

Best Management Options for Riparian Areas and Wetlands

Stabilize Streambanks

- Establish woody vegetation and reduce mowing within the riparian zone.

Maintain Streambanks

- Don't dump yard wastes in riparian corridor or on streambanks.
- Vegetate eroding streambanks immediately.

Drainage and Runoff

- Use native vegetation to dissipate stormwater runoff and discharge drainage without creating erosion.



Riparian areas should be maintained in as natural a state as possible to provide the best environmental services to the resident and community.



Planting turfgrass and mowing to the edge of a stream can lead to erosion and property loss.

Keep Yard Waste and Landscaping Debris Out of Riparian Areas

Dumping soils, liquid or solid waste into a stream or riparian area violates Pepper Pike's riparian setback ordinance. Natural, noncommercial uncontaminated compost material is allowed to be placed in a riparian area, but caution should be used to ensure the material does not have access to the stream. The best practice is to store yard waste as far from the stream and riparian area as possible.

- Yard waste materials can be swept downstream, blocking culverts, storm catchbasin inlets, sump pumps, and curtain drains.
- Yard waste materials smother out streambank vegetation, creating bare spots and erosion.
- Yard waste materials contribute to organic material in the stream, creating unsightly and unhealthy algal blooms from excess nutrients like phosphorous and nitrogen.

Riparian Area Stabilization: It's in the Roots!

Deep-rooted woody vegetation is ideal for stabilizing streambanks and preventing erosion. Turfgrass roots offer little resistance along streambanks to the shear stress forces exhibited by roaring streams during storm events. Maintaining a healthy native buffer in the riparian area is the best solution for flooding and stormwater management.

Trees suited for riparian areas:

- Sycamore, pin/swamp/red oaks, silver and red maples, river birch, and Eastern cottonwoods are all good choices for riparian areas. They do well in wet conditions and quickly establish stabilizing roots.

Shrubs suited for riparian areas:

- Red osier/silky/grey dogwoods and streamco and sandbar willows are well-suited for wet riparian areas and also help stabilize streambanks and filter out stormwater pollutants.

Another option is using deep-rooted native grasses along the riparian corridor, which can be kept mowed but provide better stabilization than turfgrass.



Maintaining a healthy riparian corridor prevents unsightly and damaging effects from erosion, yard waste, and stormwater runoff.

What is a Riparian Area and Why Manage It?

- A riparian area is the land adjacent to rivers, streams or watercourses, and often includes floodplains and wetlands.
- Riparian areas and wetlands slow stormwater, store this water and release it over time, providing flood control, erosion control, and water quality protection services to communities.
- A healthy riparian area is kept in as natural a state as possible and vegetated with native trees, shrubs, and deep-rooted grasses which help to stabilize streambanks, limit erosion, reduce flooding, and filter out pollutants in stormwater runoff.
- Cities like Pepper Pike contain many miles of streams that act as critical stormwater infrastructure. Proper management of these streams is very important to minimize stormwater impacts and maintain property values.



Tributary to Pepper Creek



Work done within a riparian area may require State and federal permits in addition to the City's permitting process.

Pepper Pike's Riparian Setback Code: Chapter 1540

The riparian setback code is designed to prevent drainage problems and reduce public safety concerns. It keeps homes, infrastructure, and other property out of the path of ever-changing streams and eliminates the need for expensive streambank stabilization measures by placing protections on riparian areas.

- Minimum of 120 feet on either side of a stream draining an area greater than 20 square miles.
- Minimum of 75 feet on either side of a stream draining greater than 0.5 square miles and up to 20 square miles.
- Minimum of 25 feet on either side of a stream draining an area less than 0.5 square miles and having a defined bed and bank.
- Setback is extended to include the 100-year floodplain as well as the outer boundary of any wetlands partially contained in or adjacent to the riparian setback area.

Pepper Pike's ordinances can be found at <http://www.pepperpike.org>.

Riparian Areas: Who's Responsible for What?

- Private individuals own the land that forms the stream channel on their property.
- The stream is considered a "public good" and is owned by the state.
- Alterations to a stream or watercourse may require approval of federal and/or State permits for activities such as streambank armoring, culverting a stream, removal of natural streambed materials, and filling or re-routing of the stream channel.

Ohio EPA and U.S. Army Corps of Engineers (USACE) Regulations for Streams and Wetlands

- Any impact in a wetland, or below the Ordinary High Water Mark (OHWM) of a stream requires permits from USACE and/or Ohio EPA. The OHWM is generally considered to be the line on the streambank up to where water flows normally. Small impacts may only require notification to USACE or Ohio EPA.
- Mitigation can be required for some activities, but not always in the same watershed.
- Agencies have no authority above the OHWM or outside wetland boundaries.

Working Around Riparian Areas

- Be aware of setback distances and be willing to discuss them with the landowner.
- Keep soil-disturbing activities to a minimum within riparian areas.
- Keep construction equipment out of riparian areas.
- Follow applicable requirements of U.S. Army Corps of Engineers and Ohio EPA for crossings and streambank stabilization projects.