

WARREN COUNTY STORMWATER DISTRICT

# Understanding Stormwater Drainage Maintenance

## Home Owner's Association Guide



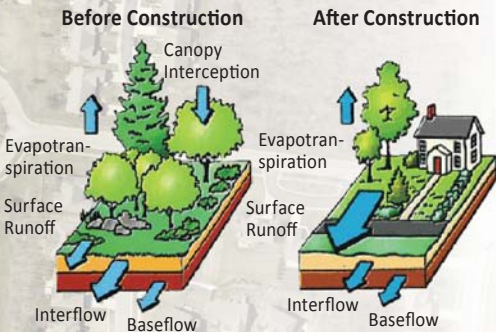
## Introduction

Our goal is to help property owners and Home Owner's Associations (HOA) understand their stormwater system so they can maintain it to prolong its life and to comply with applicable regulations. The purpose of a stormwater system is to contain, hold, and release stormwater in such a way that the impact downstream is reduced. Homeowner's actions regarding their property and surrounding land can affect the proper functioning of the stormwater system.

## Purpose

Soil and water are meant to go hand-in-hand because soil has the natural ability of absorbing rain water (percolation) and slowly releasing it into local rivers and streams. Natural drainage prevents heavy runoff and flooding. As development begins this naturally occurring method of handling rainwater is impeded.

Warren County is one of the fastest-growing counties in southwestern Ohio, with well over 200,000 people. Growth is important for any region, but with growth comes construction of homes, businesses, schools, roadways, parking lots, etc. This increase in pavement and structures (impervious surface) reduces percolation. As a result, large quantities of stormwater move at a faster rate to rivers and streams, which causes additional runoff and flooding. This is when the management of stormwater becomes a necessity.



## **Management**

Warren County has adopted rules and regulations regarding stormwater management systems. The Warren County Rules and Regulations for the Design of Storm Sewer and Stormwater Management Systems can be found on the Warren County Engineer's Office (WCEO) website. The county approves plans for drainage systems and changes should not be made to the stormwater system or to open drainage without notifying the WCEO.

It has been recommended that stormwater systems in Warren County be operated by each respective HOA. Because rain water flows from the lawns, driveways, and roofs of each home, then into the stormwater system, everyone has a part in being responsible for the system. The HOA should manage the stormwater system by ensuring funding, inspecting and maintaining the system, and handling complaints and questions.

## **Maintenance Funding**

A difficult yet important part of stormwater management is establishing stormwater service fees. The fee structure and rate can be determined by the HOA. There are various ways to calculate rate structures for stormwater maintenance. Rates can be based on impervious area, gross area, percent impervious surface, and land use. Costs might be divided among those who are served in various ways by expenditures for maintenance and operations, capital improvements, and support activities.

It is important to address funding now to prevent losses due to the lack of funds, and to repair and maintain the system as needed now and in the future. Questions on how to set up your maintenance funding program should be directed to the Warren County Stormwater District.

# Maintenance

Stormwater systems require regular maintenance in order to function properly and to serve the purpose for which they were designed. Creating a stormwater maintenance plan will help you keep your system operating and extend its life. The county inspects stormwater basins every other year for functionality and makes necessary recommendations.

It is up to the HOA or property owner to perform the required maintenance. A basic approach to maintenance is to regularly check for and repair the following potential problems:

**Structural** - *settling, cracking, misalignment*

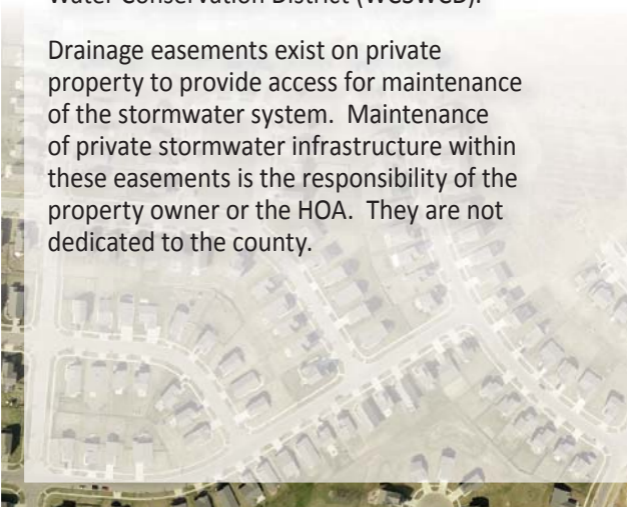
**Erosion** - *around pipes, gullies, animal burrows*

**Trash & debris** - *brush, grass clippings, litter*

**Vegetation** - *cattails, trees on the dam and around structures*

By taking care of these problems as they happen, you can prevent larger and more costly maintenance problems. For maintenance questions or for a more detailed description of what to inspect, you can contact the Warren County Soil and Water Conservation District (WCSWCD).

Drainage easements exist on private property to provide access for maintenance of the stormwater system. Maintenance of private stormwater infrastructure within these easements is the responsibility of the property owner or the HOA. They are not dedicated to the county.



*An effective maintenance program will extend the life of your stormwater drainage infrastructure, avert expensive repairs and prevent adverse downstream impacts.*

## **Stormwater Systems**

Each development has its own unique stormwater plan designed by engineers before any construction begins on the land. The plan is a system created for drainage that involves each individual building plot, street, parking lot, etc.

Properly installed stormwater systems are designed to handle statistically predictable rainfall events. The system should also handle an unusually heavy period of rain although you may see more water above ground, within *flood routes*, and in your *detention basins* than you are accustomed.

Some of the most common ways to catch and hold stormwater are by *retention ponds*, *detention basins*, and dry wells. The purpose of each of these structures is to capture excess stormwater runoff from either the soil/grass or through a system of *drainage pipes* and *catch basins* within the development. This design allows stormwater to be contained and slowed down until it can be slowly released into a near-by stream or absorbed into the soil.



# Types of Stormwater Structures

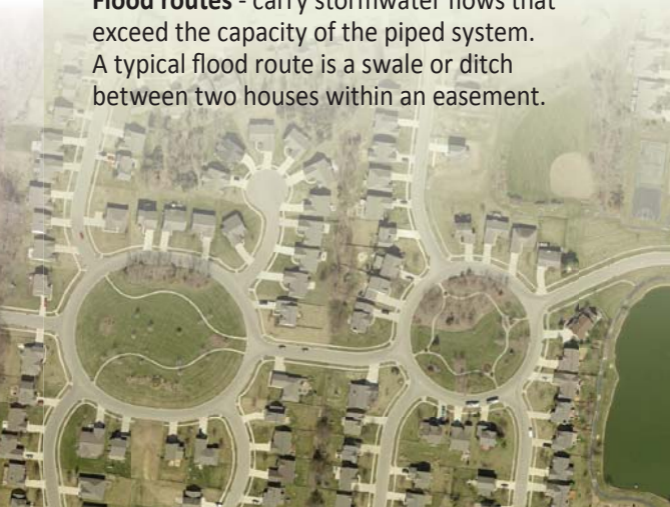
**Conveyance pipe** – underground pipe drains stormwater runoff away from homes, roads and grassy areas.



**Catch basin (curb inlet)** - catches runoff from sidewalks, streets, parking lots, and drainage pipes. The catch basin collects and directs the stormwater through underground pipes before it goes into the retention pond/detention basin.



**Flood routes** - carry stormwater flows that exceed the capacity of the piped system. A typical flood route is a swale or ditch between two houses within an easement.



**Retention/detention basin** – collects and holds excess runoff until water has time to release slowly by pipe into a local stream or absorb into the soil.



**Retention Pond**



**Detention Basin**

The above stormwater structures are some of the more common variations that you may find in your neighborhood. For more specific information on types of stormwater structures, you can contact the Warren County Soil and Water Conservation District (WCSWCD).



This information is being provided to help you understand your stormwater system and the steps necessary to keep it operating. More resources can be found on the following department websites. Any questions on the material found in this brochure can be directed to the Warren County Stormwater District.

**Warren County**  
**STORMWATER**  
DISTRICT



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<http://www.WCEO.us/pages/stormwater-district.html>



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The Warren County Stormwater District provides stormwater management services aimed at reducing the effects of flooding, erosion and sedimentation as well as helping protect the quality of water in local streams, lakes, and rivers.

The mission of the County Engineer is to design, build, and maintain the finest and safest possible county road system for the citizens and traveling public of Warren County.

The Warren County Soil and Water Conservation District's mission is to promote wise stewardship of our natural resources through cooperative partnerships, educational programs, and technical assistance in land and water management.

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