



Chester County Stormwater BMP Tour Guide

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BMP: **Stormwater Basin Wildflower Retrofit**

Site Name: Tredyffrin Township Building

Location: 1100 DuPortail Road ADC Map Coordinates: 24-A4
Directions: From Swedesford Road, turn onto DuPortail Road. Right into township building lot; basin in front of township office building adjacent to parking lot.

Land Use: Government Office

Watershed: Valley Creek (Stream Designation: EV)

Description: This basin retrofit is a simple, low-cost, non-structural modification to an existing lined stormwater basin. This retrofit consists of establishing native wildflowers in the basin bottom several years after the basin's construction. A seed mix was used to establish wildflowers in the basin to enhance its performance in trapping and filtering pollutants present in the stormwater runoff from the township building parking lot and roof. This basin has a minimum of one foot of earth on top of the geotextile liner onto which wildflower seeds were spread.

Function: Wildflowers in the basin enhance the basin's performance in filtering, trapping and uptaking pollutants present in stormwater runoff. The wildflowers have better pollutant-removal capacity than turf grass, the basin's original ground cover. Common stormwater runoff pollutants including suspended solids like dirt and sand can be trapped by the vegetation and with them oil and grease that may be bound to suspended particles. Nutrient pollutants, including phosphorous and nitrogen, may be biologically removed or taken up by wildflower plants in the basin. Wildflowers in the basin offer a naturalized look and are an aesthetic enhancement.

There is confidence that the wildflower plantings in the basin enhance its pollutant-removal potential; however, there is limited available data on the pollutant removal capacity of the wildflower mix used. Consult the Appendix and other references for suggested plantings and their pollutant removal benefits.

Operation and Maintenance: The Chester County Conservation District considers this retrofit project to be a low-maintenance structure. Operation and maintenance requirements include the following:

- Inspect regularly to ensure the integrity of the basin's liner and ensure proper functioning of the basin's structural components
- Avoid the use of heavy equipment and sharp objects in the basin to protect its liner.
- Remove invasive plants as necessary, including shoots and roots, from within the basin and around the inlet and outfall structures
- Mow once or twice a year to coincide with seasons
- Remove trash as necessary
- Avoid use of pesticides and fertilizers in the basin

Cost Factors: This is a low cost modification to an existing lined stormwater basin. The cost of seeds was nominal. Maintenance costs following this retrofit may be reduced since the wildflowers require only annual or semi-annual mowing, in contrast to turf grass, which may require weekly mowing during the growing season. There may be maintenance costs associated with manual invasive plant removal as necessary, as well as removal of vegetation growing too close to the basin's structural components.

For More Information

Designer: Carroll Engineering

Owner: Tredyffrin Township. (Township Engineer, William Bryant)

References

Center for Watershed Protection, *Approaches to Stormwater Treatment*, Copyright 2001.

Pennsylvania Handbook of Best Management Practices for Developing Areas, Prepared by CH2MHILL, Spring 1998.

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Wildflower seed mix was dispersed in an existing stormwater basin to enhance its pollutant removal capacity.

