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Butler Soil and Water Conservation District

## Homeowners Guide



What to look for & Who to call

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### Percolation Test

Test your soil generally where you wish to plant a rain garden to calculate how much water will soak through in 24 hours.

1. Dig a 12" deep hole.
2. Fill with water and let drain (soak into the soil).
3. Fill the hole again and time how long it takes to drain.

Less than 12 hrs	Quick-draining
12 hrs —3 days	Standard rain garden
More than 3 days	Wetland rain garden

Choose a site that takes less than 3 days to drain. In some cases, due to the high clay content of our soils, the soil needs to be amended. To do this, dig the rain garden to twice the desired depth, then fill the bottom half with the amendment materials (50% sand + 25% topsoil + 25% organic matter). You can mix materials right in your garden.

*\*Call Ohio Utilities Protection Service at 1-800-362-2764 to find out if there are any buried pipes or lines before you dig.*

### Invasive Species

Ohio Department of Natural Resources maintains a list of state listed invasive species ([www.ohiodnr.gov/invasiveplants](http://www.ohiodnr.gov/invasiveplants)). Although not required, it is up to the homeowner to remove these species from their property. It is important to do this because invasives compete with native vegetation, spread to unwanted areas, and can be detrimental to wildlife habitat.

#### *Common invasive species in southwest Ohio:*

- Amur Honeysuckle
- Autumn Olive
- Callery (Bradford) Pear



Because these plants are resilient, the entire stump will have to be removed or a concentrate herbicide, such as Glyphosate, needs to be applied to the stump within minutes of cutting.

## Rain Barrels

[Contact Butler SWCD]

Residential water use typically increases 40-50% during summer months due to outdoor water use. A rain barrel can reduce this usage by collecting and storing stormwater from your rooftop. They are usually connected to a downspout from your roof. Depending on the size of your house and the amount of rainfall, you can collect substantial quantities of rainwater with a simple system.

Using rainwater instead of tap water can help to improve the health of your gardens, lawns, and trees. Rain is a naturally soft water and devoid of minerals, chlorine, fluoride, and other chemicals. For this reason, plants respond very well to rainwater.



### To keep your rain barrel safe:

- Securely position the rain barrel so it cannot easily fall over. A 55 gallon drum can weigh more than 450 lbs when full!
- Cover any opening with screen material to keep out mosquitoes and other insects searching for a breeding ground.
- Drain, uninstall, and properly store rain barrels during the winter

## Rain Garden

A rain garden is a planted depression in your yard that captures rainwater runoff from hard surfaces, allowing it to slowly soak into the ground. The rain soaks into the ground, usually in a matter of hours, and the garden is dry most of the time. A simple percolation test can show how fast your soil drains. Rain gardens usually are filled with native plants because they are naturally drought, flood and pest resistant. That translates to less work for the homeowner once all the initial work is done.



## Part I: Natural Features & Drainage

Your property may contain several natural features that could potentially pose a problem such as bedrock outcroppings, highly erodible soils, and poor drainage. Find out more about these natural features and how to turn them into a benefit for you.

### Soils

Before starting a home project involving soil, save time and money by:

- Visually inspecting the site's soil and slopes
- Requesting a Web Soil Survey Report from Butler SWCD or go to [www.websoilsurvey.sc.egov.usda.gov](http://www.websoilsurvey.sc.egov.usda.gov)
- Testing the soil if additional information is needed

*\*Contact OSU Extension office for soil test kits (513)887-3722 or Butler SWCD for a soil survey report.*

### Things to Consider:

Take time to investigate your property if addressing any soils issues or preparing a site for a project by asking:

- What types of soils are on the property and are there any soil limitations for buildings and sanitary systems?
- Are there shrink or swell soil components? (can cause future cracking due to contracting/expanding)
- Is there standing water on the surface?
- What is the slope of the site? (steeper slopes promote erosion)
- Are the subsoils sand or gravel based? (effects drainage)
- What is the depth to restrictive features or bedrock? (effects drainage)
- How well does the soil drain (permeability)?



## Drainage Characteristics and Considerations

Land in Butler County ranges from nearly level to moderately sloping, dissected in some areas with rivers and streams. The hazard of erosion is generally severe on sloping to steep soils and along stream valleys. Drainage problems may occur in areas located in a floodplain of a nearby stream, or in a natural drainage way. Even in upland areas, flooding can occur in areas of depression.

### *Drainage considerations to keep in mind:*

- Is your property located in a floodway or flood plain?
- Could there be a runoff or drainage problem from adjacent properties?
- Are there drainage easements located on your property? Who is responsible for their maintenance? (search for your property at [www.gis.bceo.org](http://www.gis.bceo.org))
- Who has responsibility for maintenance of stormwater structures and retention/ detention basins? (e.g. HOA, BCEO, or homeowner)

**\*Contact Butler County Engineers Office (513)867-5744 or Butler SWCD.**

### *Reminders:*

- Keep drainage swales, ditches, or any area that drains water free from debris (branches, leaves, trash) so water doesn't back up onto you or your neighbors property.
- Homeowners are generally required to accept drainage onto their property and let it flow downstream where it would naturally outflow.
- Changing the flow of water (i.e. volume, direction or velocity) in a manner that causes damage to an upstream or downstream neighbor may result in legal liabilities for damages.



## Backyard Wildlife

The presence of wildlife can make a backyard a better place. Urban development is rapidly displacing many birds, mammals and pollinators from their natural habitats. By creating a mini-sanctuary on your property, you can attract and hold many species of wildlife. Plan the landscaped area to include three basic elements that all wildlife requires: food, water and shelter. The ideal wildlife management plan provides a year-round succession of nuts and berries to feed a wide variety of animal species. Select plants that will flourish in your yard's unique conditions of soil type, moisture, light and slope.

### **Feeding**

Supplemental feeding will help bridge the gap for your backyard winter residents and provide you with many hours of enjoyment. Seed eaters such as sparrows, finches, and cardinals will eat sunflower seeds, cracked corn, millet and commercial seed mixes. The fruit eating mockingbirds, catbirds, robins and jays enjoy raisins and chopped fruit. High energy suet is favored by woodpeckers, chickadees and nuthatches.

### **Water**

A simple bird bath or fountain can supply wildlife with water for drinking and bathing. Encourage winter activity by keeping part of the pool clear of ice.

### **Shelter**

Your wildlife plan should include both escape cover, to serve as a home base for wildlife, and nesting cover, to provide a safe place for producing and raising young. These areas can be created by planting trees and shrubs with overhanging branches and establishing groundcovers or prairie grasses. Rows of trees and shrubs can provide cover and act as a wildlife corridor while giving you privacy, reducing strong winds, and screening noise. More backyard habitat planning information is available on Butler SWCD website [www.butlerswcd.org](http://www.butlerswcd.org).



## Part III: Backyard Conservation

### Yard Waste and Composting

By composting we can reduce the amount of garbage sent to our landfills. Yard and food wastes account for nearly 28% of the municipal solid waste produced in the United States.

Compost is one of nature's best mulches and soil amendments. Using compost loosens clay soils, improves soil structure, texture, aeration and increases the soil's water-holding capacity. In fact, compost can in most cases eliminate the need for fertilizers and pesticides.

#### *Common household items that can be composted:*

- Food scraps (exclude dairy, meat, and bones)
- Coffee grounds, filters, and tea bags (remove staple)
- Grass clippings, leaves, small twigs, straw and hay

If you cannot or do not want to compost your yard waste yourself, there are several options available. Contact your city or township to find out if they have a yard waste program in place. For example, Fairfield offers a chipping program for its residents. In some areas of the county, the local waste hauler has been contracted to provide brush removal. Yard waste removal programs typically have a size limit, so be prepared to find out not only if there is a program in place, but also if there is a size limit, such as 4" thick tree limbs. You can also contact the Butler County Solid Waste District ([butlercountyrecycles.org](http://butlercountyrecycles.org)) to find out about other options such as local companies specializing in yard waste.

*\*Contact Butler SWCD for questions about composting or to purchase compost bins. Contact Butler County Solid Waste District for questions about yard waste disposal options (513)887-3653.*



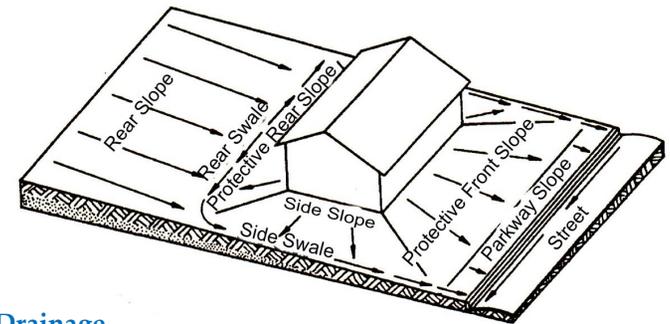
### Does Your Lawn Flood?

There are two methods to handle excess water on your property depending upon whether the problem is with surface or subsurface water.

#### Surface Drainage

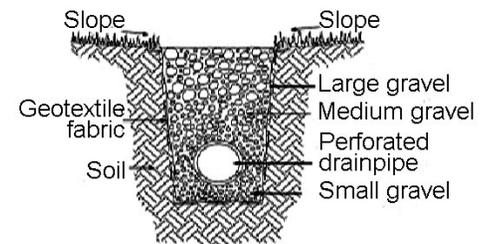
Every home should have a grading and landscaping plan to provide control of all surface water on the lot. Drainage can change if there are additions to the landscaping, maturity of trees and shrubs, sedimentation build up, etc. Surface water runoff should never be directed towards the foundation wall.

Make sure any surface water is travelling away from the building. Building up the soil at the foundation wall may be necessary for water to flow away. Keep gutters and downspouts clean and maintained, and extend downspouts as at least 10 feet away from the foundation.



#### Subsurface Drainage

Subsurface drainage systems are generally constructed with perforated, corrugated, plastic tubing (e.g. French drains). Excess water is drained through pipes, which are placed underground. These pipes are at least 4 inches in diameter and surrounded with gravel. Never outlet these pipes into the sewage system and never directly connect to stormwater sewers. French drains will allow water to seep into the ground or the drain can outlet to a drainage area.



*\*Contact Butler SWCD for drainage advice.*

## Erosion Problems

[Contact Butler SWCD]

Erosion occurs when wind, rain, or running water moves soil particles, organic matter and plant nutrients, then carries them away. Erosion results in the lost of valuable topsoil. This soil could then deposit into rivers, ditches and streams where it clogs culverts and streams. This adversely affects aquatic life, wildlife, and flood control. Because of the harmful effects erosion has on the environment, it is important to reduce erosion in your own yard.

### *Some suggestions for getting started include:*

- Check your property for problem areas. Cover bare soil by planting the species best suited for the site and also consider mulching.
- Aerate and reseed thin vegetation to increase plant coverage and soil retention.
- Divert surface water flow, if possible, from newly seeded areas until growth is sufficient to hold against the power of moving water.
- Plant trees! They increase property values, the tree canopy reduces rainfall impact, and tree roots can help keep soil in place.
- Do not mow and keep grass tall along ditches and streams to established deeper root systems.
- Use non-plant materials (e.g. rocks, mulch, straw) to reduce erosion in stubborn spots where plants cannot thrive.
- Place stepping stones or gravel where foot traffic is heavy.
- Consult an engineer for structural solutions for difficult slopes.



## Guidelines to Conventional Septic Systems:

- Know the location of your septic tank and soil absorption field.
- Contact the Health Department for a list of reputable septage haulers and track when your septage is pumped.
- Maintain your systems pump or other electrical components. After a power failure, check the operation of all components.
- Practice water conservation to avoid overworking your system and to extend its life. Install low-flow faucets and shower heads, use water efficient washing machines, toilets, and dishwashers, and repair leaky faucets and fixtures.
- Divert runoff (from gutters and impervious surfaces) away from your drain leach field to avoid saturating the soil.
- Do not construct anything, or pasture animals, over your system. Structures and livestock can compact the soil and prevent it from absorbing the effluent. This can alter routine maintenance and repair of the system.
- Inspect your system at least once a year. Bright green grass growing over the drain field, especially during drier months, often indicates that the system is malfunctioning and effluent is rising to the surface. Aging systems can contribute to pollution and be costly to repair.

## Water Supply

Public water systems transmit from cities, and villages, but many homeowners still must rely upon private systems for water to meet their everyday needs.

It is the homeowner's responsibility to make sure their private water supply is safe and clean. If you purchase a residence with an existing or proposed well or cistern, here are some key points to remember:

- Before buying, obtain proof of the safety of the water and specific details on the construction and siting of the water supply.
- Have the water supply tested for bacteria, nitrates, lead, etc. Continue monitoring by testing your water at least once a year.

*\*Contact Butler SWCD or Health Department for a list of testing labs.*

## Sewage System

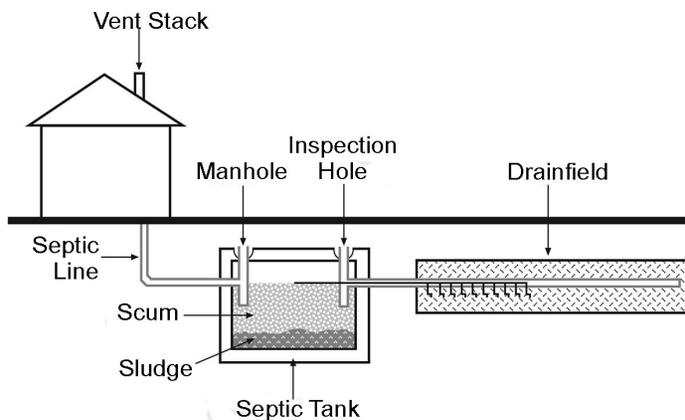
There are two kinds of sewage systems homeowners typically have:

1. Connected to the central sewage system where your wastewater is carried by sewage pipes to a Sewage Treatment Plant.
2. You could be one of the thousands of residences located in the county that are not served by central sewage treatment systems. At these homesites, sewage treatment becomes a do-it yourself operation, through a septic system.

### Managing Your On-Site Septic System

The most widely used type of on-site wastewater treatment system is the septic tank with a soil absorption system. It provides wastewater treatment in two stages:

1. Wastewater is discharged to a septic tank, a buried watertight tank in which household wastes can settle to the bottom to be decomposed by bacteria into sludge. Lighter materials, such as grease, float to the top and form a scum that is trapped in the tank by baffles.
2. The liquid, or effluent discharges to a soil absorption system also called a leach field/drain field. This network of underground perforated pipes allows effluent to flow out through the pipes holes, and into the soil. The soil acts as a filter, removing the remaining suspended substances, pollutants, and bacteria.



*\*Contact Butler County Department of Health (BHD) at (513)863-1770 if you suspect a failing septic system.*

## Stream Bank Erosion

[Contact Butler SWCD]

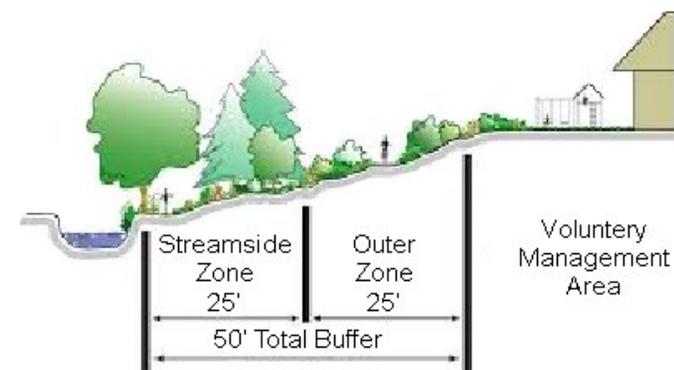
Stream systems are in a state of constant change. This can be attributed to two simple rules; Water always takes the path of least resistance and soil will erode under nature's forces. Stream bank erosion can be detrimental to home-owners by taking away valuable land and in extreme cases, causing structural damage to the home.

### Stream Buffers

The root systems of native trees, shrubs, and some grasses are the strongest natural defense against stream bank erosion. By leaving a strip of deep-rooted vegetation, also known as a Riparian Buffer or Stream Buffer, along the stream's edge you significantly improve the stability of the stream bank. Do not mow this area! Common turf grasses like Fescue and Kentucky bluegrass have very shallow roots (about 3 – 5 inches). Native vegetation can establish root systems several feet into the ground. For example, roots of the Common Ninebark shrub can grow 16' feet deep. These native plants are more suited to local environmental stresses such as drought, disease, and insects.



These buffers also filter chemicals and sediment carried by storm water runoff, provide habitat for wildlife, and help keep streams cooler. Stream buffers also provide privacy and valuable aesthetic to a home. Most scientific studies recommend minimum buffer widths ranging from 50-100 feet on each side of the stream. For optimum benefits the buffer width should be approximately ten times the stream width.



## Pond Construction

Proper site selection, design and construction are essential to the success of a pond. Butler Soil and Water Conservation District along with the Natural Resource Conservation Service (NRCS) typically offer a pond clinic each year. These clinics are designed to provide information about a variety of pond issues: management, stocking, weeds, wildlife, etc. They can also provide valuable information on pond construction. Below you will find helpful hints that will guide you along the way when thinking about constructing a pond.

### *Things to consider:*

- Soil types
- Size of watershed and source of water draining into pond (Is there enough water? Groundwater or surface water fed?)
- Local regulations (Is a permit needed?)
- Pond location, size and purpose
- Location to utilities (water, electric, septic)
- Pond spillway or outflow pipe
- Check with neighbors to discuss your plans
- Check the laws regarding your liability in case of injury or death resulting from the use of your pond. You may find that you will need to protect yourself with insurance.

### *Pond management considerations:*

- Fish selection
- Chemical applications
- Bank erosion
- Keeping spillway/dam clear of trees and shrubs
- Maintenance of aeration system
- Invasive species and wildlife (cattails, muskrats, etc.)

*\*Contact Butler SWCD for pond management technical assistance.*



## Part II: Utilities

### Stormwater

Stormwater drains are designed to drain excess rainwater away from roads and parking lots. In Butler County, water that goes down the storm drain in your neighborhood DOES NOT go to a treatment plant. It goes directly to the nearest stream or waterway. Due to the vast development in Butler County, there are now more impervious (hard) surfaces that prevent rainwater from entering the soil, causing much of it to run down storm drains. As the water travels over these surfaces, it can pick up pollutants (e.g. oil, debris, fertilizer) and carry these materials to our waterways.

### Illicit Discharge

Urban stormwater runoff containing illicit discharge is a significant contributor of point source pollution to the nation's surface waters. An illicit discharge is the introduction of non-storm water materials, sewage, pollutants, or hazardous materials into the municipal storm water sewer system. Illicit discharges that flow into a stormwater drain can be intentional or unintentional, but both can pollute surface water.

### *Examples of illicit discharges are:*

- Dumping of paint, soap, oil, etc.
- Oil spills and leaking automotive fluids
- Sweeping or hosing of grass clippings or animal droppings
- Soaps from car washing
- Cross-connections of sanitary sewer lines

*\*If you suspect someone is dumping illicit discharge into stormwater drains, contact Butler County Storm Water District (513)785-4120 or your local city government.*

If you are interested in placing "No Polluting" labels on the storm drains in your neighborhood, please contact Butler SWCD or visit their website for more details [www.butlerswcd.org/volunteer](http://www.butlerswcd.org/volunteer)

