Smithfield Township's MS4 Program

(Municipal Separate Storm Sewer System)



Presentation provided by:



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MS₄ Program

- An MS4 is a collection of storm sewer structures, including basins, ditches, inlets, and piping that are designed to collect and discharge stormwater into streams without prior treatment.
- In 2016 the Township was required to apply for a permit through the Pennsylvania Department of Environmental Protection due to the existing high quality streams, such as the Brodhead and McMichael Creeks, and the population density. This permit has an effective date of September 1, 2018 and expires August 31, 2023.
- Since the effective permit date, LVL Engineering Group and Smithfield Township have partnered to comply with several permit requirements including the 6 Minimum Control Measures, and sediment load and pathogen reduction.
- The Township is currently in Year 4 of the 5-Year Permit Period. Year 4 ends June 30th.

MCM #1: Public Education and Outreach

Educational documents are posted on the Township website and in the Municipal Lobby, and are distributed through media outlets such as Facebook and the Township newsletter.

MCM #2: Public Participation and Involvement

Volunteer opportunities are advertised through media outlets and include events such as Pick Up the Poconos and the Township's Spring Clean-Up.





MCM #3: Illicit Discharge and Elimination

Illicit discharge education is distributed through the Township's website and media outlets.

Illicit Discharges can be caused by a variety of sources:

- Untreated sewage or septic discharges
- Dumping of hazardous materials to stormwater inlets
- Industrial discharges
- Careless vehicle maintenance

Observation of outfalls are performed twice during the 5-year permit period. LVL Engineering Group performed screenings over Year 2 and during this Year 4.





MCM #4: Construction Site Stormwater Runoff Control MCM #5: Post-Construction Stormwater Management Township ordinances follow the PADEP Chapter 102 requirements for erosion and sedimentation controls and post-construction stormwater management.

Projects over 1-acre are required to submit to the Monroe County Conservation District for a review. The Township is required to notify the Conservation District of projects over 1-acre.





MCM #6: Pollution Prevention and Good Housekeeping

The Township distributes an operation and maintenance outline to their public works department yearly. The outline discusses the following:

- Awareness of illicit discharges and illegal dumping.
- Excessive sediment, use of erosion and sedimentation controls, and the improper containment of trash on active construction

projects.

- Maintenance of existing stormwater management facilities.
- Vehicle maintenance
- Hazardous materials

Pollutant Reduction Plan Sediment Reduction

- 2,178 acres of identified Urbanized Area partly discharges stormwater to two unnamed tributaries of the Sambo Creek, and partly discharges stormwater to the Sambo Creek alone.
- The calculated sediment load is 754, 282 pounds per year.
- The Township is required to reduce the existing calculated sediment load by 10% or 75,428 pounds per year.
- Current development including Vigon, Black Buffalo, and Eagle Valley Self Storage can aid in reducing the required sediment load.

Pollutant Reduction Plan Pathogen Reduction

- 2,942 acres of identified Urbanized Areas partly discharges stormwater to the Brodhead Creek which drains to the Delaware River, or partly discharges stormwater to the Delaware River alone.
- Public education and monitoring potential pathogen sources can reduce the pathogens within the impaired waterways. The Year 3 report identified the following potential sources:

Sewage		
<u>Pathogen Source</u>	Description	
Combined Sewers	Collect both stormwater and sanitary discharge in one system.	
Leaking Sewers	Old or damaged public sewer infrastructure which allows for the discharge of untreated sewage	
Malfunctioning Septic Systems	Malfunctioning systems discharging untreated sewage to the ground surface.	
Wastewater Treatment Plans	Existing plants that treat sewage and discharge to a neighboring stream	
Recreational Facilities	Potential sewage or gray water discharges from marina facilities or boats, or pathogens occurring due to swimming and the presence of pets.	

Animal Waste		
Pathogen Source	<u>Description</u>	
Manure Applications	Improper application of manure to agricultural fields can contaminate local streams.	
Grazing Livestock	Isolation of livestock from riparian zones and providing bridges for channel crossing.	
Large Concentrated Animal Operations	Impairment to streams can occur by improper diversion of runoff and seepage/discharge from liquid manure storage areas.	
Backyard Animal Operations	Small backyard animal operations, i.e., chickens. Improper setbacks and disposal of wastes can impair streams	
Pet Boarding	Improper management of waste at pet boarding facilities.	
Pet Waste/Dog Parks	Failure of picking up after a pet can lead to impacts to local streams during storm events.	
Wildlife	Fecal matter from wildlife can be a source of pathogens in watersheds.	

Stormwater Management Ordinance

• Include definitions for green infrastructure and low impact development.

GREEN INFRASTRUCTURE - systems and practices that use or mimic natural processes to infiltrate, evapotranspire, or reuse stormwater on the site where it is generated.

LOW IMPACT DEVELOPMENT - site design approaches and small-scale stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater. LID can be applied to new development, urban retrofits, and revitalization projects. LID utilizes design techniques that infiltrate, filter, evaporate, and store runoff close to its source. Rather than rely on costly large-scale conveyance and treatment systems, LID addresses stormwater through a variety of small, cost-effective landscape features located onsite.

- Include the required need for a PADEP NPDES permit for the MS4.
- Include Volume Controls which will require developers to meet the NPDES requirements of groundwater recharge.

Year 4 Report Summary

- Programs for each Minimum Control Measure including documentation of how each MCM has been satisfied.
- Provide a list of newly constructed and/or proposed Best Management Practices that can reduce the sediment load.
- Provide a list of Pollutant Control Measures including the sources of pathogens.
- Provide the Outfall Observation Reports.
- Provide proof that the Stormwater Management Report has been updated to be consistent with the 2022 model ordinance.

Questions and Comments

Additional MS4 educational materials can be found on the Township's and the Pennsylvania Department of Environmental Protection's websites.