

# Storm Water in Hulmeville Borough



# **The Who's Who of it all...**

## **Storm Water Management Program**

**Neshaminy Creek Watershed**

**Sub-Watershed**

**Neshaminy Creek Watershed No.3**

**Municipal Separate Storm Sewer System (MS4) under the  
National Pollutant and Discharge Elimination System  
(NPDES) Phase II Storm Water Program (SWP)**

**With Total Maximum Daily Load (TMDL) Reduction Plan**

## **Let's Talk About. . .**

- **What storm water is and why it can be a problem in our community**
- **What our community is doing to manage storm water and how these activities will benefit us all**

# What is Storm Water?

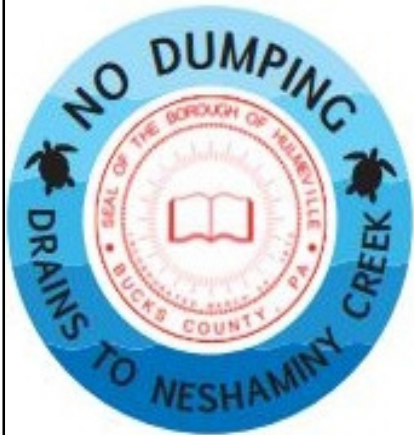
- **Rain events**
- **Snow melt**
- **Other surface runoff and drainage** (ie sump pumps running outside a rain event, swimming pool discharge)



# Where Does Storm Water Go In Our Community?

- **Travels over land** — there are several bridge structures as well as ditches and swales
- **Carried through municipal separate storm sewer system (MS4)** — 58 storm drain inlets in the borough
- **Discharges into the Neshaminy Creek and several tributaries**





# Outfall & Storm Sewer Map



**Legend**

- Open Channel/Swale
- Storm Inlet
- Storm Manhole
- Storm Pipe
- Borough Street
- Paper Street
- PennDOT Road

**Outfall Locations**

- 001 Ford Ave Inlet at Main St
- 002 Inlet North Side Main St Southeast of Reetz Ave
- 003 Washington Ave Inlet at Main St
- 004 10 Main St Inlet
- 005 10 Main St Inlet
- 006 129 Green St
- 007 15 McCarthy Drive
- 008 1 Michelle Court

GRAPHIC SCALE

# **A “Point” of Confusion: Point Source vs. Nonpoint Source**

## **■ POINT source**

- Travels through a conveyance system**
- Regulated under permit program**
- Water is directly controlled**

## **■ NONPOINT source**

- Runoff that is indirectly controlled**
- Addressed through voluntary programs**
- Example is runoff from forest areas & parking lots**

# Why is Storm Water a Problem?

- **Problem: Decrease in quality**

Due to runoff pollution

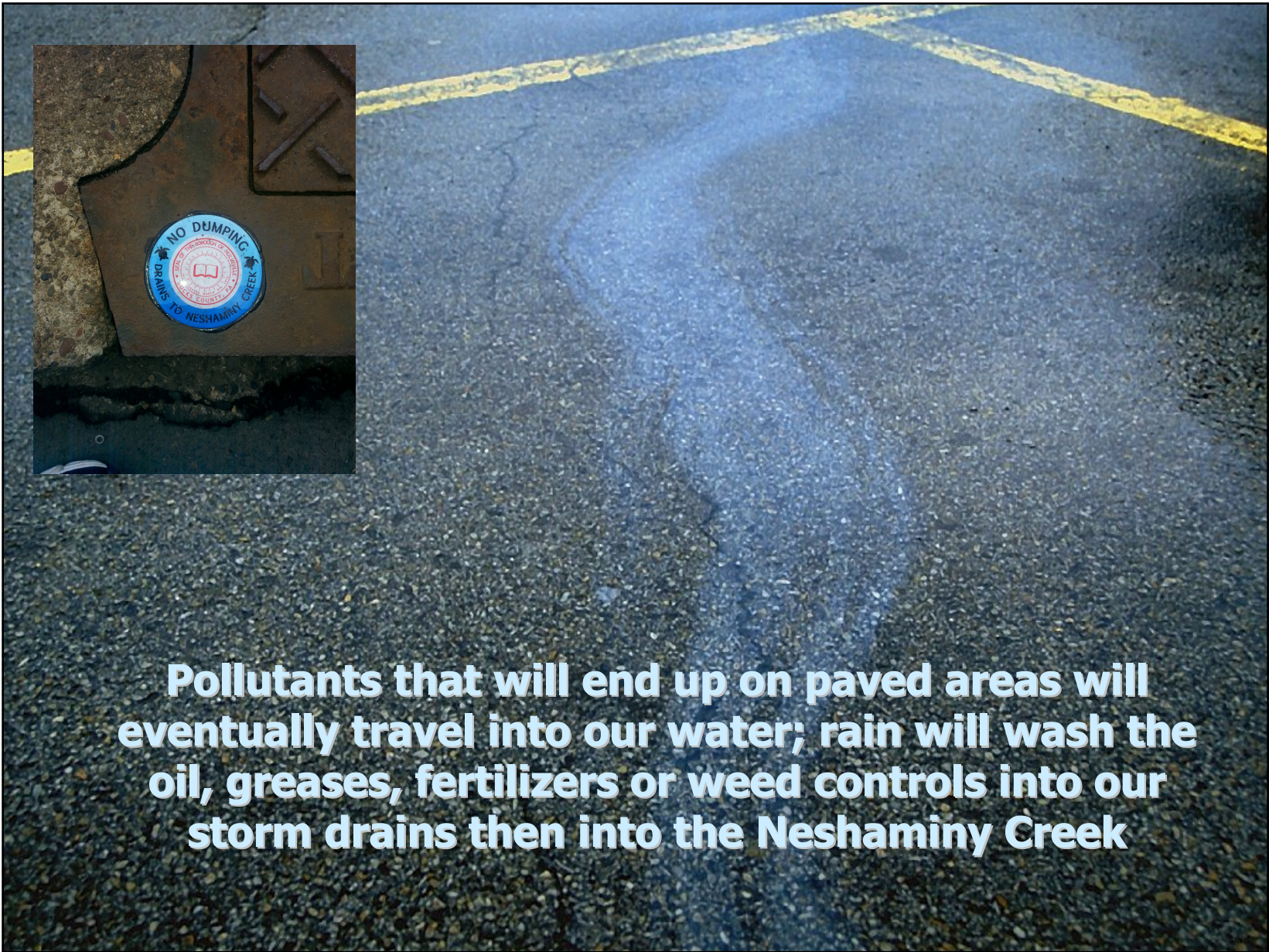
- **Problem: Increase in quantity**

Due to impervious surfaces

- **Cause: Developed and disturbed land**







**Pollutants that will end up on paved areas will eventually travel into our water; rain will wash the oil, greases, fertilizers or weed controls into our storm drains then into the Neshaminy Creek**



**Litter is carried by storm water and then clogs our inlets and tributaries which can lead to added flooding problems**

# **Why is Storm Water a Problem?**

- **Problem: Non-storm water discharges enter systems**
- **Cause: Illicit discharges**
- **Cause: Illicit connections**
- **See next slide for examples....**

**Proper discharge** is a sump pump's line going outside onto grass areas and not into a storm drain or a sewer line



**Improper-illicit discharge** is directly spilling contaminates – including a sump pump's discharge – directly into a storm drain or a sewer line



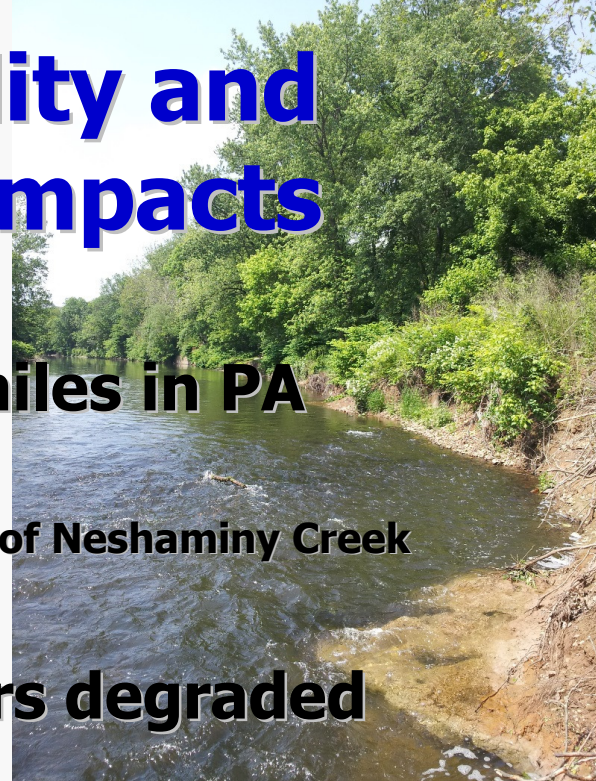
# Storm Water Pollutants



- Sediment
- Trace Metals
- Nutrients
- Toxic Chemicals
- Bacteria
- Chlorides
- Oxygen Demand
- Thermal Impacts
- Oil and Grease

# PA Water Quality and Storm Water Impacts

- **Total of 83,161 stream miles in PA**
  - 54% of total assessed
  - Hulmeville Borough has 7,200 feet of Neshaminy Creek
- **18.1% of assessed waters degraded**
- **Urban runoff #3 source of impairment**
  - 1187 miles of rivers and streams
  - 14.5% of all impaired river and stream miles



From 2001 305(b) Report Update

**Now We Know About  
Storm Water and Its  
Impacts on Our  
Community. . .**



**But What Are We  
Doing About It?**



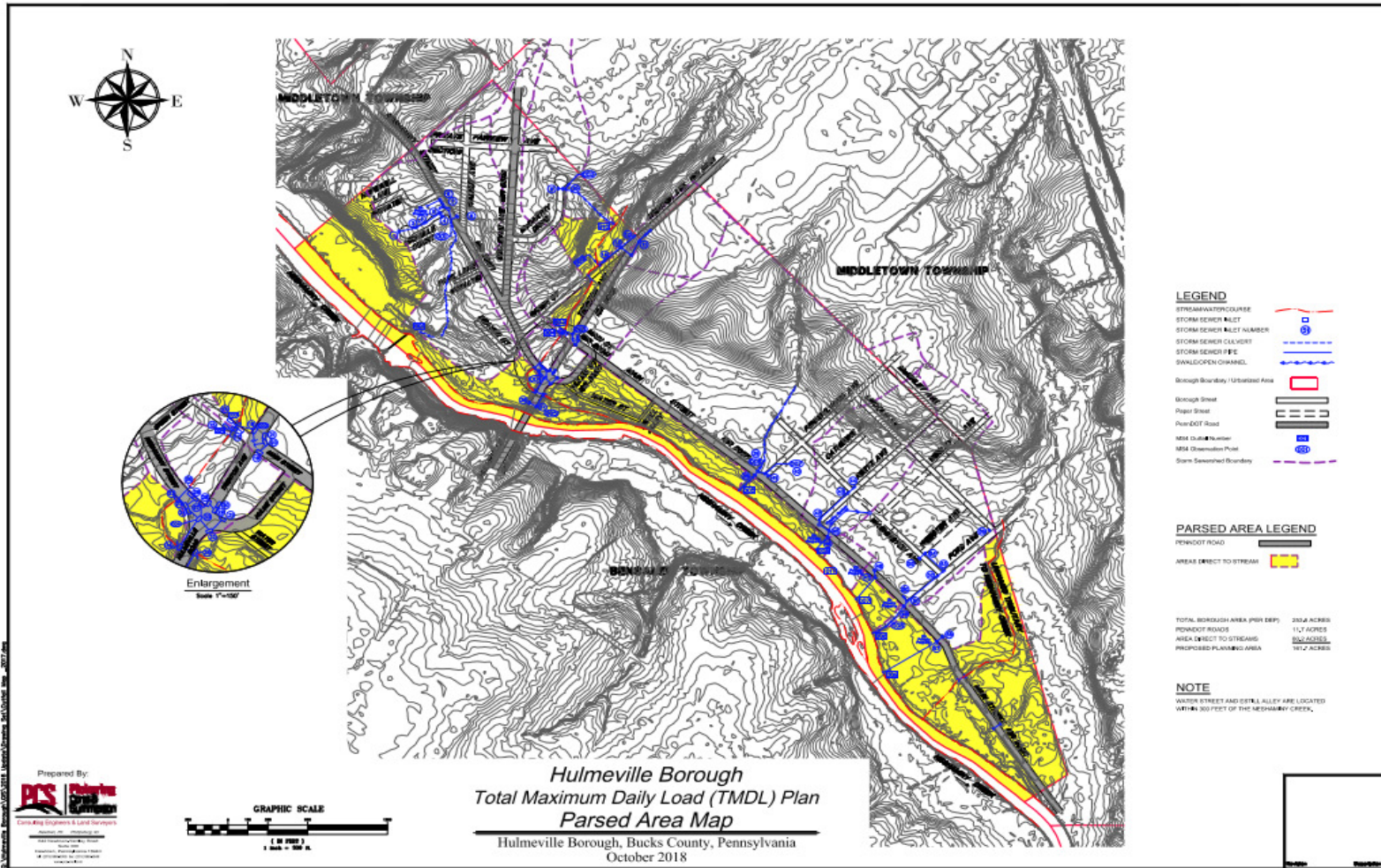
## **Sediment & Pollution Reduction Expectation**

**The Neshaminy Creek is identified in the TMDL report as being impaired due to siltation from development in the watershed and establishes the current loading rate for sediment as 1,414,300 lbs/year.**

**Hulmeville Borough comprises approximately 8.7 percent (248 acres) of this watershed and thus contributes approximately 123,044 lbs/year (existing 117,406) of sediment to the total calculated sediment load.**

*Revised notes to PA DEP November 21, 2018 prepared by RETTEW & submitted by Pickering, Corts & Summerson*

# Parsed Area Map

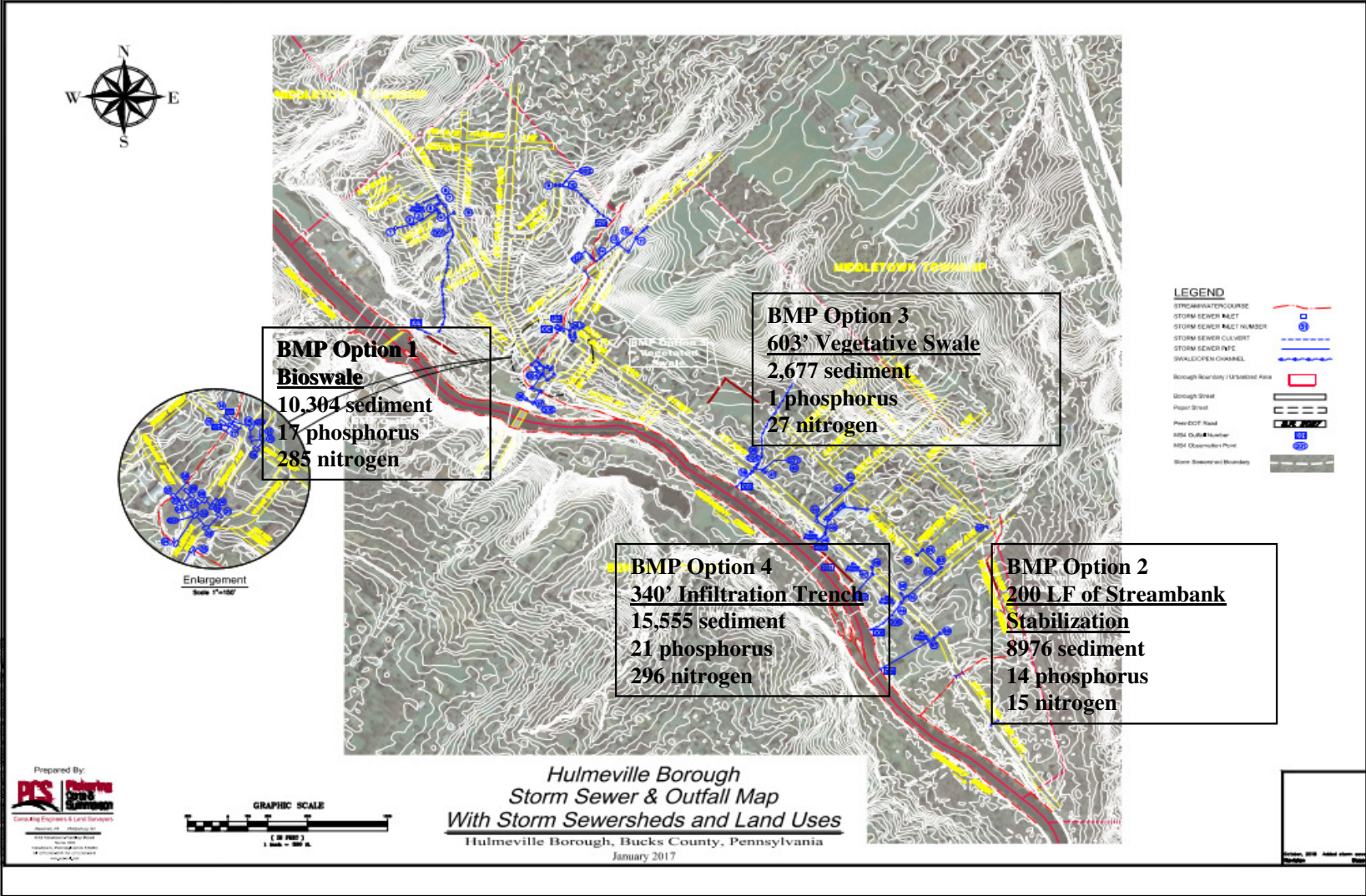


# Hulmeville Borough's Allotment

To achieve water quality standards, the TMDL report establishes a 36.4% reduction (42,734.36 lbs/yr) in sediment loads throughout the watershed. The Borough must achieve a minimum 10% (11,741 lbs/yr) sediment reduction, 5% (10.2 lbs/yr) phosphorus reduction, and 3% nitrogen reduction (104 lbs/yr) over the 5-year period following PA DEP's approval of coverage

*Revised notes to PA DEP November 21, 2018 prepared by RETTEW & submitted by Pickering, Corts & Summerson*

# Proposed Projects



# What do the Projects Cost?

Proposed BMP	Watershed	Calculated Sediment Reduction (lbs/year)	Calculated Phosphorus Reduction (lbs/year)	Calculated Nitrogen Reduction (lbs/year)
BMP Option 1: Bioswale	Neshaminy Creek <u>580' Bioswale \$240 - \$360 - County &amp; Private Property</u>	10,304	17	285
BMP Option 2: Streambank Stabilization - UNT Neshaminy Creek	Neshaminy Creek <u>200 LF of Streambank Stabilization \$360 - \$420 - Private Property</u>	8,976	14	15
BMP Option 3: Vegetated Swale	Neshaminy Creek <u>603' of Vegetative Swale \$240 - \$360 - Private &amp; Borough Property</u>	2,677	1	27
BMP Option 4: Infiltration Trench	Neshaminy Creek <u>340' Infiltration Trench \$ 383,750 per acre - County Property</u>	15,555	21	296
	<b>Total</b>	<b>37,512</b>	<b>53</b>	<b>623</b>

**The prices are annual maintenance costs for each installed project with projected upfront costs.**

## **How will the Projects be Funded?**

**This is an unfunded government mandate. Hulmeville, along with all other municipalities, needs to find the funds to complete the projects:**

- **Grants: Growing Greener & PA DEP's Urban Stormwater BMP**
- **PENNVEST: Pennsylvania Infrastructure Investment Authority funding**
- **Hulmeville Borough General Fund**
- **Collaborations with other municipalities, environmental groups, & possibly property owners**

**Take a relaxing,  
calming breath...**

# **Storm Water Permit Program for Small Communities**

- **Federal regulation requires permit for our community**
- **PA DEP created state permitting program to meet federal regulation**



# What Does Our Permit Require?

- **Enforce a storm water management program including Best Management Practices (BMP)**
- **Track progress toward goals**
- **Report on our progress**

***Annual progress reports are to be submitted by June 30, each year***

# **You also need to apply for a permit to do proposed work or store items in floodplain**

## **Some allowable items are:**

- Proposed projects under 500 sf that have minor land disturbance**
- Storing ATV's, RV's, Trailers**
- Placement of sheds, swing sets, and other structures**

***Please note that permits are still required for the items mentioned above.***



## HULMEVILLE BOROUGH INCORPORATED 1872

321 Main Street • Hulmeville, PA 19047 • 215-757-6531 • Hulmeville@comcast.net

### Stormwater & Floodplain Development Fees

Fees must be submitted to Hulmeville Borough for an Application to be accepted for review. Checks are to be made payable to Hulmeville Borough.

#### **Fee Information:**

- Fee charges apply to projects with proposed development within the limits of the Floodplain and/or affects to stormwater.
- Phased projects submitted under a single application will be charged a new fee for each phase requiring a separate review.
- Projects owned and funded by local governments within Hulmeville Borough are exempt from fee charges
- Expired applications and permits will require a new application and a new fee charge will apply
- Fee charges for Stormwater & Floodplain Development Permit Applications submitted after development activities have commenced, will be doubled due to additional staff time investigating and reviewing the violation.
- Hulmeville Borough does not perform: Encroachment Studies, Major Floodplain Impact Studies, Major Encroachment Studies, Elevation Certificates, Map Revisions (LOMR - Letter of Map Revision, nor Levee. The applicant is responsible to higher an engineer to suffice any of the aforementioned requirements).

#### **Fee Charges for Floodplain Development Applications:**

- \$25** Inside the Floodplain  
 Interior Improvements/Repairs to existing building\* with no soil disturbance nor outside storage of materials  
Outside the Floodplain  
 Interior or exterior Improvements/Repairs or new construction\*
- \$50** Minor Floodplain Impact  
 New habitable building - Residential Parcel-Single lot & Commercial Parcel-Single lot  
 Other Development (Land/Site Development) - Residential Parcel-Single lot & Commercial Parcel-Single lot  
 Other Development (non habitable building or accessory structure-shed over 201 sq.ft./garage, fill over 5 cu.yds. /landscaping over 201 sf. ft., Infrastructure-utilities, storm water, sewer, roads) - Residential Parcel-Single lot & Commercial Parcel-Single Lot
- \$25** Minor Floodplain Impact  
 Other Development (non habitable building or accessory structure-shed under 200 sq.ft./garage under 200 sf. ft., fill under 5 cu.yds./landscaping under 200 sf. ft.) - Residential Parcel-Single lot & Commercial Parcel-Single Lot
- \$50** Permit Revision  
Minor revisions\*\* to an Approved Floodplain Development Permit

#### **Soil Disturbance\*\*\* fees (as per ACT 167 guidelines)**

- No fee  Zero soil disturbance
- \$25**  0 - 200 square feet (sf.) of soil disturbance with an escrow of \$200.00
- \$25**  201 - 600 sf of soil disturbance with an escrow of \$500.00
- \$100**  601 - + sf of soil disturbance with an escrow of \$1,500.00

Areas 1 acre + will need to secure a permit with NPDES (National Pollutant Discharge Elimination System) Permit

\* Applicable building permits still apply

\*\* Minor revisions are changes to the plans that do not require another full review of the proposed development. Major revisions will require either a full re-view or a new application, and a new fee charge will apply.

\*\*\* Driving over land, digging into soil from 0"+, any transport over soil, storage of any building materials on soil areas



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**Application for Floodplain Development Permit**

The following information is in accordance with Title 44 Code of Federal Regulations Section 60.3(d) from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) & Hulmeville Borough Ordinance No. 265

**Property Data**

Property Address: \_\_\_\_\_

Tax Map Parcel Identification Number: \_\_\_\_\_

Zoning District of Property: \_\_\_\_\_

Current use of property: \_\_\_\_\_

Size of lot: \_\_\_\_\_

**Property Owner Information**

Name(s): \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

**Applicant/Contractor Information**

Name: \_\_\_\_\_ Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax/E-mail: \_\_\_\_\_

Contact Person: \_\_\_\_\_ HIC#: \_\_\_\_\_

**Regulatory Information**

The Check sheet attached is for the following Flood District:

- AE Zone with floodway
- AE Zone without floodway
- A Zone
- X Zone

The type of development is:

- New Habitable Building/structure
- Improvements or repairs to existing building/structure
- Other development (Accessory structures, recreational vehicle parking, grading, paving, etc.)

I have \_\_\_\_\_ / I have not \_\_\_\_\_ attached payment in the amount of \$ \_\_\_\_\_ for the Floodplain Development Permit (See Floodplain Fee Schedule)

**Certification**

The undersigned hereby certifies that he/she is either the owner or the authorized agent of the owner and hereby makes this application for permit and that all documents submitted in support of the application are correct to the best of my knowledge.

\_\_\_\_\_  
Print Applicant's Name                      Applicant's Signature                      Date

1. Have there been any claims for damages on the Premises caused by flooding within the last ten (10) years and, if so, please state:
  - a). Dates of each claim: \_\_\_\_\_
  - b). Detailed description of each flood: \_\_\_\_\_
  - c). Value of Damage sustained in each claim: \_\_\_\_\_
  - d). Amount of recovery for damages in each claim: \_\_\_\_\_
2. Listing of other Permits Required: \_\_\_\_\_

**IF THE PREMISES IS LOCATED IN THE FLOODPLAIN, PROVIDE THE FOLLOWING:**

3. Brief description of proposed work and estimated cost, including a separate detailed line listing of flood related costs and the market value of the building before the flood damage occurred where appropriate (attach a continuation sheet if necessary):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Attach a plot plan of the site of the proposed work setting forth the exact size and location of the proposed construction as well as any existing buildings or structures.
5. Kindly provide all the necessary information in sufficient detail and clarity to enable the Floodplain Administrator to determine that:
  - a). all such proposals are consistent with the need to minimize flood damage and conform with the requirements of Floodplain Regulations and all other codes and ordinances;
  - b). all utilities and facilities, such as sewer, gas, electrical and water systems are located and constructed to minimize or eliminate flood damage;
  - c). adequate drainage is provided so as to reduce exposure to flood hazards;
  - d). structures will be anchored to prevent floatation, collapse, or lateral movements;
  - e). building materials are flood-resistant;
  - f). appropriate practices that minimize flood damage have been and will be used; and
  - g). electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities have been designed and located to prevent water entry or accumulation.
6. Applicants shall file the following minimum information plus any other pertinent information as may be required by the Floodplain Administrator to make the above determination:
  - a). A completed Permit Application Form, including all information requested.
  - b). A plan of the entire site, clearly and legibly drawn at a scale of one (1) inch being equal to one

hundred (100) feet or less, showing the following:

- i. north arrow, scale, and date;
- ii. topographic contour lines, if available;
- iii. the location of all existing and proposed buildings, structures, and other improvements, including the location of any existing or proposed subdivision and development;
- iv. the location of all existing streets, drives, and other access ways, and
- v. the location of any existing bodies of water or watercourses, identified floodplain areas, and, if available, information pertaining to the floodway, and the flow of water including direction and velocities.

c). Plans of all proposed buildings, structures and other improvements, drawn at suitable scale showing the following:

- i. the proposed lowest floor elevation of any proposed building based upon North American Vertical Datum of 1988;
- ii. the elevation of the base flood;
- iii. supplemental information as may be necessary under 34 PA Code, the 2009 IBC or the 2009 IRC.

d). The following data and documentation:

- i. elevation certificate;
- ii. detailed information concerning any proposed flood proofing measures and corresponding elevations;
- iii. if available, information concerning flood depths, pressures, velocities, impact and uplift forces and other factors associated with a base flood and Floodway area, demonstrating that the proposed project, when combined with all other existing and anticipated development, will not increase the base flood elevation at any point;
- iv. a document, certified and sealed by a registered professional engineer or architect, which states that the proposed construction or development has been adequately designed to withstand the pressures, velocities, impact and uplift forces associated with the base flood. This statement shall include a description of the type and extent of flood proofing measures which have been incorporated into the design of the structure and/or the development;
- v. detailed information needed to determine compliance with Section 5.C.(6), Storage, and Section 5.D, Development which may endanger Human Life of the Floodplain Regulations, including:
  - a). the amount, location and purpose of any materials or substances referred to in Section 5.C.(6) and 5.D which are intended to be used, produced, stored or otherwise maintained on site; and
  - b). a description of the safeguards incorporated into the design of the proposed structure to prevent leaks or spills of the dangerous materials or substances listed in Section 5.D during a base flood;
- vi. the appropriate component of the Department of Environmental Protection's Planning Module for Land Development;
- vii. where any excavation or grading is proposed, a plan meeting the requirements of the Department of Environmental Protection, to implement and maintain erosion and sedimentation control.

7. Applications for Permits shall be accompanied by a fee, established by and payable to Hulmeville Borough based upon the estimated cost of the proposed construction as determined by the Floodplain Administrator.



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**CERTIFICATION for DEVELOPMENT IN FLOODPLAIN**

Applicant certifies that the information set forth in and attached to this Application for Permit is true and correct to the best of its knowledge, information and belief.

SWORN AND SUBSCRIBED  
BEFORE ME THIS        DAY  
OF                            , 20        .

Notary

\_\_\_\_\_  
Applicant Name

\_\_\_\_\_  
Print Name

## **Storage of most items in the floodplain is prohibited**

**Items that are no longer able to be stored/placed are:**

- **Fences**
- **Wood Piles**
- **Compost Piles**
- **Swimming Pools**
- **Construction equipment and debris**



**Items not secured  
in floodway will wash  
down stream and become  
a problem to others.  
This will bring penalties  
to Hulmeville Borough  
from the EPA as it is also  
against the  
Clean Water Act.**

# Our Storm Water Program

## The 6 Minimum Control Measures (MCM's)

**1 Public Education**

**2 Public  
Involvement**

**3 Construction Site  
Runoff  
Management**

**4 Post-Construction  
Storm Water  
Management**

**5 Illicit Discharge  
Detection and  
Elimination**

**6 Good  
Housekeeping  
and Pollution  
Prevention**





# Public Education and Outreach on Stormwater Impacts

## MCM 1

- **BMP #1: Develop, implement and maintain a written Public Education & Outreach Program**
- **BMP #2: Update a list of target audiences**
- **BMP #3: Annually publish general storm water educational information on the Web-site and in the Town Crier, Water bills, and other mailings**
- **BMP #4: Distribute educational materials developed by PA DEP**



# Public Involvement/Participation

## MCM 2

- **BMP#1: Develop, implement and maintain a written Public Involvement & Participation Program**
- **BMP#2: Provide public notice & opportunities for public review of storm water program**
- **BMP#3: Solicit public involvement and hold a public meeting on the program**



# Illicit Discharge Detection and Elimination

## MCM 3

- **BMP#1: Continue program for the detection, elimination and prevention of illicit discharges**
- **BMP#2: Keep our storm sewer system map updated**
- **BMP#3: New permittees shall show (and renewal permittees shall update) their storm water collection system**
- **BMP#4: Conduct outfall field screenings, identify illicit discharge, and remove or correct any illicit discharge**
- **BMP#5: Update our existing stormwater management ordinance & enforce non-storm water discharge into our systems**
- **BMP#6: Educate community on problems related to dumping in storm sewers**



# Construction Site Storm Water Runoff Control

## MCM 4

- There are four BMP's that are satisfied by relying on DEP's statewide NPDES Permits for Storm water Discharges Associated with Construction



**Good construction runoff control vs. Bad construction runoff control**

# Post-Construction Storm Water Management

## MCM 5

- **BMP#1: Develop procedures that outline post-construction storm water management**
- **BMP#2: Implement structural or non-structural components that minimize water quality impacts**
- **BMP#3: Develop controls that prevent or minimize water quality impacts**
- **BMP#4: Ensure proper operation and maintenance of post-construction storm water management runoff**
- **BMP#5: Develop measures to encourage Low Impact Development in new & redevelopment**
- **BMP#6: Ensure proper operation and maintenance of all installed post-construction storm water management controls**



# **Pollution Prevention/ Good Housekeeping**

## **MCM 6**

- **BMP#1: Identify facilities/activities with potential for storm water runoff**
- **BMP#2: Implement Operations & Maintenance program that focuses on pollution prevention**
- **BMP#3: Train community employees & committee members on good housekeeping practices**



**Example MCM 6 – A rain garden was installed by the garden club during construction of the new Hulmeville Borough Hall to collect water from down spouts which helps to reduce flooding during rain events**



# Hulmeville Borough Facilities

- **Streets** 2.2 miles borough owned, 2.0 state owned
- **Storm water conveyances – open channel and close pipe**
- **Borough municipal building, parking lot, storage shed, playground and soccer field**
- **Pocket park parcel**
- **Old Borough Hall parcel (all impervious)**





# How Will Our Storm Water Program Benefit Our Community?



# Expected Benefits of Our Storm Water Program

- Reduced flood damage
- Enhanced opportunities for recreation
- Enhanced fishing
- Drinking water benefits
- Navigational benefits
- Reduced illness
- Enhanced aesthetic value



# How Can You Get Involved?

- Pass on information about the storm water program to other community residents
- Report any storm water issues to  
**Hulmeville Borough**  
**321 Main Street**  
**Hulmeville, PA 19047**  
**(215) 757-6531**
- [www.hulmeville-pa.gov](http://www.hulmeville-pa.gov)
- Visit the EPA's web-site: [www.epa.gov](http://www.epa.gov)



**Congratulations!**  
**You've completed**  
**This presentation!**

**Take a moment to answer**  
**the attached questionnaire**  
**and forward the completed**  
**form to Debbie Mahon**