

## City Council meeting, Wednesday, April 15, 2020

**Bill 21 Revenue Note and Refunding** (Office of Compliance) is for a revenue note which will fund \$4.1 million in AO project remediation costs over the next 3 years. The debt will be borne by the City sewer Rate Payers and the Signatories. The revenue note will also refinance the previous 2016 series Administrative Order note.

**1) What are the savings as a result of the refinancing?**

Refinancing the 2016 note will save the ratepayers about \$175,000 over the life of the loan. The 2016 Note had a variable rate up to 5%. Refinancing has fixed the rate to 3.326%.

**2) What are the different rates?**

It is a single, fixed rate of 3.326%.

**3) How long is the note for?**

14 years.

**4) How much is the cost of issuance?**

Approximately \$92,500

**5) What is the current state of the Administrative Order?**

Background:

In 2007, the Environmental Protection Agency (EPA) issued an Administrative Order (AO) to the City of Allentown (City) to eliminate use of the Kline's Island Wastewater Treatment Plant's (KIWWTP's) emergency outfall 003, which EPA considered to be a sanitary sewer overflow (SSO) because it is physically located upstream of the KIWWTP's headworks' facilities.

In 2009, the EPA issued an AO to the City and its Signatories which convey flows directly or indirectly to the KIWWTP to address collection system SSOs. Under the 2009 AO, the City and the Signatories were to eliminate the SSOs and demonstrate continual progress toward this end goal.

Progress related to these actions have been regularly reported to both agencies since 2010, both in written annual/semi-annual progress reports and in regular meetings. The City and Signatories have offered several independent strategies and plans to EPA and the Pennsylvania Department of Environmental Protection (PaDEP), several of which were received positively by the regulators.

In 2018, consistent with the 2009 AO's requirement for cooperative management of flows, EPA requested a Regional Flow Management Strategy (RFMS) to be developed in collaboration among the Signatories that guides the development and implementation of each Signatory's individual sewer Inflow and infiltration (I/I) reduction plan.

The RFMS met EPA's requirements, "Based on the regional flow management strategy and information provided in the semi-annual reports and meetings, EPA hereby finds that all of the Respondents to the Administrative Orders CWA-03-2009-0313DN and CWA-03-2007-0332DN have completed the requirements." (EPA letter dated 3/19/2019.) The PaDEP has assumed regulatory oversight of the RFMS.

**6) What are we now required to do?**

In order to completely disengage from the AOs, the City will complete the projects as listed in the RFMS:

**Source Reduction Projects-** The City is implementing I&I source reduction measures this summer that were identified previously within areas of the City's collection system. Currently the source reduction projects are on a 5-year plan which we may combine into a shorter term. These projects primarily involve the lining of sewer pipe to remove infiltration of ground water. Also included is heavy or specialty cleaning grouting, lining point repair, excavated point repair, lining entire pipe segment, and complete pipe replacement. The estimated cost is \$3M.

**Flow Characterization Study (FCS)-** The FCS will be conducted in 2021 and includes flow metering and rainfall monitoring data collection in all municipalities' sewer systems. Approximately 120 flow meters will be installed throughout the regional collection system. These flow meters will be a combination of both temporary (via a flow metering contract) and existing signatory sewer billing meters (owned by the municipalities). The data collected will be used for both system characterization and future modeling purposes. The basic use of the FCS will be used to define base flows and rain-derived inflow and infiltration impacts. Also, the data collected from the FCS will be utilized to develop and calibrate the Kline's Island Sewer System (KISS) model. The model which includes anticipated growth and development is used to evaluate the impacts of dry and wet weather flow within the various primary conveyance components. A system alternatives study, as part of Act 537 planning will be conducted from the model's findings. Study will provide alternative projects to be evaluated for anticipated improvements required regarding the collection system and KIWWTP.

**Act 537 Planning:** Municipalities are required to develop and implement comprehensive official plans that provide for the resolution of existing sewage disposal problems, for the future sewage disposal needs of new land development.

**7) What has the City done since 2008?**

In working toward fulfilling the requirements of the AOs, over the last decade the City has undertaken and completed the following activities related to identifying and eliminating sources of infiltration and inflow:

**ADS Environmental Services (ADS)-** was retained in 2008 to perform a City-wide flow metering program to gain an understanding of the locations and magnitude of Infiltration and Inflow (I/I) entering the sewer collection system. The Flow Monitoring program conducted by ADS Environmental Services resulted in 90 days of flow data at 169 locations. The monitoring period began on 31 July and ended 31 October 2008.

In 2009, ADS performed targeted flow monitoring on 10 of the original basins from the 2008 study to help locate I&I sources and magnitude in smaller geographic areas. The targeted metering was conducted with 18 ADS flow meters, deployed between April and June of 2009.

**Development of Hydraulic Model-** Using the data from the flow monitoring studies in 2008 and 2009, Whitman Requardt and Associates (WR&A) developed and calibrated a hydraulic model of the sewer collection system within the City. This model was the

basis of the System Assessment and Phase 1 Corrective Action Plan, developed in 2013, which outlined alternatives for reduction and elimination of SSOs. One of the improvements identified in the Phase 1 Corrective Action Plan was the removal of I&I entering the sewer collection system. Included in the Phase 1 Corrective Action Plan was an I&I removal analysis pin pointing areas where the greatest I&I is present within the City and where removal of excess flows would be most beneficial to reducing and eliminated SSOs.

Based on the flow monitoring and Phase 1 Corrective Action Plan recommendations, the top twenty basins with approximately 8 percent of the total linear footage of sewers within the City, were identified for having the highest potential impact on SSOs due to excessive I&I. The modeling results from WR&A indicated that flows from these twenty basins have an above-average impact on SSOs system-wide.

**Sewer System Evaluation Survey (SSES)-** In 2014, the Lehigh County Authority (LCA) contracted with Video Pipe Services, Inc. to perform a SSES, consisting of CCTV investigations of the twenty basins in the City identified previously as having the highest potential impacts on SSOs. The investigations included CCTV of the pipe segments in the basins, as well as manhole inspections. A ranking system based on the National Association of Sewer Service Companies (NASSCO) standards was used to quickly determine which pipe segments were in most need of rehabilitation.

**Repairs and Maintenance-** During the CCTV inspections by Video Pipe Services, Inc., LCA and the City proactively addressed severe defects when they were encountered in the field. As a result, some defects were repaired shortly after completing the CCTV investigations. In addition to point repairs, heavy cleaning was performed for some pipelines. Smoke testing was also performed in selected locations.

Over the past decade, the City has also undertaken additional sewer inspection and rehabilitation work throughout the collection system. The sewer inspection and rehabilitation work has consisted of the following activities:

- Detailed inspections of approximately 1,800 Manholes
- Installation of manhole inserts in all 7,199 City-owned manholes
- Repairs to and lining of over 400 manholes
- CCTV Inspections of over 400,000 linear feet of Sanitary Sewers
- A total of 194 Sewer repairs by excavation and trenchless methods
- CCTV Inspection of storm sewers – no cross connections have been found
- Building and Downspout Inspections and removal of illegal connections
- Ongoing trestle and bridge clearing and root control.