

**THE MUNICIPAL AUTHORITY OF
THE TOWNSHIP OF WASHINGTON**
Fayette County, Pennsylvania

**LYNNWOOD & WASHINGTON HEIGHTS
SANITARY SEWER SYSTEMS**

CORRECTIVE ACTION PLAN

FEBRUARY 2019



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Fayette County, Pennsylvania

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A. Introduction

The Municipal Authority of the Township of Washington (Authority) began construction of a sanitary sewer collection system within the developed portions of the Township of Washington, Fayette County in 2009. Construction was completed in 2012, and sewer system users began to connect to the system shortly thereafter.

During significant rainfall events, the Authority has experienced hydraulic overload conditions within its Lynnwood and Washington Heights sewage collection systems, resulting in basement flooding and sewage backups in those homes adjacent to the Lynnwood and Washington Heights sewage pump stations. The basement flooding has primarily occurred in the homes that did not have the required backflow valves installed at the time of connection to the sewage system. Several homes that did have the required backflow valves were not able to use the sewer facilities during the overload events. Some homes that reported flooding were later found to have flooding from surface water, not sewage.

In an effort to minimize the basement flooding, the Authority increased the impeller size at the Washington Heights pump station in Year 2016, which increased the pumping rate from 350 gpm to 500 gpm. However, sewage backups have continued to occur during heavy rainfall events.

During Years 2015 and 2016, the Authority hired Miller Pipetech to locate sources of infiltration and inflow (I/I) within the collection system. Miller Pipetech performed dye testing at 86 properties within the Lynnwood and Washington Heights collection system. Property owners not in compliance were notified of violations that were discovered during these inspections, and the sources of I/I were removed. Additionally, Miller Pipetech inspected sewer mains and manholes within this area. Since these inspections, the Authority has installed a number of manhole inserts in those manholes that were identified as possible sources of I/I.

During Year 2018, the Authority hired State Pipe Services, Inc. to dye test another 75 homes in the Lynnwood and Washington Heights areas. This investigation found twelve (12) sources of I/I. The property owners have been notified, and these sources have been removed.

In addition to these efforts to locate sources of I/I, the Authority staff continues to investigate the entire collection system. These efforts include inspecting manholes, flow monitoring, dye testing, inspecting laterals for broken vent caps, etc. As a result of these efforts, the Authority has reduced some of the I/I volume entering the system. However, properties without backflow valves still experience basement flooding during heavy rain events. This Corrective Action Plan will set forth the actions the Authority intends to take to reduce the hydraulic overload condition.

B. Description of Collection System

The Lynnwood and Washington Heights sewer systems collect sewage from the Lynnwood and Washington Heights neighborhoods. The Lynnwood system collects and conveys wastewater from 170 customers (primarily residential) within an approximately 0.17 square mile drainage area. The wastewater flows by gravity to the Lynnwood Pump Station, which pumps the wastewater to the Washington Heights sub-basin. The Lynnwood Pump Station has a pumping capacity of 150 gallons per minute. The Washington Heights system collects and conveys wastewater from 300 customers (primarily residential) within a 0.29 square mile drainage area, in addition to the Lynnwood drainage basin. The Washington Heights Pump Station has a pumping capacity of 500 gallons per minute.

As previously discussed, the original Lynnwood and Washington Heights collection systems were constructed in 2012. The Lynnwood system consists of 725 linear feet of 6-inch and 15,625 linear feet of 8-inch diameter pipe, and the Washington Heights system consists of 5,850 linear feet of 6-inch diameter pipe and 23,850 linear feet of 8-inch diameter pipe. The entire collection system was constructed of SDR-35 PVC gravity sewer pipe with integral rubber gaskets. The collection system also includes some force mains; however, no residents in these two sub-basins are connected to a force main or any other pressure sewer.

C. Description of Current Problems

The hydraulic overload conditions to date have resulted in basement flooding with sewage backups in the Amelia / Ada / Alice / Louise Streets area and the Sherwood Street / Washington Road intersection and on Center Street of the Washington Heights collection system. During significant rain events since the construction of the sewage collection system in 2012, basement flooding has occurred.

Enclosed with this Plan is Bankson Engineers, Inc. Drawing Number 1-518-23-1, which shows both sub-basins.

D. Plan and Schedule to Eliminate the Hydraulic Overload

1. Flow Monitoring

The Authority purchased three (3) portable flow meters to install within the sewage collection system to measure the amount of wet weather flows at various locations. This flow monitoring will be used to pinpoint the areas of high wet weather flows so that remediation efforts can be concentrated in these areas. To date, the Authority has spent approximately \$22,000 on flow monitoring.

2. Dye Testing / Smoke Testing Lateral Inspections

In June 2015, the Authority entered into a Contract with Miller Pipetech to perform dye and smoke testing system wide. The Contract cost was approximately \$49,000. The scope of work included dye testing of approximately 78 private property drains. A total of two (2) violations were found, both of which have been corrected and have passed a follow-up inspection.

The Authority entered into a Contract with State Pipe Services of Cranberry, PA, in 2018 to perform dye testing of select homes within the Washington Heights and Lynnwood drainage basins. The scope of work included dye testing of seventy-five (75) private property drains. The total cost was \$11,025. Twelve (12) violations were found, which consisted of downspouts, sump pumps, driveway drains, and stairwell drains. There were also a number of broken vent caps and inspection ports found.

The Authority's staff continues to perform dye testing and sewer system inspections. These efforts have found forty-seven (47) inflow violations, consisting of downspouts, sump pumps, driveway drains, stairwell drains and broken vent caps/inspection ports. The Authority will continue these efforts until every connection has been inspected.

3. Correction of Problems Identified by Smoke and Dye Testing

The Authority's Rules and Regulations, as well as Washington Township's Ordinance Number O-01-09-Revised, specifically state that ground and surface water are prohibited from connection to the sanitary sewer. This includes storm water, foundation drain water and spring water. The owner of any property who is found to have any unlawful connections to the collection system as a result of this testing shall be notified of the violation and be required to correct said violation within thirty calendar days from the Notice of Violation.

Enclosed with this Plan is the portion of the Authority's Rules and Regulations that prohibit these connections as well as Washington Township's Ordinance Number O-01-09-Revised.

4. Sewer Repairs

The Authority will review the findings of the dye testing, smoke testing and CCTV and manhole inspection. If this investigation identifies any sewers that require repair to eliminate or reduce the amount of I/I entering the collection system, the Authority will take the appropriate measures to complete the needed repairs. This work may include cost estimates, finance planning, design award bids and construction.

5. Public Information/Education

The Authority has sent several flyers to its sewage customers about the infiltration/inflow problems within its sewage collection system. In addition, the Authority maintains information in its lobby, as well as on its website about the infiltration/inflow. An example of one of the flyers that have been sent to the customers is included herein.

6. Evaluate Success of Phase I Work

Following completion of the work identified in this Corrective Action Plan, the Authority will compile the collected flow data and submit a report on the effectiveness of the Phase I work and, if necessary, identify plans for construction of additional facilities to eliminate all hydraulic overloads.

E. Assurance of Adequate Ordinances

As identified earlier in this Plan, the Authority and Washington Township have adequate ordinances that prohibit the connection of storm water to the sanitary sewer system. Additionally, the Authority's Solicitor has drafted an Ordinance for Authority review to be adopted by the Municipalities that will require dye testing and repair to service laterals prior to completing the sale of any building.

F. Short Term Measures to Eliminate Basement Flooding

The Authority's connection detail required the installation of backflow preventers on the laterals. The Authority constantly recommends to those home owners who do not have backflow preventers to have a backflow preventer installed to eliminate basement flooding.

G. Tap Control Plan

The Pennsylvania Department of Environmental Protection (DEP), in a letter dated November 27, 2018, required the Authority to restrict new connections to the sewer system tributary to the overloaded sewerage facilities to those connections fitting the exceptions described in 25 Pa. Code §§ 94.55, 94.56 and 94.57 until the requested plan and schedule is approved by DEP. These exceptions consist of building permits issued prior to ban, replacement of a discharge (a source of discharge forever eliminated as a result of demolition, destruction, accident, act of God or act of government), or connections which are necessary to eliminate a public health hazard, or which are necessary for the operation of a facility of public need.

Following approval of this plan and schedule, the Authority will submit an Annual Tap Control Plan to the DEP by January 31 each year until such time as the Corrective Action Plan is terminated.

H. Financial Capability and Commitment

To date, the Authority has expended over \$150,000 to mitigate the hydraulic overload condition in not only the Washington Heights and Lynnwood sub-basins but system-wide. Furthermore, the Authority's current rates are adequate to cover any minor repairs that may be required as a result of this Corrective Action Plan's investigation.

Corrective Action Plan Schedule and Progress Report

Municipal Authority of Washington Township

Reporting Period

From: _____ To: _____

Washington Township

Fayette County

Task Description	Proposed Start Date	Actual Start Date	Required Completion Date	Actual Completion Date	% of Task Complete	Comments
1. Conduct subsystem flow monitoring	6/1/2018	Jun-18	Jun-20		5	
2. Conduct dye testing and smoke testing	6/1/2015	Jun-15	Jun-21		14	
3. Correct problems identified by smoke and dye testing	7/1/2015	Jul-15	Jul-21		ongoing	
4. Conduct manholes inspections	6/1/2015	Jun-15	Dec-21		15	
5. Repair defective manholes	7/1/2015	Jul-15	Jul-22		ongoing	
6. Cleaning and TV inspection of the sewers	2/20/2019	Feb-19	Dec-22		5	
7. Repair sewer defects	3/20/2019		Sep-23		0	
8. Post-rehabilitation flow monitoring	2/20/2022		Oct-23		0	
9. Evaluate success of Phase 1 work	2/20/2023		Feb-24		0	

Tap Allocation for this year _____
 Taps utilized this reporting period _____

Based on the above information, are you in compliance with the approved schedule? Yes _____ No _____

Engineer _____
 Signature / Date _____

Municipal Official _____
 Signature / Date _____