



Stormwater User Fee Feasibility Project

Stormwater Advisory Committee Background – Primer on Stormwater Management in Ferguson Township

Managing stormwater is a core function of the Township's service to the community. The Township works to protect the health, safety, and welfare of its residents by caring for water quality and preventing flood damages. The current study provides an opportunity to review the stormwater program to see how to make the program more effective through input and guidance from the community on priorities and funding strategies.

This document is intended to provide information in a question and answer format on current stormwater management concepts, including a discussion of how it is paid for, and how the Township may need to expand or adjust the program to achieve local water resource management goals.

1. WHAT IS STORMWATER?

Stormwater is the rainwater and snowmelt that flows across land and through a series of pipes and channels, finally flowing into either local streams or farm fields and depressions (i.e., sinkholes). In a natural setting like a forest or meadow, most runoff is absorbed into the ground or evaporates; some flows across the land to the nearest stream or wetland. As stormwater flows across neighborhoods, parking lots, schools, and businesses, it accelerates, picks up pollutants such as dirt, grease, chemicals, and other debris, and carries them to streams or often, directly into the local aquifer and groundwater resource (by way of sinkholes).

2. WHAT IS IMPERVIOUS SURFACE?

Impervious surfaces are hard surfaces that do not allow rain or snow to soak into the soil. These surfaces include rooftops, driveways, patios, sidewalks, and parking lots.

3. WHY DO WE NEED TO MANAGE STORMWATER?

As the Township grew and landowners created more impervious surfaces, the community changed the way stormwater runoff flows. These hard surfaces prevent stormwater from soaking into the ground. So the more hard surfaces we create, the more stormwater flows onto our streets, into streams and sinkholes, and under our culverts and bridges. Uncontrolled runoff from impervious surfaces may cause floods to be more damaging; and allow for more pollutants to enter the local water bodies.

The Township has a stormwater network that controls some of this runoff, and any new development is required to manage flows from its property. However, the Township must make sure that these structures are kept clean and functioning properly.

4. IS STORMWATER A PROBLEM IN FERGUSON?

Yes. As development occurred and neighborhoods were built, the Township inherited or built a network of curbs, gutters, channels, and pipes to carry rain as it moves from and across properties. Over time, pipes will deteriorate, channels have eroded, grown thick with trees and sometime debris, and inlets that collect water from the roads are aging. The Township has resources to make the most critical repairs but may not be addressing routine maintenance at a frequency to avoid aging impacts. In addition, the Township has an Individual stormwater discharge permit from the Pennsylvania Department of the Environment (PADEP), referred to as a Phase II National Pollutant Discharge Elimination System (NPDES) permit. This permit was renewed in August 2013 and must be renewed by August 2018. There are new,



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more stringent permit conditions that must be met, based on guidance from the PADEP. In addition, there are other laws and regulations impacting stormwater management that the Township must address.

5. ARE FERGUSON'S STREAMS IMPACTED BY POLLUTANTS?

Yes. Based on the Chesapeake Bay Total Maximum Daily Load (TMDL) federal mandates to address sediment, nitrogen and phosphorus, waters draining to the Bay must be controlled to reduce these pollutants. The State of Pennsylvania is one of five states that must control these discharges through the NPDES permits issued to local jurisdictions such as Ferguson. More will be shared on the details of the permit requirements.

6. DOES FLOODING OCCUR IN FERGUSON?

Yes. The Township is aware of a number of locations where flooding is known to occur during large rainfall events. Some storms move so much water that sediment, trees, and debris may block stream channels. The Township's Department of Public Works monitors specific catch basins, street intersections, and low-lying areas during storms where flooding is known to occur. Prior to significant rainfall events, the Township dispatches crews to inspect known problem areas, clear stormwater inlets, and make sure pipes are open and can receive rainwater. Over the past decade considerable effort has been expended to reduce or remove many known flooding conditions through investment in stormwater controls throughout the Township.

7. WHAT STORMWATER SERVICES DOES THE TOWNSHIP PROVIDE?

To meet its responsibility to protect the public health, safety, and welfare, the Township provides stormwater services in four key areas.

- a. **Program Administration.** The Public Works Department (PWD) Director and Township Engineer oversee stormwater-related activities with the support of the staff of the PWD and in conjunction with other services such as Planning.
- b. **System Cleaning and Maintenance.** The PWD Director manages 10 staff who, in addition to all other duties, perform and track the following stormwater management activities to maintain the structure and function of the stormwater conveyance system.
 - i. Stream enclosures and culvert maintenance
 - ii. Routine conveyance system cleaning, repair, and replacement
 - iii. Street sweeping and leaf collection
 - iv. Pre-storm preparation and post-storm clean-up activities
 - v. Inlet repairs
 - vi. Pipe video and cleaning
 - vii. Pipe repairs/replacement
 - viii. Ditch cleaning.
- c. **Asset Management.** The Township maintains a map of the stormwater network and a work-order system that provides a basis to track maintenance needs, and citizen inquiries and complaints about the drainage network. As land development occurs, proposed additions to the storm sewer network are reviewed to make sure the design and construction are consistent with the latest regulations and will not cause downstream impacts.
- d. **Capital Projects, Equipment & System Replacement.** There are some areas that may need major system replacement or upgrades. The Township coordinates small storm sewer system repairs and large scale stormwater improvement projects, such as "Park Hills Drainageway Improvements", are programmed for the near future.



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- e. **NPDES Phase II Individual Permit compliance.** The Township Engineer, with staff support, oversees the compliance with the Township's Phase II Individual NPDES permit. This includes support from the County Conservation District for erosion and sediment control and construction permits. The Stormwater Permit requires programs in Public Education and Public Involvement, Construction Management, Illicit Discharge Detection and Elimination, Post Construction Management Controls and Good Housekeeping Best Practices. The Township's current permit expires in August 2018.

8. WHO BENEFITS FROM THESE STORMWATER SERVICES?

Everyone benefits. By managing stormwater, the Township keeps roads clear, reduces property damage from flooding, protects public culverts and bridges, and reduces pollutants from entering local streams and into the local drinking water supply system.

9. WHAT DO THESE STORMWATER SERVICES COST?

The cost of providing these basic services in FY2017 is approximately \$624,270. This cost includes contracted maintenance, materials, staff time, equipment maintenance, and contracted engineering services.

10. WHO DECIDES THE TOWNSHIP'S STORMWATER MANAGEMENT PRIORITIES?

The Board of Supervisors, supported by staff, approves stormwater activities that need to be addressed operationally through the budgeting process and through the development and implementation of the 5-year capital improvement plan. Every year, priorities are considered when creating the annual budget. When new projects or services are identified, staff present recommendations for project priorities to the Board, who approve the spending plan. As the Township responds to system needs and water quality mandates, new priorities may arise that will require additional money. This study will review and evaluate methods available to the Township for funding current and future program requirements.