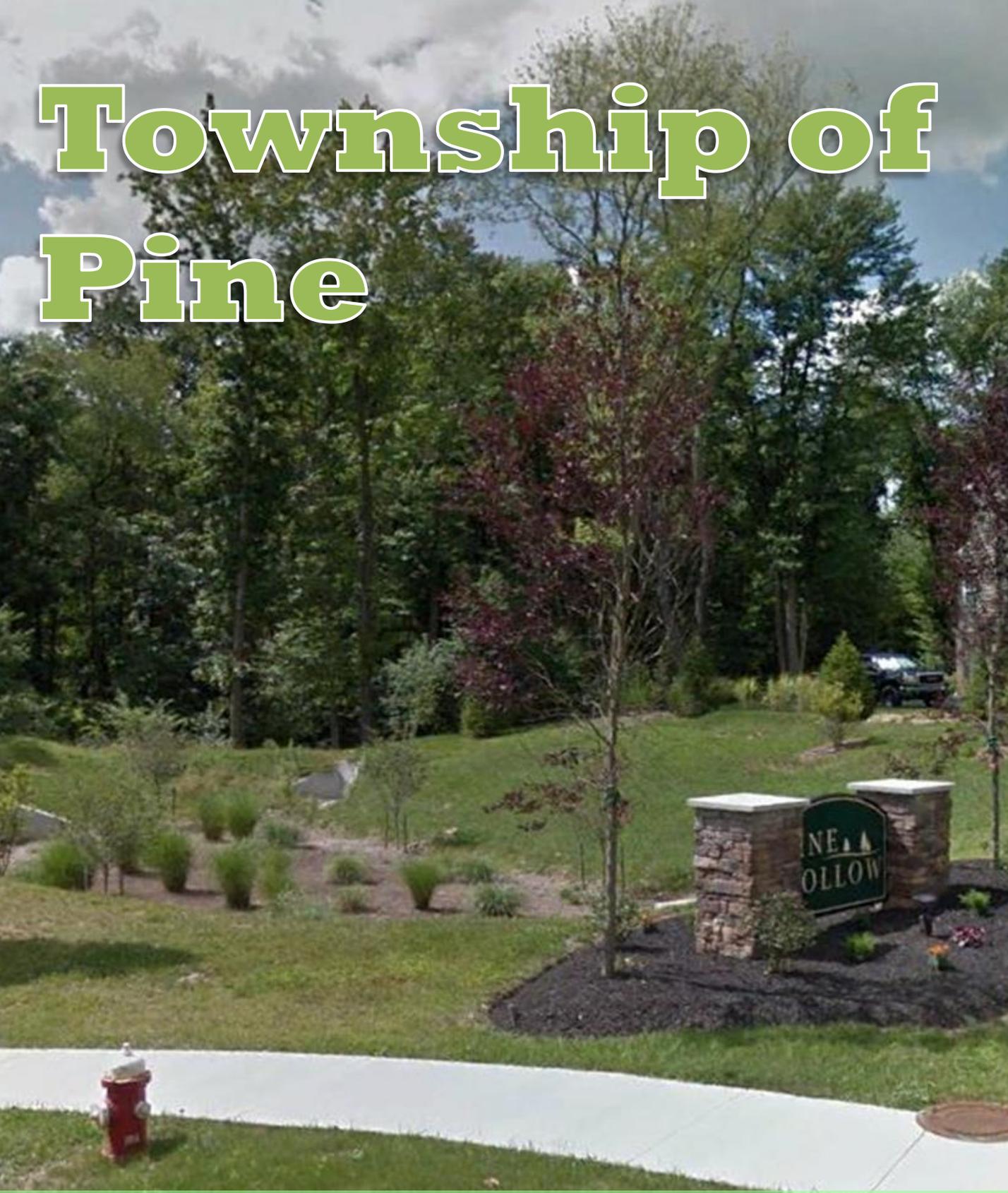


Township of Pine



Guidance for Maintaining
Your Stormwater Detention Facility

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Introduction

When your plan was approved by the Township of Pine Board of Supervisors a stormwater detention pond (sometimes more than one) was installed to collect and detain stormwater flowing across the plan so that the rate of stormwater leaving the property after development of the property is at no greater rate than the stormwater leaving the site before the development. Developers are required to submit detailed studies and calculations to show the size detention ponds are required to be for this purpose.

The Pennsylvania Department of Environmental Protection (PA-DEP) has recently mandated that every municipality inspect all detention ponds annually and advise the owner(s) of any remediation necessary to maintain proper operation of the pond within the municipality. The DEP is also requiring the Municipality to mandate compliance in cases when compliance is not completed.

One part of the annual DEP reporting requirement is that the Township maintains a current inventory of all detention ponds within the Township. Your pond made the list! (The DEP calls these structural Best Management Practices or “BMP’s”).

Your stormwater detention pond is an inventoried structural BMP and is an essential part of the DEP’s efforts to improve the water quality of our streams, rivers and lakes, however, detention ponds will fail prematurely if not properly maintained. Once a detention pond fails, it will no longer perform its intended functions and it is often very expensive at that point to rehabilitate.

The booklet will help explain:

- What are detention ponds and why are they important?
- Do you have a detention pond near your property?
- Are there different types of detention ponds?
- Are you responsible for maintenance?
- Maintenance, why is it necessary?
- What maintenance tasks should be done?
- How can you enhance the appearance and function of your detention pond?

Detention Pond Basics

Whether you are an individual property owner, a homeowner's association representative, or a residential/commercial property manager, this guidebook will answer all of those questions and provide you with step by step instructions for proper maintenance activities. Routine maintenance will prolong the life of your detention pond, improve its appearance, help prevent flooding and property damage, and enhance local streams and lakes. This guidebook is not a set of rules and regulations on how to design or build a detention pond.

- What are detention ponds and why are they important?

When land is altered to build homes, Churches, schools, commercial building, or just about every other land development, the natural system of trees and plants over relatively porous soil is replaced with harder surfaces like sidewalks, streets, decks, roofs, driveways and even lawns of more compacted soils. As a result, less rainwater is soaked up and more rain water, also known as stormwater, flows off the land at a faster rate. This can lead to stream bank erosion within local streams and possibly cause downstream flooding. Your detention pond is important because:

- It collects and detains stormwater.
- It filters stormwater runoff.
- It helps protect local creeks and private property, and
- It helps reduce downstream flooding.

A detention pond is a man-made depression that collects and cleans stormwater runoff. Your detention pond (along with others in the area) helps to slow the rate of stormwater runoff from the neighborhood and improve the quality of the stormwater leaving the detention pond. They are important in helping to protect public and private property, public health and safety, and water quality. The pond collects and traps sediment from stormwater that would otherwise clog our rivers and streams, and degrade the environment for fish, birds and other wildlife.

Every stormwater detention pond located in the Township of Pine's Pine Creek, Brush Creek and Breakneck Creek watersheds play an important role in improving and protecting water quality. There are increased concentrations of pollutants in stormwater called "Non-point" source pollution. These pollutants include sediment, phosphorus and nitrogen from fertilizers, salts and oil and grease from roads and parking surfaces, and bacteria from pet waste. These pollutants, which are a direct result of a variety of common outdoor human and animal activities in the neighborhoods, degrade water quality and limit habitat for wildlife in the streams.

A variety of laws, including the Federal Clean Water Act, encourage or require the control of urban pollutants. As such, maintaining your detention pond is an important part of our environmental protection efforts.

- Do you have a detention pond near your property?

If your development was built after the mid-1980's, it most likely has a detention pond that manages stormwater runoff. In most developments the detention ponds are located within common open space but in some developments detention ponds are on private property with a recorded easement for the pond and access to the pond from a public right-of-way. If you are unsure, contact the Township for specific information about your community's detention pond(s).

All detention ponds are designed to fill with rainwater or stormwater runoff during and after significant rain events. Because there are several categories of detention ponds, understanding the type of detention pond you have will help to better plan for its maintenance needs.

- What are the different types of detention facilities?

Some detention ponds are dry and are designed to have mowed grass in the bottom of them. These ponds are referred to as dry detention ponds and they are the most common ponds found throughout the Township.

Some detention ponds are wet or contain water throughout the year, there are very few of these throughout the Township. It should be noted that not all lakes or standing bodies of water are utilized for stormwater detention.

Some are not ponds at all, in the Township there are a few instances where underground tanks or pipe storage is utilized, but these structures operate the same as above ground ponds.

Some ponds, especially in new developments, are called sedimentation removal ponds. These ponds may or may-not be converted to detention ponds after most of the earthmoving activities have been completed and the disturbed areas re-vegetated.

- Are you responsible for detention pond maintenance?

Responsibility for maintenance varies within the Township. However, if your homeowners' association or business owns the property where the pond is located, the answer is most likely YES. There are some exceptions, especially those developments that were installed in the early to mid - 1980's. If you are not sure who is responsible for maintenance, contact the Township, but the pond(s) in your plan ARE THE RESPONSIBILITY OF THE HOMEOWNERS' ASSOCIATION.

Maintaining Your Detention Pond

The first step in a maintenance program is to obtain a copy of the detention pond plan from the Township to determine how your pond was designed to function. Some of the more recent stormwater management plans include a “Post Construction Stormwater Management Plan” that outlines the maintenance steps necessary to assure the functionality of the pond.

- What maintenance tasks are required?

A consistent maintenance program is the best way to ensure that a detention pond will continue to perform its water quality functions. In general, a maintenance program should contain the following components:

- Regular inspections (at least annually);
- Review by a licensed professional engineer, especially if a malfunction is suspected or erosion is evident;
- Vegetation management;
- Embankment and outlet stabilization;
- Debris and litter control, and;
- Sediment and/or pollutant removal.

The remaining sections of this Guidebook will describe the maintenance tasks required for proper pond function as well as frequency of various tasks. The following categories of maintenance tasks are further described in this guidebook:

- Stormwater and storm sewer system and structural components
- Vegetation management, and
- Property management activities that benefit your pond, and good housekeeping activities.

It is very important to make and keep records of all inspections, maintenance activities, repairs and associated costs. An annual Detention Pond Inspection and Maintenance Record is provided for your use to assist in making the needed corrections. Finally, before starting any maintenance activities, check with the Township to determine, what, if any, approvals or permits may be necessary.

Maintenance Tasks: Ponds and Storm Sewer Systems

The storm sewer system includes pipes, catch basins, conveyance appurtenances, ponds, outlet structures that enter or exit the detention pond, and soil stabilization features designed to control soil erosion.

After a significant rain event:

- Conduct an inspection for trash or other debris that may be blocking the inlet or outlet pipes or emergency spillway and dispose properly;
- Remove all trash and debris from the pond and dispose properly;
- Inspect for significant sedimentation accumulation that may be impeding water flow and remove the accumulated sedimentation and dispose properly;
- Check for any signs of erosion and repair as needed;
- Check dam embankment for signs of deterioration and repair as needed.

Annual Inspections:

- Conduct an inspection for trash or other debris that may be blocking the inlet or outlet pipes or emergency spillway and dispose properly;
- Remove all trash and debris from the pond and dispose properly;
- Inspect for significant sedimentation accumulation that may be impeding water flow and remove the accumulated sedimentation and dispose properly;
- Check for any signs or erosion and repair as needed;

- Check dam embankment for signs of deterioration and repair as needed;
- Inspect the inlet pipes and outlet pipes for structural integrity and repair as needed;
- Inspect stone “Riprap” and replace or add if the stone is clogged or infiltrated with sediment and/or debris;
- Compare the existing conditions to the as-built engineering plans and make appropriate repairs.

Maintenance Tasks: Vegetation Management

Annual Inspections:

Many detention ponds rely on vegetation to help filter sediment from stormwater before it reaches the outlet of the pond and to prevent erosion of the banks and the bottom of the pond. Grass is the most common groundcover.

Refer to the Township of Pine Detention Pond/Facility Inspection form provided. The Inspection form may direct attention to the following:

- Access to the detention pond or detention facility;
- Embankment conditions;
- Pond conditions;
- Control Structure and Outfall conditions;
- And any other item that may have an adverse effect on the pond’s operation.

Maintenance Tasks: Good Housekeeping

Good housekeeping refers to specific activities that you as a property owner can perform to enhance detention pond maintenance and minimize long-term maintenance. A number of these activities are described below:

- Do not place or allow yard waste such as leaves, grass clippings or brush in or near the detention pond or in the stormwater inlets located in the roadways;
- Do not dump or allow any materials, such as motor oil, into the storm sewer system;

- Yard waste releases excess nutrients as they decompose and will adversely affect the pond operation and may clog or reduce capacity;
- Do not use pesticides, herbicides, or fertilizers near your pond, and don't over-use fertilizers on your lawns as these can be carried to the pond during heavy rain events. Some of these chemicals can be harmful to the pond's ecosystem and wildlife;
- Pick-up and dispose of pet waste with your weekly trash;
- Provide educational updates to property owners. Discuss maintenance plans at Homeowner's meetings, and relay information to your neighbors.

General: Public Involvement and Participation Program (PIPP)

The Township encourages the public's involvement and solicits the public's input by providing:

- Opportunities for the public to participate in the decision making process associated with development, implementation, and update of programs and activities related to the General Permit will be provided to residents while the program continues to develop;
- Solicitation of public involvement and participation from target audience groups. This will include an effort to encourage public reporting of suspected illicit discharges;
- Assist the public in their efforts to help implement the Township of Pine's Stormwater Management Ordinances (and conduct meetings to discuss and explain the on-going implementation of the stormwater management plan)

NOTE: This booklet is intended to comply with the Township of Pine, Municipal Separate Storm Sewer System (MS4) Minimum Control Measure Plan (Township Resolution #906, adopted November 17, 2014) by addressing:

MCM #1 – Public Education and Outreach on Stormwater Impacts (BMP #1, BMP #2, BMP #3, and BMP #4);

MCM #2 – Public Involvement / Participation (BMP #1, BMP #3).