



Great Miami River

Water Quality

Protection of our rivers, streams, and groundwater are priority concerns for Miami Valley residents and communities.

The Issues

Since the passage of the Clean Water Act in the 1970's, the Miami Valley Region has seen a visible and quantifiable improvement in its water quality. The return of fish, birds, and other wildlife to our streams and rivers is a welcome sign of improving habitat and water quality. The removal of low head dams and their replacement with paddling structures, or simply open flow streams, shows us that people are also returning to

our rivers for recreation and an enhanced quality of life.

The Clean Water Act's regulatory approach requires use of the best (and advancing) technology to minimize pollution discharges into rivers and streams. Permits issued and enforced by the Ohio Environmental Protection Agency (Ohio EPA) ensure that we are aware of, and can plan for, pollution loads in our waterways. Over the decades, the amount and concentrations of pollutants discharged into our rivers from industry and wastewater treatment facilities has decreased.

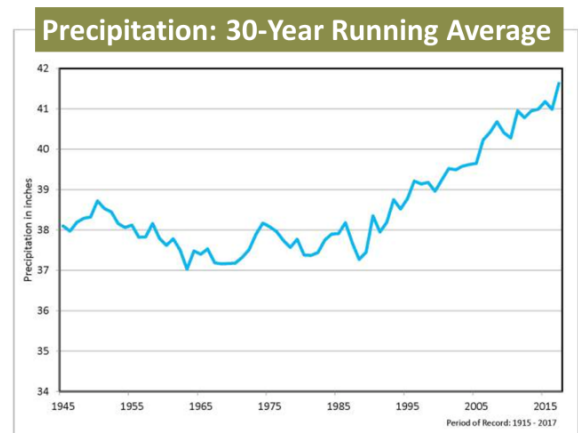
There is increasing interest in reducing non-point sources of pollution. A "non-point source" of pollution occurs when rain washes various kinds of pollutants off the land and

into waterways. Lawn fertilizers, road salts, spilled chemicals, agricultural nutrients, and even just plain dirt are carried off streets, yards, parking lots, and farms, flowing directly into waterways. The Ohio EPA [storm water management program](#) addresses storm water runoff from urbanized areas. It requires local governments to take measures to reduce the concentrations of pollutants in storm water runoff. In order to reduce storm water pollutants while developing land in a more sustainable manner, local governments can approve ordinances allowing or requiring “green infrastructure.” “Green infrastructure” includes features such as pervious pavement, rain gardens, and bioswales. These features mimic the natural hydrologic function of the land and help retain or restore ecosystem services that are often destroyed when land is developed.

Nearly 100 percent of our drinking water in the Miami Valley Region comes from the Buried Valley Aquifer. Therefore, it is vital that local communities make groundwater protection a priority. Our region developed the State of Ohio’s model for drinking water protection. Our innovative approach to “Wellfield Protection,” now known around the state as “Source Water Protection,” brought careful planning, thoughtful zoning, and regional cooperation to the issue of drinking water protection. Dayton’s [Multi-Jurisdictional Source Water Protection Program](#), encompassing six separate jurisdictions, is one of many programs across the region to assure safe drinking water for all our residents.

Our region’s past successes, however, need to be a prelude to continued effort to protect and enhance water quality. New issues and concerns have appeared in recent years.

According to data from the [Miami Conservancy District](#) (MCD), our region is averaging five more inches of precipitation per year than it did 30 years ago. [Stronger storms](#), heavier rainfalls, [urban flooding](#), and destructive erosion are becoming more common. Miami Valley residents want to know their homes will be safe and the roads passable. Businesses looking to expand or relocate to our Region want to know that polluted water and flooding will not be issues.



Resources already exist to help local governments in our Region plan for future development. The MVRPC [Open Space Plan](#) identifies the critical open spaces that should be protected in the Miami Valley Region. The MVRPC [Going Places Regional Land Use Vision](#) project developed a suite of planning and evaluation tools for communities to use when developing local comprehensive plans. MCD (Miami Conservancy District) staff can facilitate local site design roundtables. These roundtables bring together leaders from local government agencies, the development community, and natural resource departments. These roundtables enable collaboration for developing policies that balance water

protection and economic development, tailored to each community.

Surface water quality and the protection of the Buried Valley Aquifer are vital concerns for the people of the Miami Valley. The lists that follow provide a full range of policies, programs, and projects for communities to consider as each does their part to protect water quality now and for future generations.

What Communities can do

While considering approaches that fit the community and address local issues, it is important to remember that we all live downstream. Therefore, it is important to have an integrated, yet flexible, regional planning approach to watershed management.

Community Education & Outreach

- Distribute water quality tips to residents and businesses. Educational resources are available from a number of local organizations, including the county Soil & Water Conservation Districts, County Health Districts, and the Miami Conservancy District.
- Promote rain barrel workshops offered by county Soil and Water Conservation Districts.
- Educate the public on the value of clean and safe drinking water through media and events. **BYG**
- Collaborate to teach water conservation and stewardship in schools. **BYG**
- Promote tap water over bottled water to the community via events, newsletters, pay stubs, *etc.* **BYG**

Water Quality

Local Contacts

- Ohio EPA – Southwest District Office
Surface Water Manager – Joby Jackson, joby.jackson@epa.ohio.gov, 937.285.6029
- Miami Conservancy District – Sarah Hippensteel Hall, Manager of Watershed Partnerships, shippensteel@mcdwater.org, 937.223.1278
- Miami Valley Regional Planning Commission – Matt Lindsay, Manager Environmental Planning, mlindsay@mvrpc.org, 937.531.6548
- City of Dayton, Department of Water – Michele Simmons, Environmental Manager, michele.simmons@daytonohio.gov, 937.333.3796

Soil & Water Conservation Districts

- Darke County SWCD, Jared Coppess - District Administrator
jared.coppess@darkeswcd.com
- Greene County SWCD, Amanda McKay, District Administrator,
amanda.mckay@oh.nacdnet.net
- Miami County SWCD, Kreig Smail, District Administrator,
ksmail@miamiswcd.org
- Montgomery County SWCD, Ed Everman, District Director, EvermanE@mcohoio.org
- Preble County SWCD, BJ Price, District Administrator, bjprice@prebleswcd.org

- Educate the public on proper prescription and drug disposal to reduce contamination of water sources. See Solid Waste chapter for more information. **BYG**
- Support your county Solid Waste District's litter prevention projects and programs through participation and volunteer recruitment – see Solid Waste chapter for more information.

Internal operations

- Comply with the Ohio EPA's Municipal Separate Storm Sewer System (MS4) permit requirements. Municipalities in the urbanized area must adopt a storm water management plan that details best management practices for six minimum control measures:
 - public education and outreach
 - public participation and involvement
 - illicit discharge detection and elimination (IDDE)
 - construction site runoff control
 - post-construction runoff control
 - pollution prevention/good housekeeping for municipal operations

Many local organizations can help communities comply with storm water requirements, including the county Soil and Water Conservation Districts, county Public Health Districts, and watershed groups.

- Set a good example by following these [guidelines](#) for municipal landscaping, used motor oil, street sweeping, salt storage and application, vehicle washing, spill clean-up, and catch basin maintenance.
- Eliminate irrigation with potable water to the greatest extent possible. Strategies include replacing water-intensive plantings (turf grass) with native plants, potentially creating pollinator habitat; xeriscaping; and/or using reclaimed or harvested water for irrigation.
- Implement a policy of using low- or no-flow plumbing fixtures in municipal buildings. Require the use of [WaterSense](#) labeled fixtures and equipment whenever applicable.
- Label storm drains to indicate the destination of the water being discharged,

in order to discourage dumping of pollutants. **BYG**

- Install green infrastructure on municipal property (such as rain gardens, bioswales, bio-infiltration basins, or pervious pavement) to reduce storm water runoff. **BYG**
- Develop a Municipal Tree program — see Trees, Native Species & Land Management chapter. **BYG**
- Explore opportunities to add a [Green Roof](#) to community-owned buildings.

Ordinances and policies

- Model ordinances/regulations to protect streams and manage storm water — In recent years, local water quality experts have given a lot of thought to the essential regulatory tools a community needs to protect water quality, public health, and safety. A recommended [suite of model ordinances/regulations](#) has been developed with local and state agencies. There are models for:
 - Conservation development
 - Erosion and sediment control
 - Flood damage reduction
 - Illicit discharge detection and elimination
 - Off-street parking
 - Riparian setbacks
 - Storm water management
 - Wetland setback
 - Native plantings and landscaping
 - Rainwater harvesting **BYG**
 - Perform a comprehensive review of ordinances and policies, as they relate to water resources. The Miami Conservancy District (MCD) can guide your community through the [Better Site Design Roundtable](#) planning process. **BYG**
 - Green infrastructure [incentives](#) — Provide incentives for private property owners to install green infrastructure (such as rain
-

gardens, bioswales, bio-infiltration basins, or pervious pavement) to reduce storm water runoff. **BYG**

- Green streets — Require green infrastructure for storm water management to be included when maintaining city rights-of-way. U.S. EPA's complete and green streets program provides [guidance](#).
- Downspout disconnection — Allow homeowners to disconnect downspouts and/or install rain barrels. Chagrin River Watershed Partners can supply [guidance](#) about the requirements for doing this safely. The City of Parma has [model language](#) (see Chapter 2309).
- Inventory and inspect home septic systems in your community. Work with your Public Health District to educate septic system owners on proper maintenance. **BYG**
- Tree protection — See Trees, Native Species & Land Management chapter.
- Pesticide ban — More cities and institutions are stopping the use of chemical pesticides for lawn care purposes, especially in locations where children play. Here are the ordinances of [Cleveland Heights](#) and [Cuyahoga County](#).

- Ban [use of plastic bags](#). **BYG**
- Regulate or incentivize water efficiency for municipal water customers managing large landscaped areas. **BYG**
- An [excellent checklist](#) of recommended codes and policies related to watershed protection has been developed by the Ohio Balanced Growth Program.

Broader collaboration

Just as watersheds cross municipal boundaries, many of the actions to protect and restore water quality must occur at a regional scale. Communities can work collaboratively to support initiatives such as:

- The Great Miami Watershed Network **BYG**
 - The Little Miami River Watershed Network **BYG**
 - [The Little Miami Conservancy](#)
 - Partners for the Environment
 - Ohio's [Balanced Growth Program](#), which links land use to water quality.
 - [Clean Sweep](#) of the Great Miami River
 - [Little Miami River Kleeners](#) Clean Sweep.
-

Water Quality

Additional Resources

- Best land use practices for water quality — Kirby Date, Ohio Balanced Growth Program, 216.687.5477, k.date@csuohio.edu
- Citizen education about watersheds – Mike Schumacher, Little Miami Watershed Network, lmwatershednetwork@gmail.com
- Integrated planning for storm water management - David Brumbaugh, Ohio EPA Surface Water, 614.644.2138, david.brumbaugh@epa.ohio.gov
- Ordinances for water protection — Heather Elmer, Chagrin River Watershed Partners, 440.975.3870, helmer@crwp.org
- Rain garden design and rain barrels – Jeremy Huggler, Montgomery County Soil & Water Conservation District, 937.854.7645, HugglerJ@mcoho.org
- Regional storm water policies — Kyle Dreyfuss-Wells, NEORSW Watershed Program, 216-881-6600, Dreyfuss-WellsK@neorsw.org
- [Storm water facility planning and design](#) – Ed Everman, Montgomery County Soil & Water Conservation District, 937.854.7645, EvermanE@mcoho.org
- Trees and water quality – Wendi Van Buren, Ohio Department of Natural Resources, 614.670.2653, wendi.vanburen@dnr.state.oh.us
- Water and economic development – Mitch Heaton, Dayton Development Coalition, 937.229.9090, mheaton@daytonregion.com

Resource Links

- [Miami Valley Data Commons](#)
 - [Community riparian and wetland guidance](#)
 - [ODNR Rainwater and Land Development Manual](#)
 - [Ohio Balanced Growth Program](#)
 - [Ohio EPA Storm Water Program](#)
 - [Center for Watershed Protection](#)
 - [Rain Garden Manual](#)
 - [Stream maintenance guide for communities](#)
-