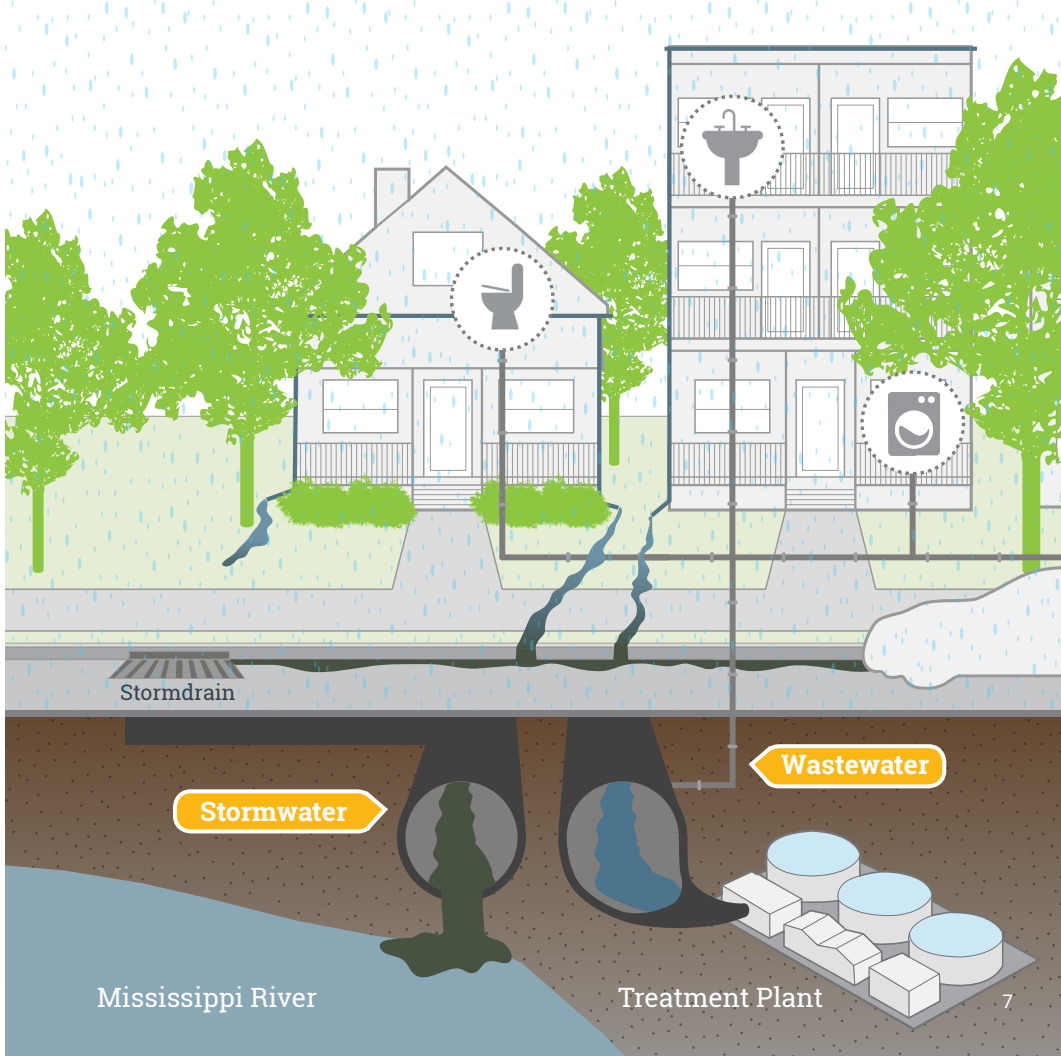


From Your Yard to the River

Have you ever looked at a stormdrain and wondered where it leads? Would it surprise you to learn that it goes directly to the nearest river, lake or other waterbody?

Even if you are miles away from a body of water, anything that goes down the stormdrains will find its way there. That includes the rain and melting snow that runs off of our sidewalks, streets, and yards — along with all the pollution it picks up.

Stormwater runoff is not filtered or treated in any way. It travels through the stormsewers and goes directly into a body of water. The wastewater from our toilets and sinks goes through a separate set of pipes that lead to a treatment facility.



Urban Water Pollutants

Think about all the nasty things you find on the ground — pollutants like trash, leaves, grass clippings, oil, gas, animal waste, fertilizer, road salt, and construction debris. When it rains, all of these things get washed down stormdrains and end up polluting our rivers and lakes.

Common Pollutants

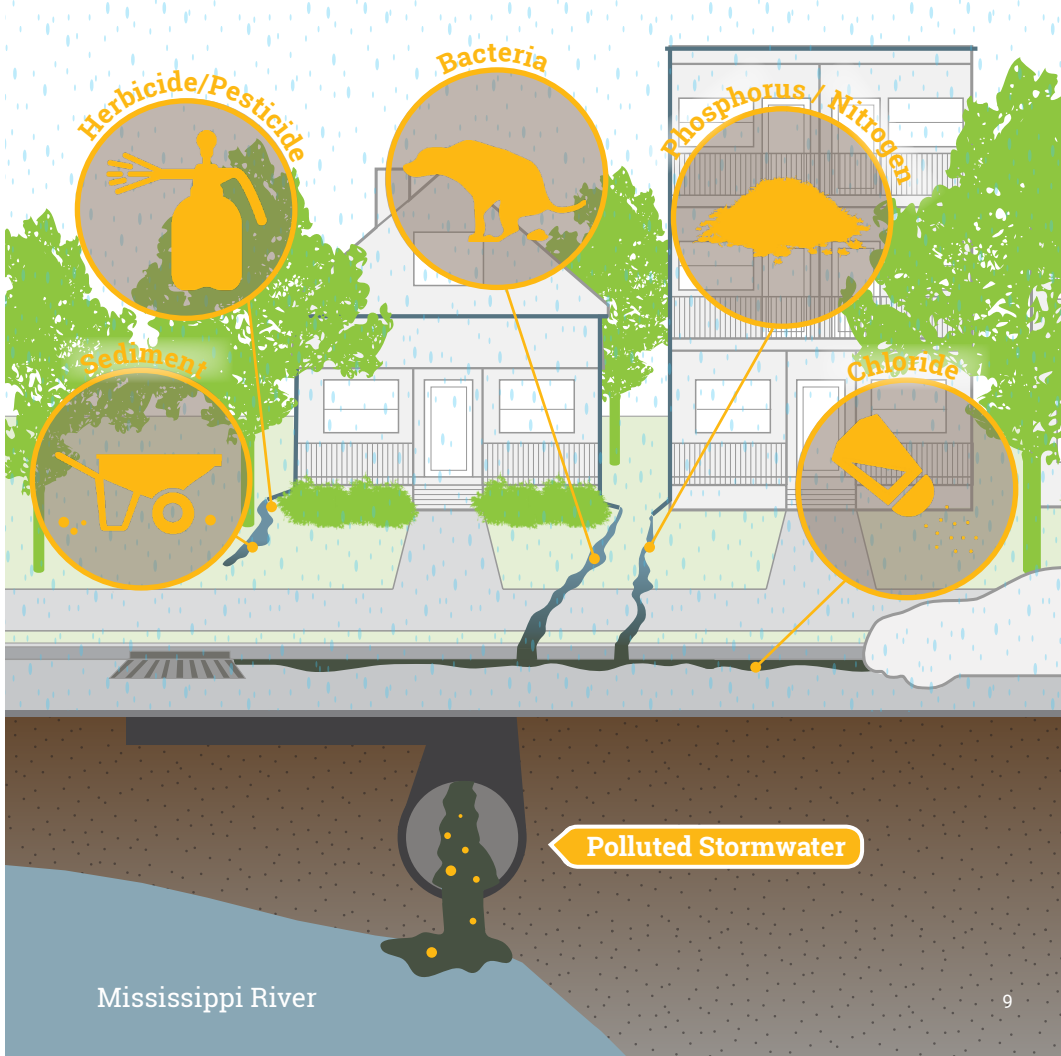
Sediment - Dirt and debris, in the form of tiny particles suspended in the water. It makes the water murky, which harms fish, plants and aquatic wildlife.

Phosphorus and Nitrogen - These nutrients are found in leaves and grass clippings as well as fertilizers. In excess, they harm waters by feeding algae and choking out oxygen.

Bacteria - Microorganisms like *E. coli* that come from animal waste (including pet waste!) and can make people sick.

Chloride - A chemical found in the road salts and deicers we use to keep ice off streets and sidewalks in winter. It is toxic at high levels and prohibitively expensive to remove.

Herbicides/Pesticides - Harmful chemicals used to kill weeds and/or insects are toxic to aquatic life.



Good Neighbor Yard Care

The way you take care for your yard can have a big impact on others.

Spring

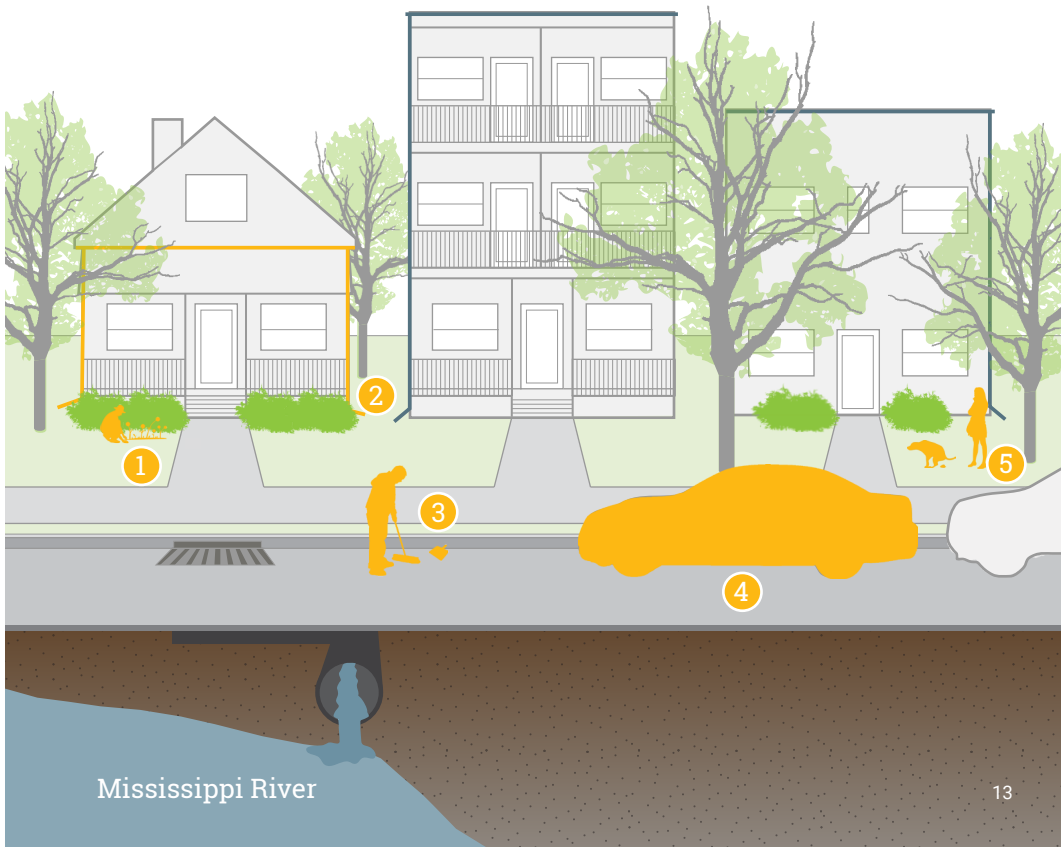
1. **Remove Weeds (or Don't)** - If you don't like weeds, get out early and pull them by hand. This reduces the need for toxic herbicides. Also, you can add a thick layer of mulch to garden beds to block weeds from popping up. But if you and your neighbors don't mind a few weeds, just leave them! Flowering weeds like dandelions actually provide an important source of pollinator habitat.

2. **Mind Your Gutters and Downspouts** - Clean out your gutters and point your downspouts toward vegetated areas that can soak up water (but away from your basement!). You can use downspout extensions to help direct runoff toward suitable areas.

3. **Sweep Up Leftover Salt and Sand** - See any sand or salt left over from the winter? Sweep it up so it doesn't get washed down the stormdrains. You can put it in the trash or save it and reuse it. Don't wait for the street sweeper; if it rains before they clean the streets, this debris will get washed into the stormdrains.

4. **Wash Your Car Responsibly** - Don't wash your car in the driveway; the dirty water will run into the street and down the stormdrain. Instead, wash it at a commercial car wash or in a grassy area.

5. **Pick Up Your Pet's Waste** - Pick up your pet's waste often, especially before it rains. Pet waste contains nutrients and harmful bacteria like *E. coli*. It should be disposed of as solid waste (not composted).



Summer

1. **Mulch Your Grass Clippings** - Mulching your grass clippings and leaving them on your lawn provides the same nutrients as a round of fertilizer. Never blow grass clippings into the street; they will enter stormdrains and pollute waterways with excess nutrients.

2. **Mow High** - Don't cut your grass too short. Set your lawn mower to cut at a height of 3 inches or greater. This will lead to a healthier lawn that resists weeds, drought, and erosion. Longer grass also helps trap pollutants and grass clippings so they don't blow into stormdrains.

3. **A Little Brown is Okay** - If your grass gets a little brown in the summer, do not panic! It is not dying; it is just going dormant. It will perk back up the next time it rains. If you don't mind it, then don't water it.

4. **Water Wisely** - Lawns do not need more than 1 inch of water per week, so avoid over-watering. If you choose to water your lawn, do it in the early morning or late evening so it retains the moisture. Do not sprinkle on hard surfaces like streets or driveways.

5. **Replace Your Turf** - Don't care much for lawns? Replace your thirsty, wasteful turfgrass with deep-rooted native grasses or native-plant landscaping.

Fall

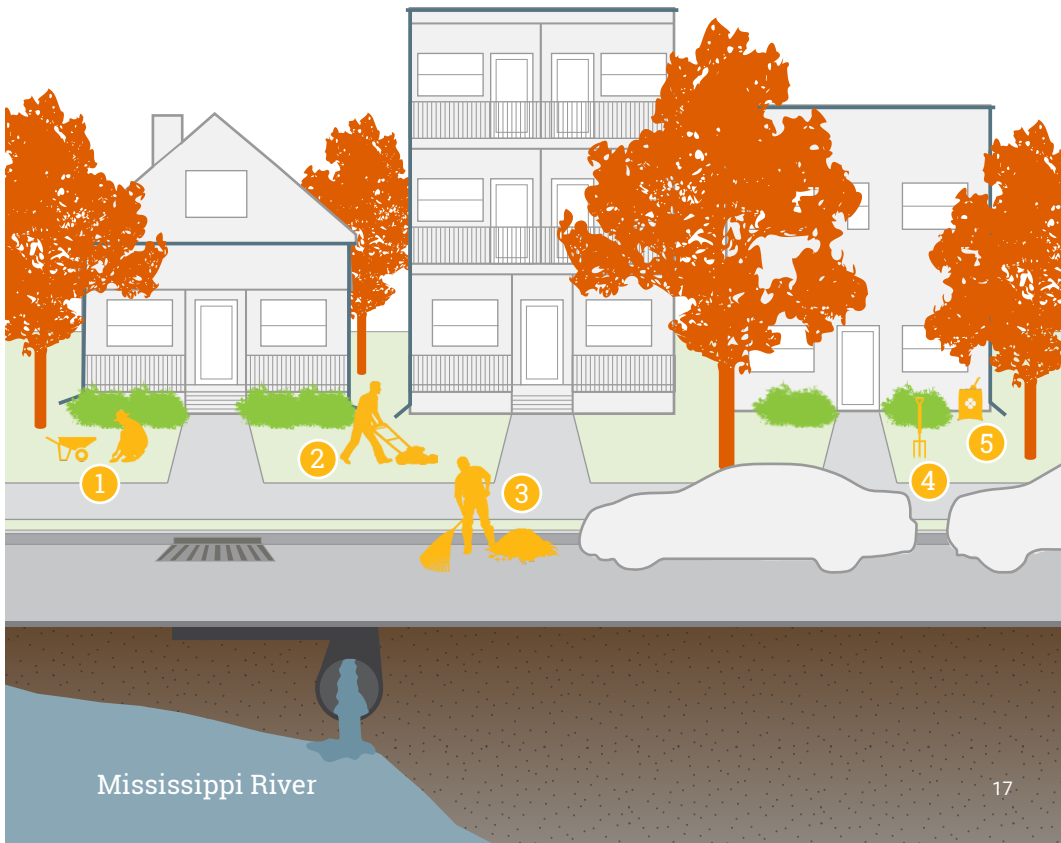
1. **Prep For Spring** - Fall is a great time to plant grass seed. Growing new grass on bare spots will reduce erosion and keep weeds from sprouting up later on.

2. **Mulch Your Leaves** - Don't like raking leaves? Mulch them instead. Chopping them into small bits helps keep them on your lawn and away from stormdrains. It also fertilizes your yard. Mulch frequently, so leaves don't pile up and get too thick.

3. **Rake Your Leaves** - Raking your leaves prevents them from smothering your lawn. It also keeps them out of streets and away from stormdrains. You can compost leaves or dispose of them as yard waste. You can also leave some behind as insect habitat if they're in an area where they won't blow into stormdrains.

4. **Aerate Your Lawn** - Aerating your yard in the fall promotes grass growth and water infiltration while minimizing compaction of your soils. Seeding your lawn after aeration helps new grass grow without the use of fertilizer.

5. **Fertilize Smart** - If you choose to fertilize your turfgrass, only use zero-phosphorus fertilizer. Avoid weed-and-feed combination products, which might not be effective for your specific conditions.



Winter

Did you know many lakes and rivers are contaminated with chloride? This chemical comes from salt and deicers we use to keep ice off of our paved surfaces in winter. One teaspoon of salt contains enough chloride to pollute 5 gallons of water. It's toxic to aquatic wildlife and virtually impossible to remove.

1. **Shovel** - Shovel early and often during a snowstorm so that the snow does not have time to become compacted and turn into ice. Always shovel first before applying either salt or sand.

2. **Select** - All salt and deicers are extremely harmful to the environment, so use them sparingly. Salt does not melt ice below 15^{o}F, so use sand for traction when it is too cold. Always check the effective temperature range of your salt or deicer product.

3. **Scatter** - More salt does not equal faster melting or a safer walkway. Aim for 3 inches of space between salt granules. Use salt and deicer only in critical, high-traffic areas like walkways.

4. **Sweep** - If you see leftover salt and sand on the ground, sweep it up before it finds its way into the stormdrain. You can throw it away as garbage or save it and reuse it later.

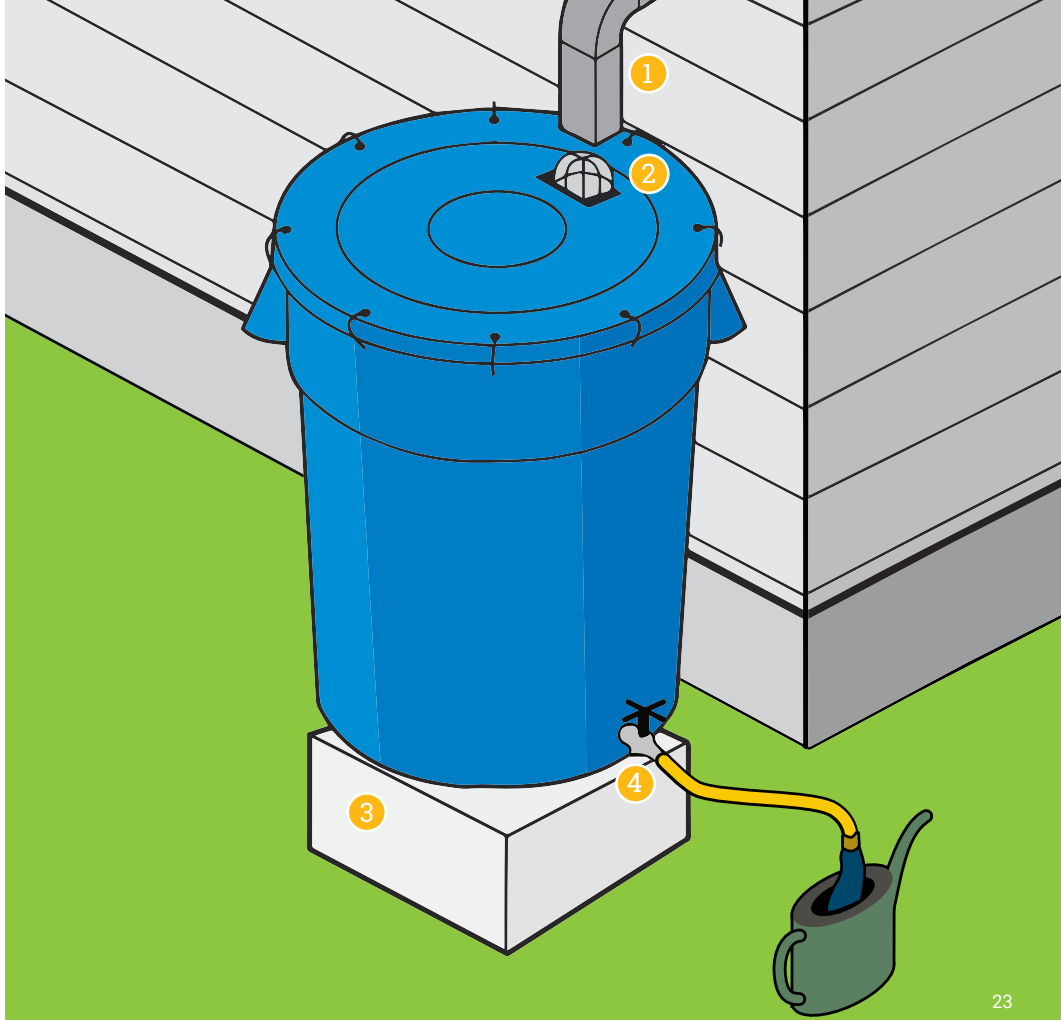
Good Neighbor Landscaping

Own your stormwater runoff and turn your yard into a pollution-filtering landscape.

Rainbarrels

Rainbarrels are containers for collecting rainwater from rooftops. They allow you to save your stormwater runoff so that you can use it to water plants in your yard. This helps conserve tap water and also reduces the amount of runoff carrying pollution from your yard.

1. **Downspout** - Place your rainbarrel under a gutter downspout so it catches rain or snowmelt from your roof.
2. **Screen** - Install a screen on top of the rainbarrel to keep out debris and to prevent mosquitos and other bugs from breeding in it.
3. **Raised platform** - To increase water flow and pressure, raise the barrel off the ground using cinder blocks or another stable base.
4. **Spigot and hose** - Install a spigot and attach a hose so you can easily direct water to your gardens, plants or a watering can.



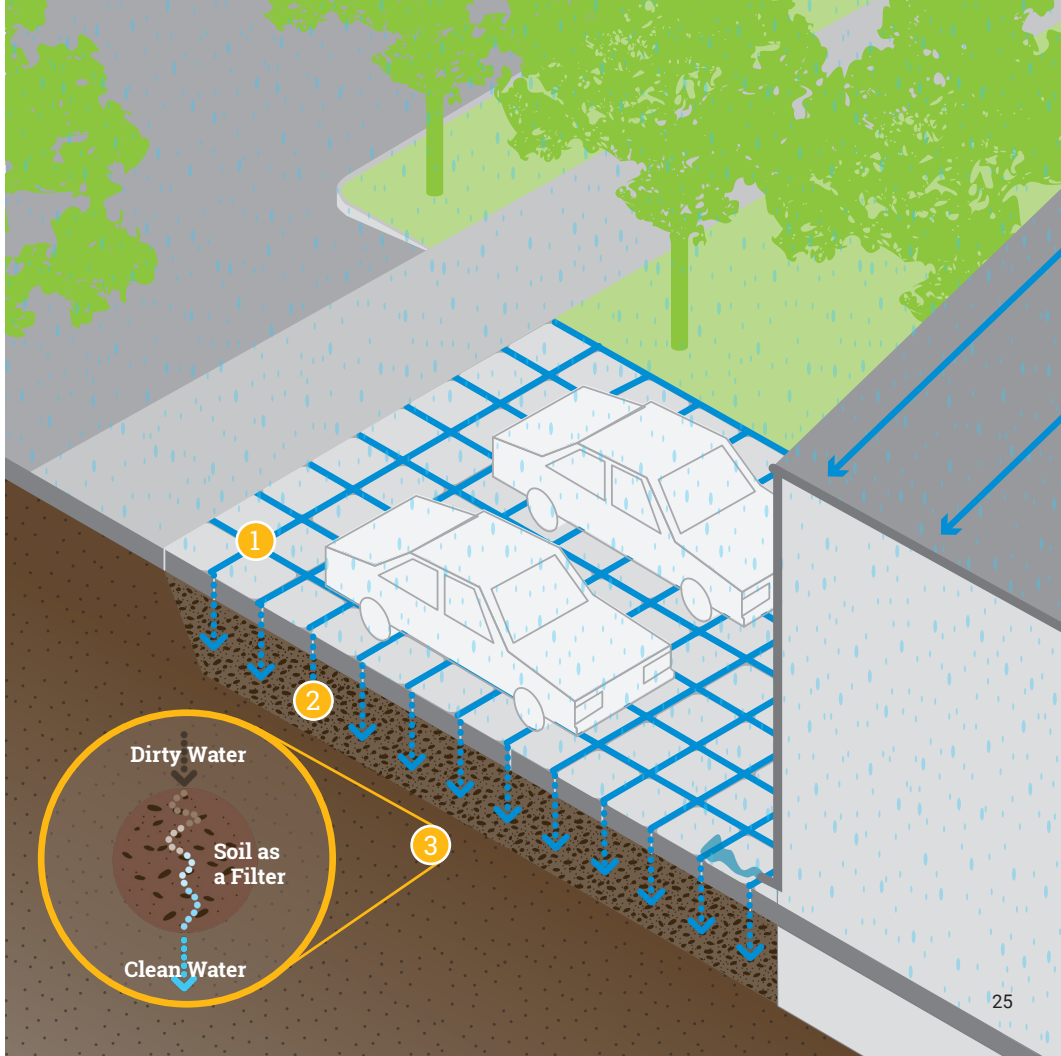
Permeable Pavers

Permeable pavers allow stormwater to soak into the ground by running down into the gaps between pavers. A stone base layer and the ground beneath it filters out pollutants. Permeable pavers are an eco-friendly option for patios, driveways, parking lots and other hardscapes.

1. **Pavers** - Gaps between the pavers are filled with small stone pebbles, which block large pollutants but allow runoff to soak into the ground.

2. **Stone** - One or more layers of compacted stone create a stable base for the pavers. The gaps between the stones create a reservoir, holding stormwater until it has time to soak into the soil beneath.

3. **Soil** - The soil filters pollutants out of the stormwater runoff as it infiltrates downward into the ground.



Raingardens

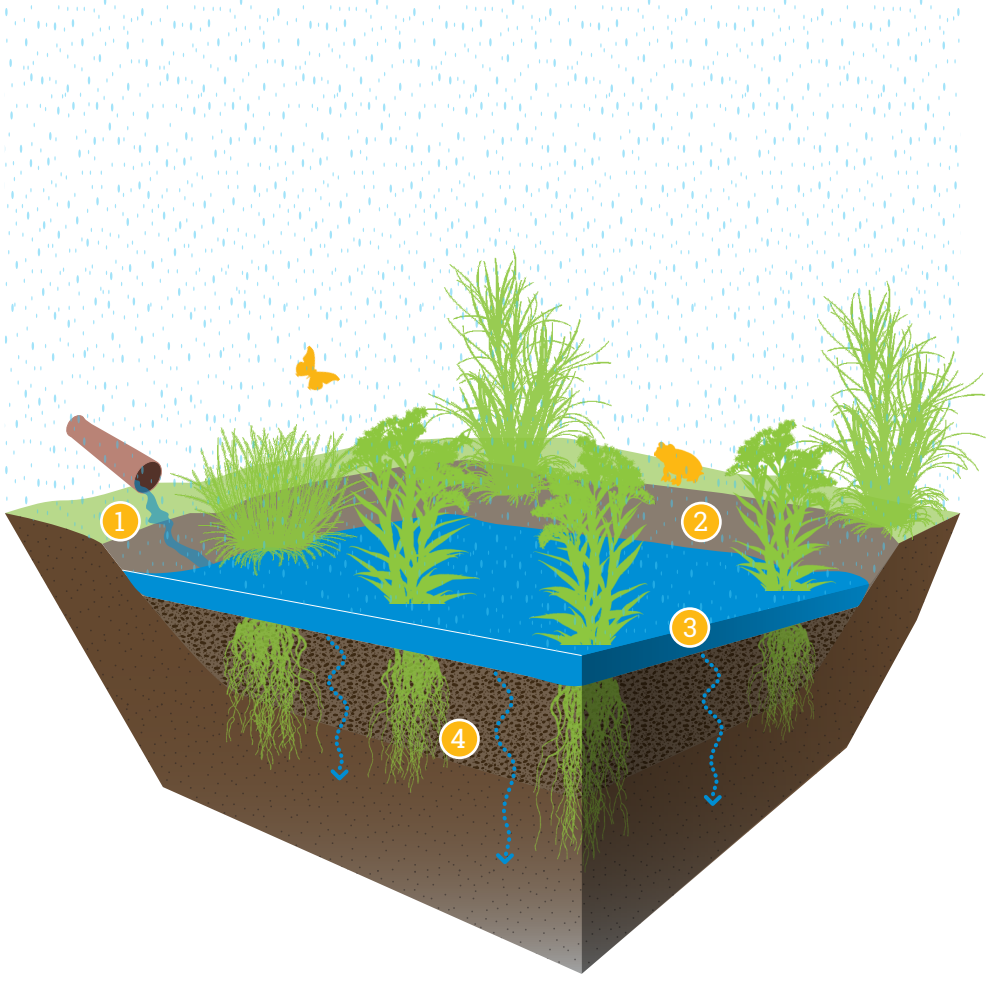
Raingardens are depressed (bowl-shaped) gardens with sandy soils and deep-rooted native plants. They act like natural filters, capturing stormwater runoff and letting it soak into the ground, where the soils trap and remove harmful pollutants. In addition to managing stormwater, raingardens provide beneficial habitat for pollinators and other wildlife.

1. **Inflow** - Raingardens are often situated in low-lying areas so that stormwater flows into them naturally. A gutter downspout or dry creek bed can also help direct water into the raingarden.

2. **Mulch** - A thick layer of mulch spread throughout the raingarden blocks weeds from growing and crowding out the native plants.

3. **Water** - Raingardens are designed to absorb all stormwater runoff within 24 hours. This prevents mosquitoes from breeding in them.

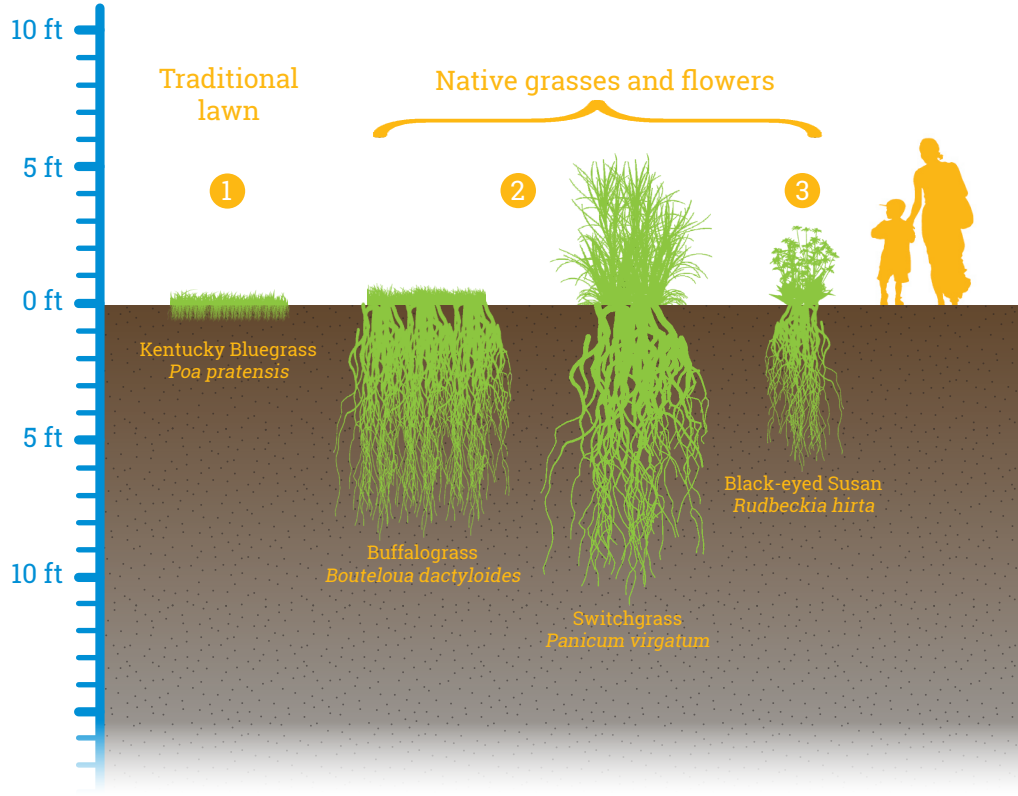
4. **Roots** - Raingardens are planted with a variety of native plants (see page 29). These plants have deep roots that soak up stormwater and break up compacted soil, which helps water infiltrate into the ground.



Native Plants

Native plants are plants that originate locally, and that are adapted to the local climate and soil conditions. They have deep roots that reduce erosion, break up compacted soil and help stormwater soak into the ground. The roots also help the plants survive during drought conditions, reaching deep into the ground for available water. In addition, native plants are highly beneficial to native bees, butterflies and other wildlife.

1. **Traditional Lawn** - Traditional lawns have shallow roots that do not fare well in drought conditions, necessitating extra watering.
2. **Native Grass** - Native grasses have deeper root structures that soak up stormwater and make them drought-tolerant.
3. **Native Flowers** - Native flowers provide all the benefits of native grasses, and also feed pollinators like bees and butterflies.



Trees

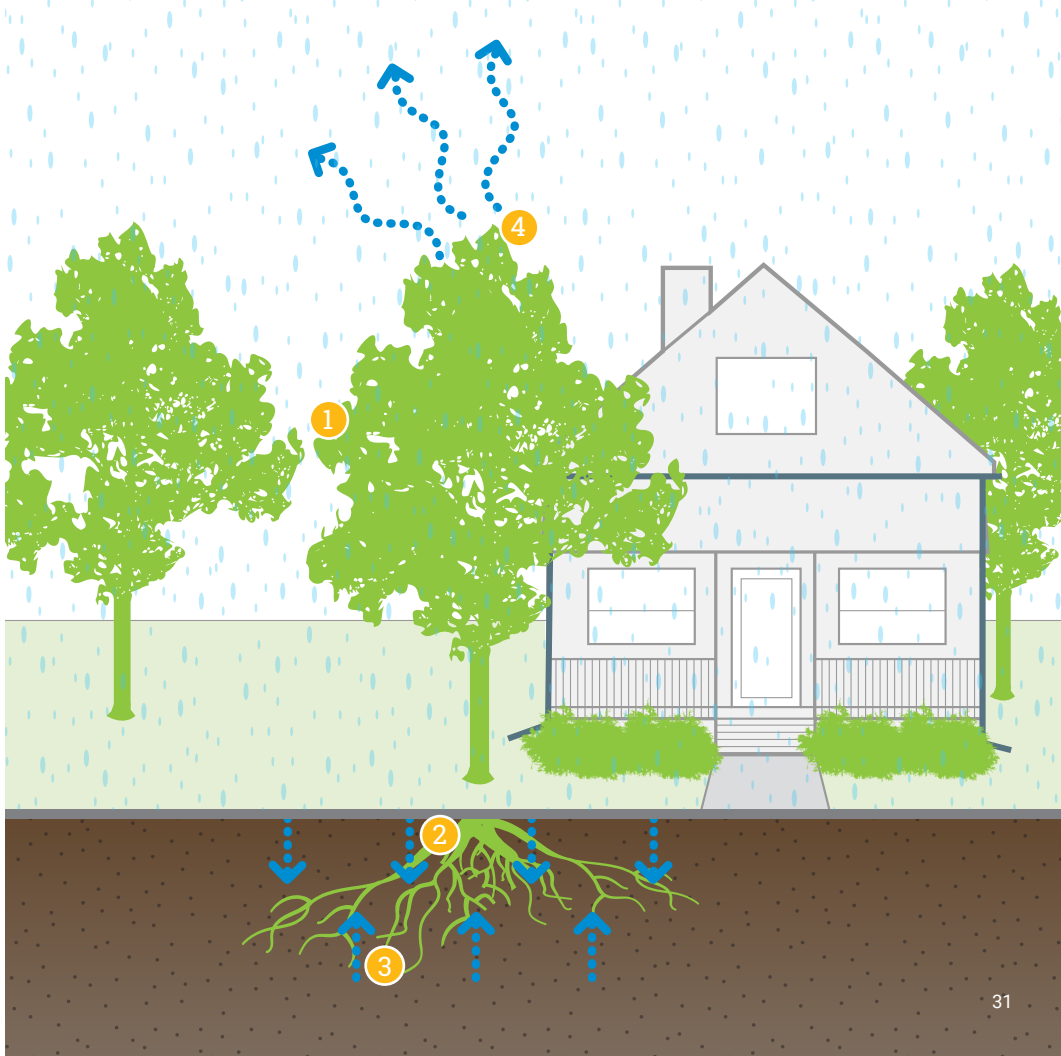
Trees recycle stormwater by capturing it, storing it and returning back into the atmosphere in the form of water vapor. In doing so, they reduce the amount of runoff that carries pollution off the landscape. A study of Minneapolis trees found that a single mature tree intercepts an average of 1,685 gallons of rainwater each year.

1. **Interception** - The tree intercepts rainwater as it falls to the ground. Intercepted water evaporates back into the atmosphere.

2. **Infiltration** - As the tree grows, the roots break up compacted soil, which helps more water (and pollutants) soak into the ground.

3. **Absorption** - The tree's roots absorb water that soaks into the ground, using it as fuel for growth.

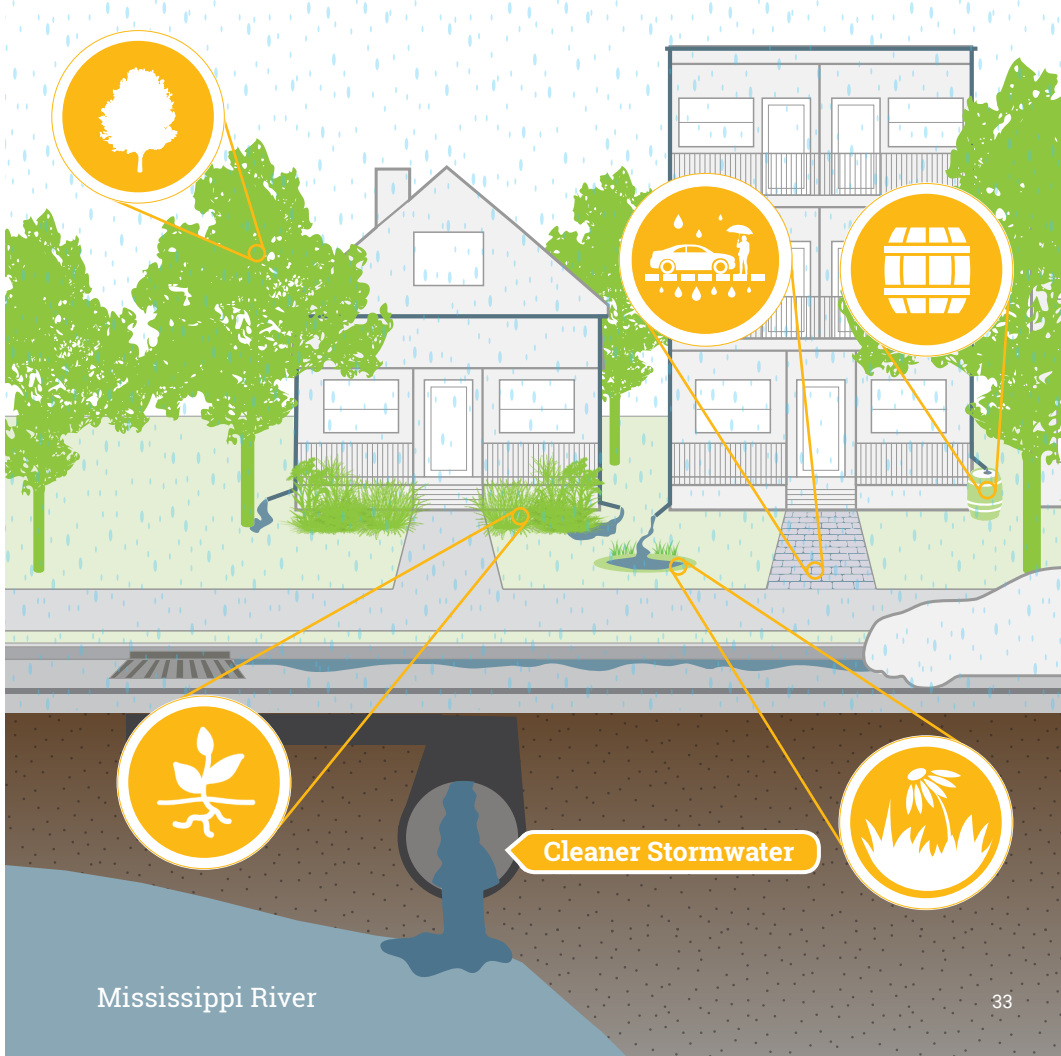
4. **Transpiration** - The tree releases water back into the atmosphere in the form of water vapor.



Greener Together

Imagine a city full of good neighbors. Their rainbarrels, raingardens, native plants and good yard care practices all work together to keep pollution out of the waterbodies we depend on. Stormwater becomes a resource instead of a pollution source, and everyone enjoys access to clean water and healthy habitat.

These practices can also help our communities adapt as our climate changes. Every new raingarden, rainbarrel and tree helps our cities to be able to absorb more stormwater runoff. As extreme weather events become more frequent, this added capacity can help take some of the pressure off of aging stormwater infrastructure.



An Urban Watershed

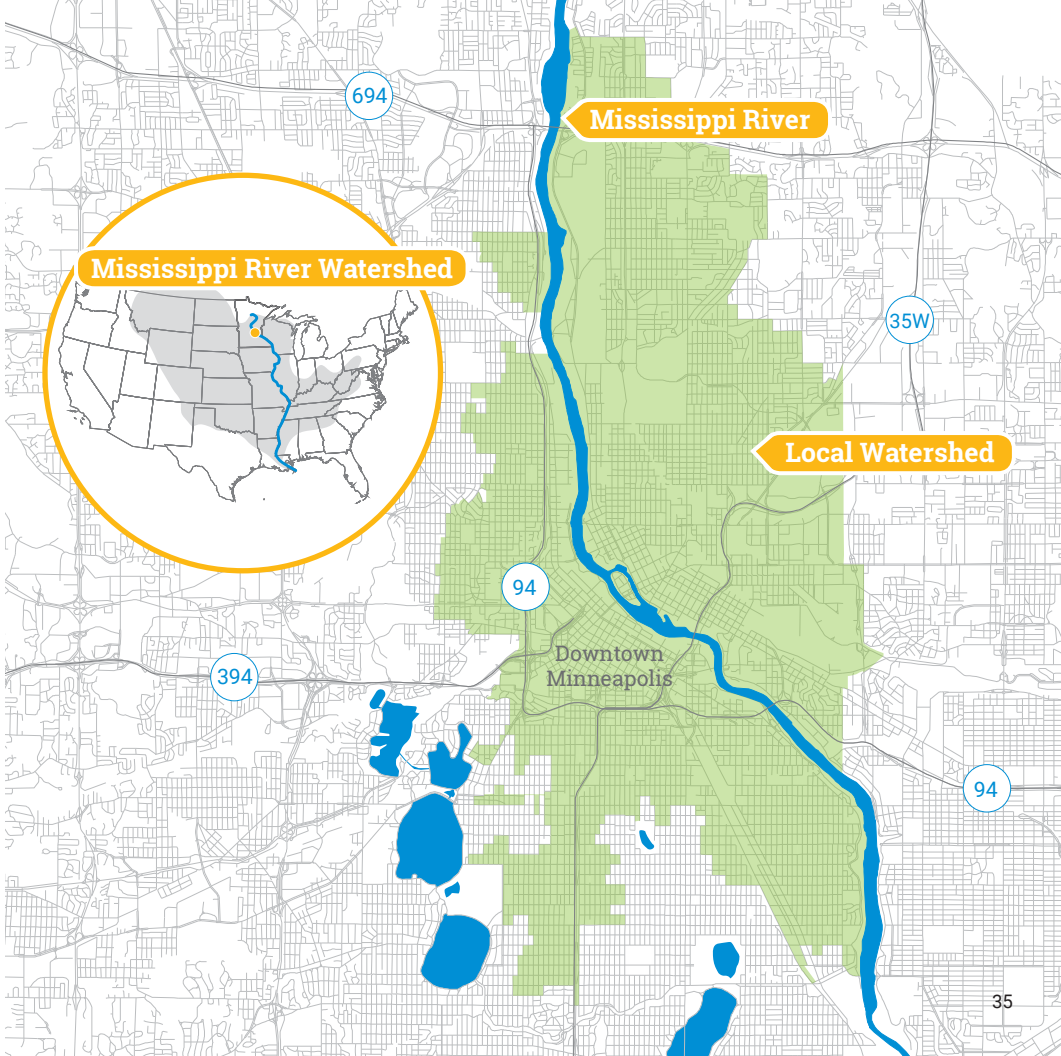
When good neighbors help keep pollution out of waterbodies, what they're really doing is protecting their local watershed.

What is a watershed? Simply put, a watershed is the area of land that drains to one particular body of water. The map on the right shows the boundaries of one urban watershed in particular. This one happens to be managed by a local government unit called the Mississippi Watershed Management Organization (MWMO).

Government organizations like the MWMO help support good neighbors in protecting our water resources. They monitor runoff to inform decisions, provide education to inspire actions, and help fund large-scale projects that capture and treat polluted runoff before it reaches our streams, lakes, wetlands and rivers.

The MWMO's watershed is one of many small watersheds that make up the larger Mississippi River Watershed, covering nearly half of the lower 48 U.S. states. All the water in this area drains to the Mississippi River and ultimately into the Gulf of Mexico.

You can learn more about watersheds, stormwater and water quality at **mwmo.org**.



Notes

Salt & Deicer Comparison

Melting Agent	Lowest Melting Temp.*	Things to Know
Urea	20°F	Promotes algae growth in waterways; over-application can harm plants; relatively pet-safe; slow-acting
Sodium Chloride (NaCl)	15°F	Harmful to plants; harmful to concrete; very corrosive to metal; cheap and abundant
Magnesium Chloride ($MgCl_2$)	-10°F	Harmful to plants; corrosive to metal; relatively high cost
Potassium Acetate (KAc)	-15°F	Can cause surface slick-ness; lowers oxygen levels in waterways; biodegradable; relatively high-cost
Calcium Chloride ($CaCl_2$)	-20°F	Corrosive to metal; leaves slimy residue; less harmful to concrete
Sand	No Melting	Provides traction only; potential pollutant; can be swept up and reused

* Refers to pavement temperatures.

MWMO SM

Protect it. Pass it on.

MISSISSIPPI WATERSHED MANAGEMENT ORGANIZATION

www.mwmo.org

The **Mississippi Watershed Management Organization** works to protect and improve water quality, habitat and natural resources in an urban watershed that drains directly into the Mississippi River. We are a joint-powers local government unit and one of approximately three dozen watershed organizations in the Twin Cities metropolitan area.

MWMO℠

Protect it. Pass it on.

MISSISSIPPI WATERSHED MANAGEMENT ORGANIZATION