

HULMEVILLE MUNICIPAL  
AUTHORITY

ACT 537 EDUCATIONAL MEETING

March 12, 2018

# WHAT IS ACT 537?

- Act 537 is the Pennsylvania Sewage Facilities Act.
- It requires planning and regulation of community and individual sewage systems.
- The Act became law in 1965 but was not implemented until 1968.
- The Hulmeville public sewage system was constructed in 1966.

# WHY WAS A 537 PLAN UPDATE REQUIRED?

- DEP and BCWSA had a dispute over the status of the Neshaminy Interceptor System capacity.
- As part of the settlement between BCWSA and PADEP regarding the Neshaminy Interceptor, every contributing municipality was required to update their Plan.
- The Borough Planning was over 50 years old.



# PURPOSE OF THE 537 PLAN UPDATE

- The Plan Update was to insure that adequate capacity in the Neshaminy Interceptor and downstream facilities was available and address the future needs of the municipalities.
- The Updated Plan not only projects flows from future connections, but includes a plan to address excessive wet weather flows through a Comprehensive Evaluation of the Municipal Sewer System.

# COMPREHENSIVE SEWER SYSTEM EVALUATION (CSSE)

- The 537 Plan Update required the inclusion of a Comprehensive Evaluation of the Municipal Sewer System.
- The CSSE was required because it was determined that all municipalities were contributing excessive peak flows during wet weather events.
- These peak flows need to be reduced to meet flow limits with the Philadelphia Water Department (PWD) and not cause a flow capacity exceedance within the Neshaminy Interceptor.

# THE OVERALL PLAN

- In March of 2013, representatives of Hulmeville were asked to attend a meeting held by BCWSA and PADEP, where a plan was presented for dealing with I&I removal and preventing sanitary sewer overflow events.
- All thirteen (13) municipalities that flow into the Neshaminy Interceptor are invested in fixing the problem.
- BCWSA is undertaking a large project to increase capacity in the Neshaminy Interceptor, while all 13 municipalities reduce the peak flows they contribute to the Neshaminy Interceptor and the PWD treatment plant.

# Proper Use of the Hulmeville Sanitary Sewer System

- Wastewater should enter the sanitary sewer system primarily from sinks, showers and toilets.
- Wastewater then flows through underground pipes and enters the Neshaminy Interceptor, which is a large pipeline owned by BCWSA.
- From there, the wastewater is sent to the City of Philadelphia's treatment plant.

# Stormwater (SW) or Groundwater (GW) Flows are Prohibited from the Sanitary Sewer System

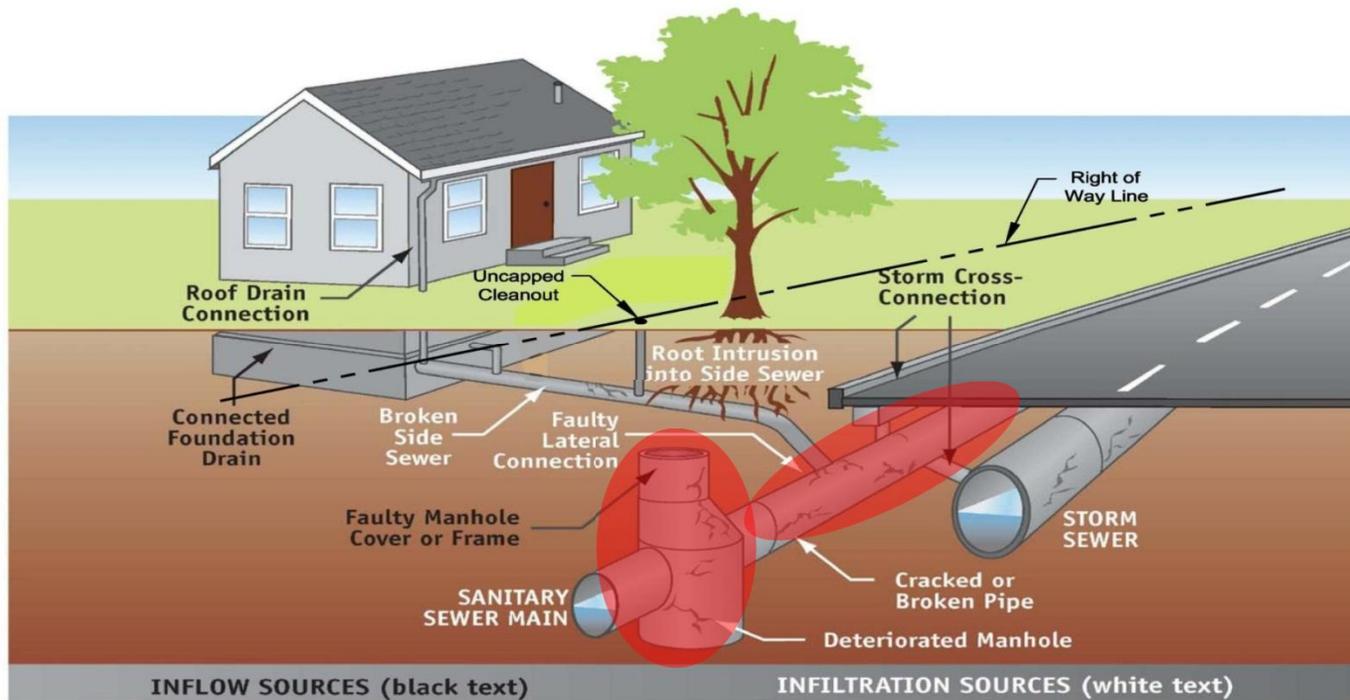
- Sewer pipe sizes were not designed for this flow and therefore can cause backups and/or overflows.
- These flows can exceed treatment facility capacity causing inadequately treated wastewater to be discharged to Waters of the Commonwealth.

*When stormwater or groundwater enters the sanitary sewer system, it is referred to as Inflow and Infiltration.*

# Inflow and Infiltration (I/I)

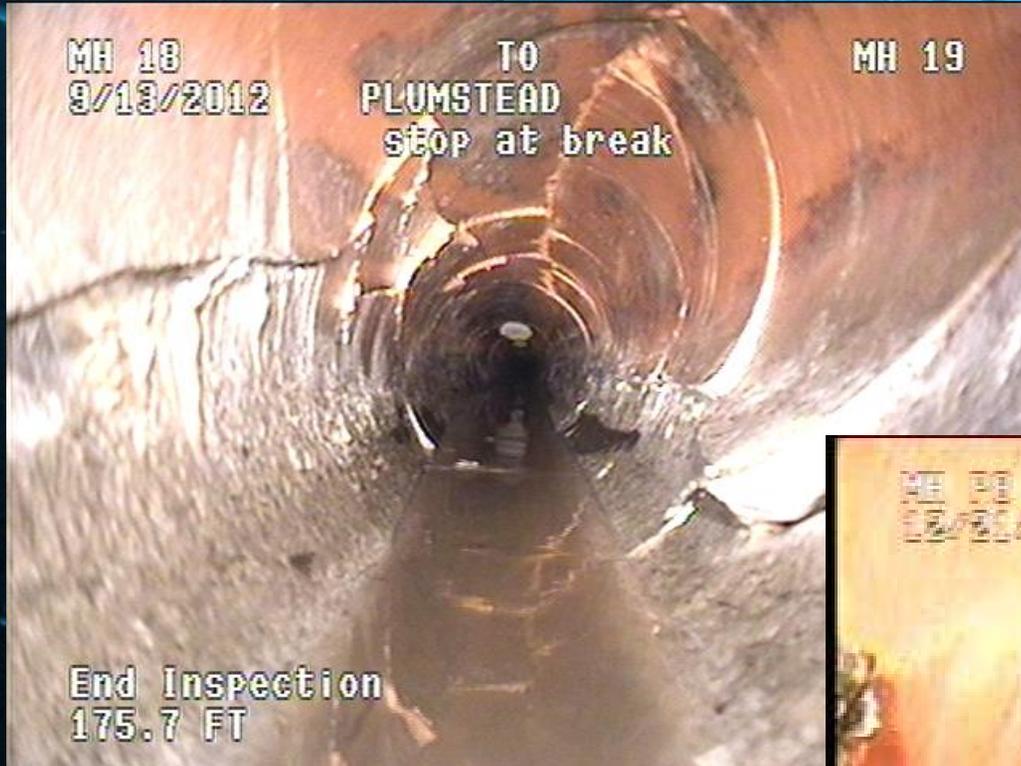
- Inflow is *stormwater runoff* that enters the sanitary sewer system through *inappropriate openings* in the sanitary sewer facilities at or *near the ground surface*.
- Infiltration is *groundwater* that enters the sanitary sewer system through *inappropriate openings* in the sanitary system, *below the ground surface*.

# Inflow and Infiltration Sources



I&I increases during wet weather events such as heavy rains or large snow melts

# Examples of Sewer Main Defects seen by Video Inspections



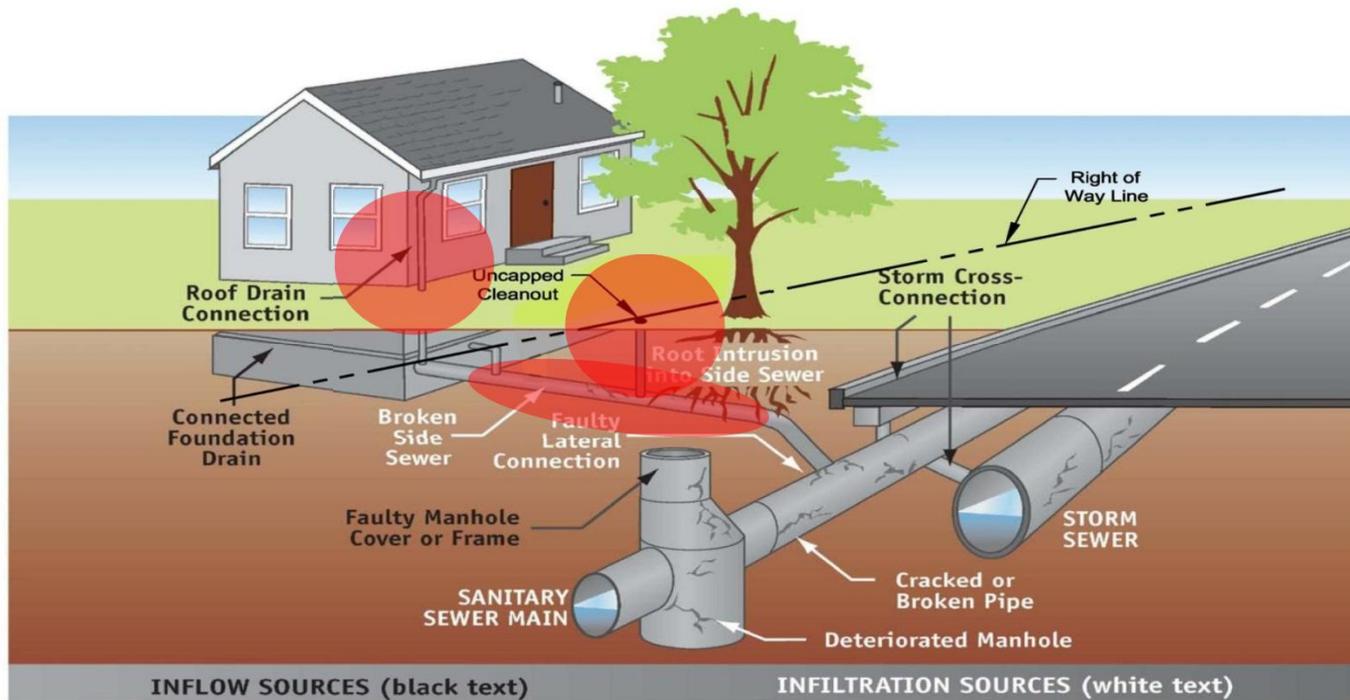
# Example of Manhole Defects



# Work Recently Completed by Hulmeville Municipal Authority

- Evaluated flow meter information to determine which sewer areas to focus immediate attention.
- Video inspected the entire Borough system, leading to five sewer repairs completed in 2017.
- Completed the first phase of manhole inspections, and quotations to make these repairs are currently being obtained.

# Inflow and Infiltration (I&I) Sources

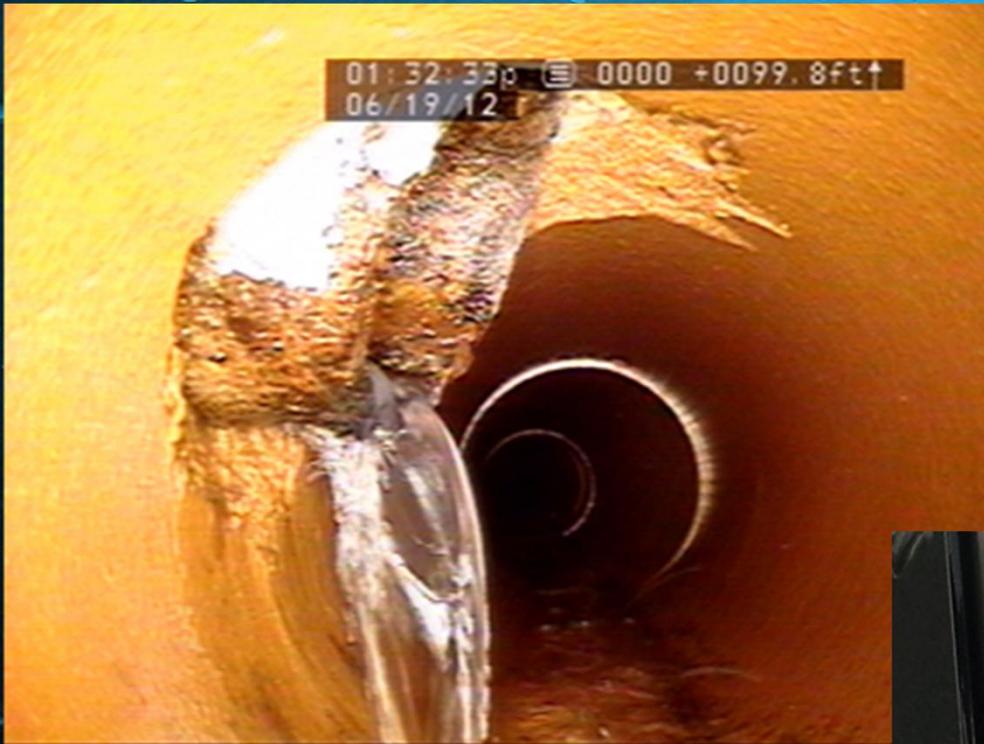


I&I increases during wet weather events such as heavy rains or large snow melts

# Private Connection(Lateral) Sources

- Underground pipes between houses and sewer mains in the roads (aka laterals) with cracks or offset joints, allowing groundwater to enter.
- Cleanouts along the laterals with slotted lids, damaged lids, or no lids at all, allowing surface water to enter.
- Roof drains connected to the lateral pipe or discharging in the area of an open cleanout.
- Sump pumps improperly connected to the lateral pipe or discharging to a cleanout.

# Potential Lateral Defects



Clear steady flow entering the sanitary sewer from a private lateral connection.

Lateral Inspection Crew ?  
(How did they get in?)



# Potential Lateral Defects

## Examples of Lateral Defects

### Missing & Grated Cleanout Lids

- Cleanout #1, no cap in parking lot, allowing inflow.
- Cleanout #2, grated cap in parking lot, allowing inflow.



# Potential Lateral Defects

## Examples of Lateral Defects

### Missing Cleanout Lid

- Cleanout without lid in parking lot allowing inflow
- Inspected 9/5/2012



## Examples of Lateral Defects

### Cleanout Riser Joint Defect

- Inflow noted at open/separated joint within riser
- Inspected 7/11/2012



# Potential Lateral Defects

## Examples of Lateral Defects

### Cleanout Riser & Lid Defects

- Cleanout Riser loose/broken at grade, allowing inflow
- Cleanout missing lid at grade allowing inflow
- Inspected 8/13/2012



## Examples of Lateral Defects

### Offset Cleanout Riser Joint

- Offset joint within cleanout riser allowing inflow.
- Inspected 12/10/2012.



Just 1" of water over an open cleanout can introduce up to 50,000 gpd of flow into the sanitary sewer system, which is equal to the average flow from 200 residential homes.

Hulmeville Borough has about 375 households, meaning one open cleanout during a wet weather event, could equal more than 50% of the typical sewage flow from the entire Borough.

# Sump Pumps

- A single sump pump connected to the sanitary sewer system can contribute up to 20 gpm or nearly 30,000 gpd.
- This is the average flow from over 100 residential homes.



# Long Term Plan

## Voluntary Lateral Inspection Program

- Perform voluntary lateral, sump pump and downspout inspections on private properties.
- The Borough will consider additional municipal ordinances and measures to reduce I&I (inflow and infiltration).
- Continue existing maintenance/repair of laterals known to have defects and address illegal sump pump connections.

# Long Term Plan

## Sewer System Evaluation, Maintenance and Repair

- Continue to evaluate flow meter data to isolate the problem areas and assess repairs as they occur.
- Perform video inspection of entire sanitary sewer system every five years (next will be done in 2018+/-).
- Continue manhole inspection and repair program.
- Continue to work with BCWSA and the PADEP to minimize environmental concerns related to the existing sanitary sewer system in the Borough.

# Best Practices = Savings

- Household sewer discharge correlates with sanitary sewer system discharge.
- Therefore, the more water that goes into the sanitary sewer system, the greater the overall cost is for the residents of Hulmeville.
- Using best practices leads to using less water, which results in lower water & sewer costs to the Borough and lower water & sewer bills for residents.
- Hulmeville Borough owns and operates their own system, which translates into more efficient stewardship and lower rates.
- Borough residents volunteer their time to be good stewards of the Authority.

# BCWSA Lateral Program

- With BCWSA's SafeGuard™ Maintenance Program, homeowners can purchase lateral pipe insurance for a monthly fee.
- This can protect you against costly repairs, should your lateral pipe fail.
- You can visit [www.bcwsa.net/safeguard-program](http://www.bcwsa.net/safeguard-program) for more information or call BCWSA.

The background is a dark blue gradient with numerous water droplets of various sizes scattered across it, creating a textured, wet surface effect.

Questions?

Comments?

*Thank You*