

Indiana Water Monitoring Council

Maximizing resources through improved communication,
coordination, data sharing, and collaboration



WATER IN THE NEWS

Indiana Vision 2025

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INSIDE THIS ISSUE

Indiana Vision 2025	1
Save the Date!	2
New Lake and River Enhancement Report Monitors Water Quality before Sewer Implementation	3
Wabash Sampling Blitz	3
Wetland Program Plan Input Sessions	4
Environmental Protection Agency's Adopt Your Watershed Program	4
Excerpt on How to Build a Rain Garden from <i>This Old House</i>	5

Indiana Vision 2025: A Plan for Hoosier Prosperity

The mission: "Indiana will be a global leader in innovation and economic opportunity where enterprises and citizens prosper."

In early 2012, the Indiana Chamber officially unveiled its new long-range economic development plan called *Indiana Vision 2025*. It was developed by a 24-person task force of business and association leaders from throughout the state. The ultimate goal is a very important one: to make our state an even better place to live, work and raise a family.

~Preface from Water and Economic Development in Indiana: Modernizing the State's Approach to a Critical Resource

Why water? The Indiana Chamber of Commerce has been asked the same question over the years regarding education and a few other topics. The answer: Water, like the students in school who go on to become company leaders and comprise the future workforce, is a jobs and economic development issue. In Indiana, we build things. It takes plentiful supplies of water to do so. In Indiana, we want to continue to grow and thrive. Water is one of the necessary elements to support that growth. Our state has an economic advantage right now with its water availability. Droughts, however, do happen – remember 2012 – and without proper management our water strength will become a liability. The Indiana Chamber has called for a statewide water resource plan for a number of years. The task force that formed our *Indiana Vision 2025* economic blueprint identified it as one of the key goals in the plan. The time is now to begin what will be a long, but important, process to “ensure adequate fresh water for citizens and businesses.”

Indiana Vision 2025 Continued...

Water is a valuable resource and Indiana, unlike many areas of the country, is fortunate to have abundant water resources. The state has the highest fraction (in the country) of its economy that requires abundant water supplies (Rosaen, 2014). We have built an economy that expects water when it needs it. While current high capacity users are accessing the resource, local shortages have and will continue to occur. Today, only with conservation and proper management, can the state's rivers, streams, lakes, and aquifers sustain current water needs. Future demands will increase with economic growth and industrial development, increasing the need for more formal and technical methods to meet our water supply needs. Just as water supplies are based on natural conditions that vary from place to place, the demands for water fluctuate throughout a given year and are different between hydrologic basins. This report provides lawmakers, water consumers, and all Hoosiers with useful data that can guide the development of new laws to help manage critical resources and preserve and protect the many water assets of Indiana. Recognizing that water and its many uses – including municipal, industrial, agricultural, and recreational – are critical to economic growth and sustainability, several states are already implementing plans that integrate the management of this resource on a statewide basis. The level of investment in these efforts reflects the specific needs of the state and the level of commitment to water management. States like Texas and Florida spend in excess of \$500 million each year on water supply planning, while others like Minnesota and Oklahoma spend around \$50 million each year on similar programs. Developing and maintaining a vibrant economy in Indiana means investing in the state's water infrastructure. An evaluation of the scope and magnitude of similar programs around the country and an analysis of available hydrologic data in Indiana suggests that water planning and analysis in the state will require substantial annual investments. If water is viewed as a priority,

Indiana should begin drafting a comprehensive water plan. The report is a first step in that process.

The full report and other related documents can be found at:

<http://www.indianachamber.com/index.php/studies-reports/indiana-vision-2025>

Save the Date!

The Indiana Water Monitoring Council will be hosting its annual symposium entitled: **Indiana Agriculture and Water Monitoring** at the Indiana Government Center South on **December 11, 2014** from 9:00 am to 3:30 pm. This year's symposium will focus on helping participants realize the importance of monitoring for both water quantity and quality as it relates to agricultural practices and planning. Presentations by water scientists, researchers, and members of the agriculture community will help identify what types of monitoring and practices have been and are being done, and will help frame the discussion on what important gaps may still exist. Topics on nutrient management and soil health, useful monitoring networks and techniques, conservation practices, soil moisture monitoring, and emerging agriculture irrigation practices are being planned.

You can register for the free symposium here: <http://www.inwmc.org/page-303781>

New Lake and River Enhancement Report Monitors Water Quality Before Sewer Implementation

The Center for Lakes and Streams based out of Grace College in Warsaw, Indiana completed a LARE funded study to establish baseline water quality conditions for the Barbee Lakes chain before the installation of a public sewer system in 2015.

From the Executive Summary:

Stream sampling for physical and chemical parameters occurred biweekly from September 2012 through August 2013 for each of the 13 stream sampling sites. Stream sites were also measured for *E. coli* on 10 separate occasions during June-August 2013. Stream invertebrates and streambank erosion were evaluated using the Hoosier Riverwatch methodology. In-lake sampling for physical and chemical parameters was conducted monthly during June-August 2013 for the seven lakes of the Barbee lake chain and for the two lakes of the Chapman lake chain. To establish a nearshore baseline *E. coli* snapshot, 59 representative sites were sampled around the shorelines of the lakes on July 2, 2013. Shoreline erosion was evaluated by visual survey of lake shoreline as well. Several important results were identified in the present study. About half of all shoreline in the Barbee and Chapman lake chains was composed of concrete seawalls. Though relatively small proportions of the lake chain shorelines were eroding, the high occurrence of concrete seawalls across the chains likely allowed eroded sediment that was present to be continually transported around the lakes during windy conditions and times of high boat traffic.

Lakes generally showed higher nutrient concentrations in bottom waters compared to surface waters indicating a combination of algae uptake near the surface and internal loading of nutrients to the lake from the sediment near the bottom. Lake *E. coli*

samples were all well below the EPA human health threshold of 235 cfu/100 mL while stream *E. coli* samples were over the health threshold more than 60% of the time. The Barbee showed high loads of sediment, phosphorus, and nitrogen in the dominant loading streams (Grassy Creek and Putney Ditch) relative to the largest loading stream (Crooked Creek) in the Chapman chain.

The highest priority for future work is a follow-up study repeating the same methodologies and study sites once the sewer system installation is complete. Most previous management recommendations by earlier diagnostic studies of each lake chain are still valid presently. Agriculture is common in both lake chain drainage areas, so agricultural best management practices are likely the most effective management tool to improve and protect Barbee and Chapman lakes. To be sure, an analysis of current agricultural practices followed by a study to determine the most effective best management practice implementation strategy is warranted.

Wabash Sampling Blitz

Since the fall of 2009, volunteers throughout the Region of the Great Bend of the Wabash River watershed complete a snapshot assessment of water quality throughout the watershed. In the spring of 2011, we expanded to include sample sites within the Wildcat Creek watershed.

Volunteers monitor temperature, water cloudiness (turbidity), nutrient levels, and pathogen concentrations. Want more information about the blitz and see the 2014 results? You can find that here:

<http://www.wabashriver.net/wabash-sampling-blitz/>

Want to Volunteer? You can sign up here:

<http://www.wabashriver.net/blitz-registration/>

Wetland Program Plan Input Sessions

The Indiana Department of Environmental Management will be reviewing the highlights of its draft wetlands program plan and we will be seeking your input on specific action items. It would be helpful to our meeting planning efforts if you could **RSVP** via the below Survey Monkey link. The draft plan will be posted later this week and the comment period will be open for two weeks. Stay tuned for that!

<https://www.surveymonkey.com/s/WPPInput>

WARSAW – Monday, Oct 6th 1:00-3:00 PM
Kosciusko County Community Foundation
102 E Market Street
Warsaw, IN 46580

Building sits on the corner of E. Market St and

Buffalo. Guests will need to park in the South Buffalo St. Municipal Parking Lot that is directly across from Giverny Fitness Studio - building is just two doors down, not a far walk. No parking passes will be needed, but please do not park in the reserved spots.

GREENWOOD – Thursday, Oct 9th 1:00-3:00 PM
Greenwood City Center
Council Chambers Room
300 S Madison Avenue
Greenwood, IN 46142
Parking is on the north side of the building.

Thanks in advance for making the time. Looking forward to your energy and input to help us protect and improve our wetlands resources!
See you soon!

- *The Wetland Program Planning team*

Environmental Protection Agency's Adopt Your Watershed Program

EPA's Adopt Your Watershed program challenges you to serve your community by taking part in activities to protect and restore your local watershed.

Visit their on-line Adopt Your watershed database of more than 2,600 watershed groups. Learn about opportunities to get involved in activities. Once you locate your watershed, simply click on "citizen-based groups at work in this watershed" to find a list of organizations that can help you get involved in activities such as water monitoring, stream cleanups, and storm drain marking.

If you can't find a group to join or want to organize your own activity, they have also included a [Watershed Stewardship Toolkit](#) with nine things you can do to make a difference in your watershed.

A Watershed Stewardship Toolkit includes ways a person can make a difference in their watershed by:

- Becoming a volunteer monitor
- Organizing a trash cleanup
- Building a rain garden
- Organize a stream drain marking project
- Greenscape your yard
- Education the community about water quality
- Advocate for low impact development in your area
- Start a watershed organization

For more information about the program and the toolkit visit: <http://water.epa.gov/action/adopt/index.cfm>

Excerpt on How to Build a Rain Garden from *This Old House*

BY: JEANNE HUBERT THIS OLD HOUSE MAGAZINE

First, what is a rain garden?

A rain garden is a shallow depression that is planted with deep-rooted native plants and grasses. The garden should be positioned near a runoff source like a downspout, driveway or sump pump to capture rainwater runoff and stop the water from reaching the sewer system.

But why plant one?

During a downpour at a typical house in many municipalities, water gushes out of downspouts, across lawns treated with pesticides and fertilizers, into an oily street, and, finally, down a storm drain that dumps that pollution along with the water into a stream, river, or bay. By building a rain garden, you can divert your gutter water into an attractive planting bed that works like a sponge and natural filter to clean the water and let it percolate slowly into the surrounding soil. Installing a rain garden isn't difficult if you're willing to dig or you bring in machines to help. Ask your local Cooperative Extension Office for specifics about soil mix, garden size, and plants for your area. Then you're ready to build.

The plants and amended soil in a rain garden work together to filter runoff. Generally, a rain garden is comprised of three zones that correspond to the tolerance plants have to standing water; the better a plant can handle "wet feet," the closer it is placed to the center of the garden. Whenever possible, shop for native and drought-tolerant plants, keeping in mind that parts of a rain garden remain wet for long periods of time, while others are drier. Zone 1, the centermost ring of the rain garden, should be stocked with plants that like standing water for long periods of time, such as Lady fern (*Athyrium filix-femina*). The middle ring, Zone 2, should have plants that can tolerate occasional standing water, like Snowberries (*Symphoricarpos albus*). The outermost ring, Zone 3, is rarely wet for any

length of time and is best planted with species that prefer drier climates, such as western bleeding heart (*Dicentra formosa*).

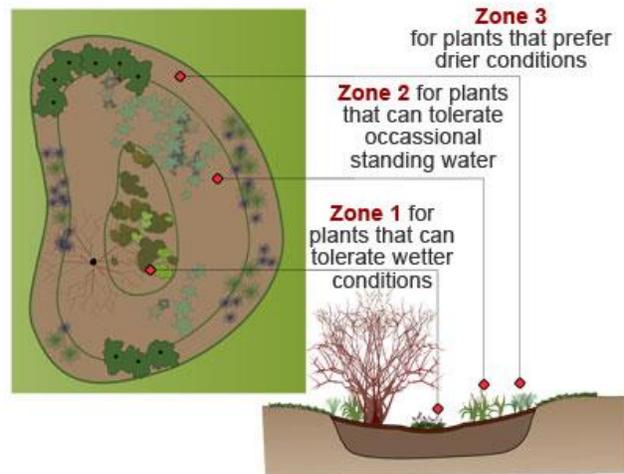


Illustration: Washington State University Rain Garden Handbook for Western Washington Homeowners

Although a low-lying area might seem like a natural for a rain garden, you need a place that isn't overly soggy already. Stay at least 10 feet from the house and at least 50 feet from a septic system or slopes greater than 15 percent. Call 811 to make sure underground utilities aren't in the way. Once you have a tentative site, test the soil's percolation rate. Dig a hole 2 feet deep and time how long it takes for 8 to 12 inches of water to disappear. For example, if 8 inches drains in 12 hours, the rate is 8 inches divided by 12 hours, or 0.67 inches per hour. A rate higher than 0.5 is great—your rain garden needs to be just 18 inches deep. If the rate is lower than 0.5 you'll have to dig 30 inches deep. If the percolation rate is less than 0.1, the site isn't suitable for a rain garden.

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Continued from page 5

Once the plants are in the ground, cover the inside of the rain garden with a 3-inch layer of mulch to keep the soil moist and to prevent weed seeds from sprouting. Until a rain garden's plants are established, even drought-tolerant plants require supplemental watering to survive dry seasons. Check the mulch depth annually and replenish as necessary. Rain gardens don't require fertilizers beyond the compost used in the soil mix. Weed and prune to keep the rain garden looking its best.

For a complete listing of all the steps for installing your own rain garden visit:

<http://www.thisoldhouse.com/toh/how-to/intro/0,,20517496,00.html>

We're on the Web!

Visit us at:

www.inwmc.org

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Council**

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