



## What is a basin?

Basins capture stormwater from the surrounding area to provide a place for runoff to be detained, absorbed, and/or redirected toward creeks and waterways. There are several common ways basins can be improved to maximize their effectiveness and minimize their environmental impact. As severe weather becomes increasingly common in our region, Middletown Township is working to prepare our stormwater infrastructure for our evolving climate.

## Pennsylvania Stormwater Regulations

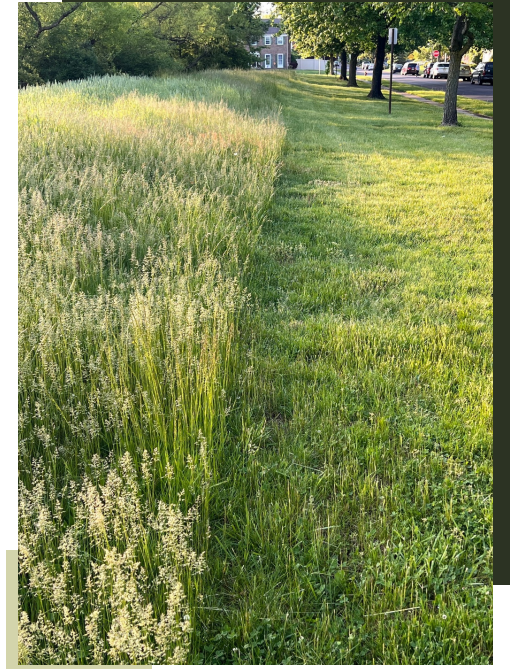
In Pennsylvania, the Department of Environmental Protection (DEP) administers the Municipal Separate Storm Sewer System (MS4) program to ensure stormwater is adequately managed by local authorities. This requires Middletown Township to actively maintain, improve, and invest in our local stormwater management system. Naturalizing a basin is one of the best ways to regulate stormwater. A naturalized basin includes native plants that are effective at naturally absorbing pollutants from stormwater while simultaneously slowing the water passing through them.

## What is the Basin Naturalization Project?

In Fall 2021, Middletown Township retrofitted five basins in the community to prepare them for naturalization. This included (1) planting of native wetland plants and wildflowers, (2) installation of low-level outlet control structures, and (3) installation of riprap aprons. All three components work together to slow the velocity of stormwater, preventing erosion, and increasing retention time, allowing sediment and suspended solids to settle and be diverted away from creeks and waterways.

## Benefits of Naturalized Basins

Naturalized basins have several benefits compared to conventional basins. Vegetation helps to reduce runoff pollutants and improve the quality of the water leaving the basins. Water has a greater ability to recharge into the ground due to native plants' deeper root systems. Insects that reduce the mosquito and tick population are better able to colonize. Less maintenance is required in basin interiors, which can often be hazardous for workers.



### Stormwater Regulations in PA

2011 - PA DEP updates MS4 requirements for municipalities, mandating improvements to stormwater runoff and water quality.

### Bid Specs Prepared

Summer 2019 - Township Engineer prepared specification to bid project.

### Project Awarded

Summer 2021 - Project awarded to contractor J. D. Morrissey.

### Naturalization

Spring 2022 - New plantings begin to grow.

### Grant Awarded

December 2017 - Middletown Township awarded \$175,000 from DEP Growing Greener Grant for sediment reduction initiative in five stormwater basins.

### Project Re-bid

Spring 2021 - BOS authorized bidding project as an alternate to the road improvement program.

### Construction

Fall 2021 - Basins in Highland Gate, Swan Pointe, Sturbridge, Lakeview Estates, and Firefighters' Park are retrofitted and planted with wetland and wildflower seed mixes.

The Township's EAC is a great source of information on naturalized basins. The EAC meeting schedule is on our webpage.