**The Sanitary Sewer System**

**What They Mean to You and What the Future Brings**

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Do you know what a Sanitary Sewer is? Do you get your monthly sewer bill and wonder what am I paying for? In this article we’ll explore Basic Sewer Knowledge (what a sewer systems is), wet weather issues, and system operation & maintenance.

So let’s get started with an overview of Basic Sewer Knowledge and Wet Weather Issues.

Basic Sewer Knowledge

Your house or building has a private sewer lateral that is connected from your plumbing to the Borough’s Sanitary Sewer Collection System. The collection system is a series of pipes that connect all the individual private laterals together. The collection system could be on any side of your structure, in the street, or on the side or back of your property. The collection system then connects into an interceptor sewer, or a trunk sewer which then flows to a Wastewater Treatment Plant. The Wastewater Treatment Plant removes pollutants from the sewage and discharges the treated water to the stream and rivers.

The Borough has three sewersheds, Pleasant Hills, Clairton, and West Elizabeth. Depending on where you live, determines where your sewer drains to.

The Borough of Jefferson Hills owns and operates a sanitary sewer system which includes 63 miles of sanitary sewers for the customers and has quietly maintained the system approximately over 40 years and has not raised the rates since September 2004. In the future, the Borough, along with adjoining municipalities, as ordered by the Department of Environmental Protection (DEP) will be involved in multiple sewer projects costing millions of dollars due to overflows discharges to the environment and changing regulations. Discharges to the environment (overflows) can occur when ground water and surface runoff enter the sewage system and cause flows to exceed the capacity of the pipes and structures designed to convey sanitary sewage flows.

Sewersheds

In the late 1970’s the Borough constructed approximately 63 miles of sewers, the necessary structures needed and partnered with adjoining municipalities to construct wastewater treatment plants for the 3 separate sewer sheds.

Pleasant Hills Sewershed

This area is sometimes referred to as the Lick Run Sewershed and incorporates the north western tip of Jefferson Hills. In years past, the Borough constructed sewers and a pump station to drain the majority of this sewershed to the Clairton Municipal Authority Wastewater Treatment Plant. Today 27 Jefferson Hills customers still drain to Pleasant Hills Wastewater Treatment Plant. Currently the Pleasant Hills Sewershed is under a Consent Order. The Pleasant Hills Authority as mandated by DEP will be spending millions of dollars to upgrade their plant. Based on the small number of customers, the Borough will have very little involvement in the financing of the project.

Clairton Sewershed

This sewershed is also known as the Peters Creek Sewershed and encompasses a majority of the Borough north of Ridge Road. All sewage is collected and transferred via the Peters Creek Interceptor which runs parallel to Peters Creek for treatment at the Clairton Municipal Authority Wastewater Treatment Plant. (CMA) There are 3,253 Jefferson Hills customers that are collected and treated in this sewershed. CMA is in the process of expanding and upgrading the Wastewater Treatment Plant under a $40 million project, mandated by DEP of which Jefferson Hills is responsible for approximately 1/3 of the cost. The Borough’s portion of this project is estimated to cost $13.3 million. Jefferson Hills will also be installing sewers to eliminate failing on-lot systems on Coal Valley Road as mandated from DEP & Allegheny County Health Department. The estimated cost for this project is $4 million dollars.

West Elizabeth Sewershed

The West Elizabeth Sewershed covers the area south of Ridge Road including the Walton Road and Route 837 corridors. There are currently 680 Jefferson Hills customers in this sewershed. Due to wet weather issues, Jefferson Hills as mandated by DEP will be installing a new pump station and equalization tank on Rt. 837. In addition, the West Elizabeth Sanitary Authority (WESA) as mandated by DEP will be constructing a new and larger Wastewater Treatment Plant to service Jefferson Hills, Union Township and West Elizabeth Borough customers at a cost of approximately $5 million of which Jefferson Hills is responsible for approximately 76% of the cost. The estimated cost for this project is $3.8 million.

Operation & Maintenance

The Borough has worked diligently over the years on maintenance of the sewers. An average of $600,000 - $700,000 has been spent on the sanitary sewers annually. The Borough performs Closed Circuit Televising (CCTV) and reviews the insides of the pipes to see what repairs need completed. They have contractors work on the sewers and repair them. The Borough partners with South Hills Area Council of Government (SHACOG) on the general bidding processes which saves the Borough money. Although the Borough spends a significant amount of money on operation and maintenance of the sewer lines, the overall effect actually provides several benefits to the community. The first and foremost benefit is that defects and potential clogs are caught and repaired before they become a backup or overflow issue. In addition, catching these issues before they become a major issue actually costs less in the long run as repairs are cheaper to complete when they are not an emergency as they are if they become an emergency call out issue. Also, a large portion of the Borough collection system is charged for treatment of all extraneous flows entering the system. A good operation and maintenance plan keeps these excess flows under control and ultimately saves on treatment costs. Since 2010, the Borough has saved approximately $1 Million in treatment fees due to flow reductions resulting from improved operation and maintenance of the system.

**So what does this mean to you?** Since the Borough of Jefferson Hills has constructed the sewers they have worked hard to keep the costs down for the residents and businesses in the area. Over the years they have maintained the sewers but at this point they are 40 years old. Like anything with age comes upgrades and changes. Just like the Wastewater Treatment Plants, the sanitary sewers are in the same situation and the Department of Environmental Protection (DEP) has ordered the Borough to ensure that the sewers are in good shape and there are no overflows. The Borough has always strived to reduce costs by:

* Participating in joint sewer projects with SHACOG and adjoining municipalities to spread costs and achieve economies of scale.
* Borough Public Works department performing inspections instead of consultants.
* Performing annual maintenance, CCTV, and repairs.
* Requiring the correct testing during new development.
* Inspecting the manholes which the Borough then repairs any issues. This helps prevent excessive water from getting into the system.

Despite these cost savings efforts the large scale, DEP mandated projects mentioned earlier to modernize the sanitary sewer now place the Borough in the position of needing to increase sewer rates. They are investigating what is needed and how we can accomplish it. Look for future articles that will provide additional details.

The following are a few definitions to assist you as you begin to learn more about the sanitary sewers.

**Manhole** - An access structure that is built over a sewer of any kind for maintenance and repair.

**CCTV** – (Closed Circuit Televising) a television system in which a camera is put into a sewer segment and an image/video is created, showing the status of the sewers and the need for repairs.

**Collector Sewer** – A municipally owned sewer line that collects the flows from many laterals and carries them to an interceptor or trunk sewer.

**Trunk Sewer** – Very large sewer line that collects the flows from many collector lines and carries them to treatment facilities (does have lateral sewer connections).

**Interceptor Sewer** – Very large sewer line that collects the flows from many collector and trunk

sewers and carries them to treatment points (does not have lateral sewer connections).

**Lateral** – A smaller diameter sewer line that carries sewage from the structure to the public sewer lines. Laterals are typically owned and maintained by the individual property owners.

**Wastewater Treatment Plant** - A facility built to treat sanitary sewage thru various processes to allow the water to be discharged to rivers.

**Sewershed** – All contributing sewers flowing to a specific point (i.e. POC, interconnection, meter).

**Overflow**– Sewer lines which are designated exclusively for sanitary sewage can become overloaded with inflow and infiltration during rain events. When sewers are overloaded raw sewage exits the system through manholes, floor drains, and permitted constructed overflow structures along the rivers.

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