

What watershed are you drinking?

Turn on your faucet. Meet your watershed.



Water also seeks the path of least resistance as it moves downhill.

The Grand River Watershed is catching these drops and directing them to the Grand River and then into Lake Michigan.

Each time it rains, every drain, channel, creek, stream and river is busy moving water drops through the watershed and eventually to your faucets.

Water - What goes around comes around

Your water traveled not only through the watershed, but also through the earth's hydrologic cycle.

Consequently, water is very old. The amount of water on earth today is the same amount we have always had and always will have. Water flowing from your faucets might be the same water dinosaurs splashed in millions of years ago.

Water is continuously rising into the atmosphere and falling back to earth as precipitation. It moves through the watershed, soaking into the ground or flowing over the surface as run-off into rivers, and then on to the oceans. Powered by

the sun and gravity, the hydrologic cycle infinitely repeats itself.

Watersheds drain into other watersheds.

What do the Pottawatomie Bayou, Morrison Lake and Tyler Creek have in common? They're all located in the Grand River Watershed, each surrounded by its own smaller sub-watershed.

Small watersheds nest inside larger ones, yet every stream shares its final destination with all the others.

No two watersheds are the same, from millions of acres, like the land that drains into the Great Lakes, to less than an acre in a small farm field.

The river is the report card for its watershed.

Finding a clean source of drinking water has always been a priority. But protecting water's life-supporting properties was not well understood at first. As communities expanded in the watershed, pollution in rivers increased and water quality

declined as a result of human activities.

The Grand River was profoundly affected by nearly two centuries of use as a log highway, waste sewer and power source. Many springs, creeks and streams disappeared after being straightened, covered, filled and channelized.

We've learned what changes were needed. For example, industrial sources of pollution are now better controlled, so water quality in the Grand River has improved in the past several decades.

But we're now facing a tougher task. Sources of pollution are much more varied and widespread, no longer easily traced through a single pipe to one source.

Our attention is focused on the challenge of getting every individual to help reduce pollution from their part of the watershed.

Learning how a watershed affects the river and how we can do better is a lesson we need to share.

Restoring the Grand River's health and making sure that the watershed can sustain the river for future generations will be the report card on our progress.



Most households turn on faucets an average of 70 times per day. As the water rushes out, have you ever wondered how it got there?

Have you met your watershed? The Grand River Watershed?

In simple terms, a watershed is the land that "sheds" water to a shared body of water and is defined by the natural boundaries of water flow.

The Grand River is the thread that stitches the fabric of our watershed together.

Watersheds connect drops

The single most-important force shaping the earth's surface is moving water. Water has weight which is dragged downward by gravity.

Introduction to the Watershed Series

Part One

What watershed are you drinking?

Although we typically identify where we live in terms of cities, zip codes, or school districts, we also live in watersheds, defined by the flow patterns of rainwater or snowmelt. As part of the earth's hydrologic cycle, watersheds help recycle water.

Whenever a body of water is in trouble, one of the first things a water-quality specialist investigates is its watershed. Water quality is closely tied to what is happening on the land surrounding the water body.

Part Two

Ten things your parents didn't tell you about non-point source pollution

Water quality declines where land use exposes rainwater or snowmelt to various contaminants — or non-point sources of pollution. This arises from things like exposed construction sites, animal or pet waste, litter, leaking cars and uncontrolled farm runoff.

It is the No. 1 source of pollution to the Grand River. As runoff crosses parking lots, chemical lawns and farms, it picks up whatever is on the ground and takes it to the river.

Part Three

Have you hugged your green infrastructure today?

In the past, rain falling on the Grand River Watershed fell mostly into forests where trees caught and filtered it before it flowed into the river. Today, pavement and sewer systems (gray infrastructure) have diminished the water treatment services of these natural systems (green infrastructure).

Such natural systems have become more scattered, isolated and less able to create healthy watersheds and better water quality.



Even if you can't actually see the Grand River, you are still part of the Lower Grand River Watershed

O-wash-ta-nong means "far-away-water" in native American. It could be the first name given to the river.

French explorers in the 17th century recorded the river's name as "le Grande Riviere." Why "grand?" Today's dictionary suggests that the river is "magnificent," "splendid," "stately" and "impressive."

The Grand River is so small at its source in Hillsdale County that you can jump across it and so wide at its mouth that Great Lakes freighters sail up it in Grand Haven.

What covers over 2,900 square miles and sleeps nearly 1 million people?

The Lower Grand River Watershed, part of the Grand River Watershed.

Where does the Lower Grand River Watershed begin?

Our part begins where the Grand River and the Looking Glass River meet in downtown Portland, passing through Grand Rapids and continuing on to Lake Michigan at Grand Haven.

Water left Michigan's handprint on the earth

Whenever someone from Michigan is asked, "Where do you live?" we offer our hand as a convenient map and point to our home.

Six degrees of separation

Here's how you might be connected to Lake Michigan:

- Your rooftop gutter is connected to your downspout
- Your downspout is connected to your driveway
- Your driveway is connected to the street
- Your street is connected to a storm drain
- The storm drain is connected to the Grand River
- The Grand River is connected to Lake Michigan.

The Grand River flows 270 river miles from its source and drops 460 feet on its way to Lake Michigan, a difference in elevation about the height of a 45-story building.

The ice trade

During 19th century winters, blocks of ice were cut from Spring Lake and other local lakes, some used locally, some shipped to Chicago and other cities. Ice famines resulted when unseasonably mild weather affected ice on the lakes. Huge blocks of ice were cut and stored in sawdust in icehouses, then sold to the consumer for use in ice boxes to keep food fresh. The natural-ice trade remained strong until the 1920s.

The rapids

It was reported that from about a mile away, you could hear their roar before you could see them, even though the thick forest muffled the sound. When you saw them, it was a really splendid sight, a rolling cascade of water dropping nearly 20 feet. Taking advantage of this drop, the country's first hydro-electric plant came online in Grand Rapids in 1881.

There are three covered bridges in the Grand River Watershed, 25 places to rent a boat and five dams along the Grand River.

Logging and timber

In the mid-to-late 19th century, the river transported logs for the timber industry and sawmills powered by the river were established along the stream corridor where new communities often emerged. Steamboats ferried products between Grand Rapids and Grand Haven. When the trees were all cut, there was concern that Grand Rapids would die out if the forests were depleted.

Nearly all of the fish species found in Michigan are present in the Grand River at one time of the year or another.

Map designed by
Ann's Water
Resources
Institute,
Grand Valley
State University



Stay in touch with your watershed at www.lgrow.org.

You do make a difference when you...

Part 1. Know your flow

Part 2. Reduce your exposures

Part 3. Use your greens



Know your flow.

As you sit reading the newspaper, look out your window. Have you ever wondered where snowmelt or rainwater ends up?

Very few of us know how water moves from our yard, throughout our neighborhood to Lake Michigan and back again. Do you?

Follow the water.

- After rain or snowmelt runs off your roof, notice the different routes it takes as it's pulled downhill. How much of it puddles in your yard and soaks into the ground?
- Track the rain that leaves your yard. Look around your neighborhood and notice how the land is covered. Where will rain soak into the ground? Where will it run into the street? Will it flow to a storm drain, a roadside ditch or directly into a water body? In areas with a lot of pavement, a storm-drainage system might be collecting runoff.
- Storm drains are typically rectangular metal grates, often found near the edge of the street. When runoff reaches a storm drain, it is usually routed directly to a water body with no treatment, discharging any pollutants it picked up along the way. Find out from local officials where your storm drain discharges.
- Create a map to illustrate how rain moves in your yard showing where it soaks into the ground and where it leaves your yard. The better we understand the paths that water takes from our yard and in our neighborhood, the more we appreciate the mechanics of our watershed.

In a watershed, we all live on water.

Now that you've discovered how runoff leaves your yard, become acquainted with the water bodies nearest your home.

Search for nearby water bodies by walking around your neighborhood or noticing them from your car. Think about a nearby creek, river or stream. Observe when you cross over a bridge.

- Look on a map — where does it start? Where does it end?
- How far away are you from the Grand River? Lake Michigan?
- What are the name(s) of nearby streams, creeks, rivers or lakes?
- How did they get their name(s) ?
- Where do they begin (their headwaters)?
- Where do they end? Where does the next water body flow?
- What are the present uses of the water body, such as for irrigation?
- Were there any past uses, such as for drinking water, power generation or transportation?
- Can you swim in it? Would you want to? Why not? What can you do to make it better?
- If you live right on a creek, lake or river, is your care of the water even more important?

What's your drip code?

How to read a watershed

We know our zip code, we know our school district, some of us even know our latitude and longitude. It's time to know our watershed.

- Finding your watershed requires little more than understanding gravity and the basic rules about water flow.
- Watersheds can be small or large and they nest in other watersheds. One example can be our road system, which comes in various sizes nesting in a similar hierarchy, starting with:

1. Your driveway
2. The street where you live
3. A primary street with more traffic
4. The interstate

- Connect all the highest points of land around you. The boundaries of watersheds are defined by hilltops that form drainage divides. Think of a watershed as a bathtub. Any water that hits the sides of the tub collects in the bottom. A watershed funnels water from the land and takes it to a river.
- How far do you have to travel before you reach a different watershed?

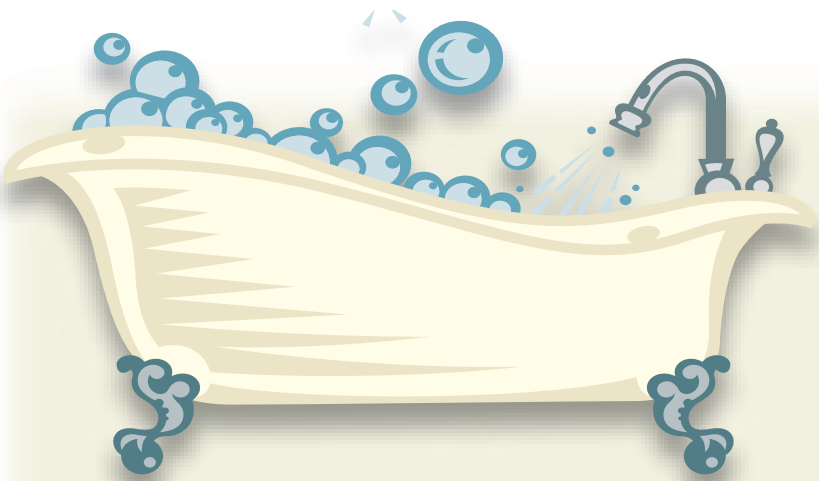
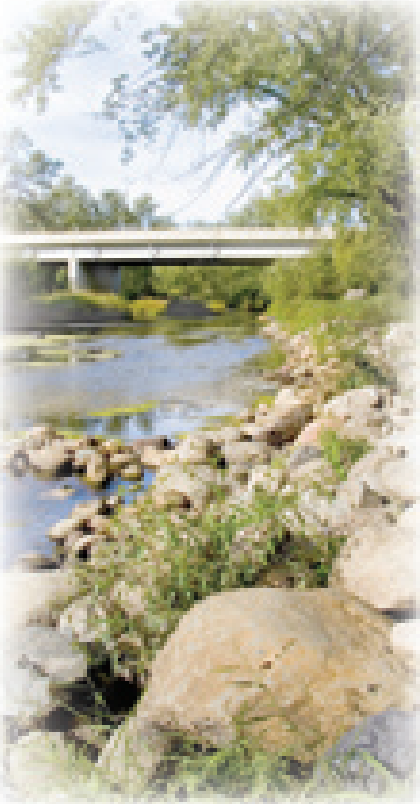
Watersheds exist — we need only to look for them.

Get wet. Not knowing where to begin is common. Begin now. Begin anywhere. Everyone is a leader. Go make ripples.

Dive in and learn more. Request watershed talks for your group. Participate in activities around water. Use the library. Google.

Share information about water. Use bulletin board displays. Include articles in newsletters, on Web sites or other social media. Use music, poetry and art.

Get outside and see what's happening to your drinking water. Take field trips, boat, canoe, fish, kayak, hike, picnic. There's lots to do in this watershed.



Living in the Lower Grand River Watershed - It's like sharing your bathtub with 1 million other people

This watershed is a gathering place. It's where people's lives are connected by falling rain and flowing water, where water quality is a vital part of its economic possibility.

Who speaks for the watershed?

The Lower Grand River Organization of Watersheds (LGROW) was formed to work with West Michigan communities in restoring, protecting and enhancing water quality in the Grand River Watershed.

LGROW, an agency of the Grand Valley Metropolitan Council, provides a framework for creating opportunities to achieve local benefits that flow across watersheds.

Sub-watershed groups take the lead in improving water quality at the grassroots level, emphasizing local interest and commitment. LGROW serves as an umbrella organization for these groups, made up of people living and working in several sub-watersheds, such as the Rogue River, Thornapple River, Sand Creek, Coldwater River, Spring Lake and Bear Creek.

Through the joint efforts of its many partners, LGROW is acting to ensure a healthy and sustainable Grand River Watershed by:

1. Working together to solve watershed problems
2. Recognizing and sharing accomplishments and successes
3. Collectively setting priorities
4. Ensuring local priorities are represented in regional and statewide efforts
5. Identifying and pursuing common goals and strategies
6. Preparing a Lower Grand River Watershed Management Plan
7. Organizing and maintaining watershed-based information
8. Tracking watershed conditions and measuring results
9. Promoting best management practices
10. Preserving local decision-making while encouraging regional cooperation

Watershed management is a strategic action for West Michigan. The more partners that sign on, the stronger and more influential LGROW will be for improving water quality. LGROW sees its efforts as a long-term investment in West Michigan communities.



No resource is as precious as clean and safe water.
Our legacy starts with our commitment to improving water quality.
Our responsibility is to go in that direction.

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Part 2 of 3
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