

MSANK Wet Weather Management Program

September 2012 Newsletter

Flow Monitoring Program

MSANK and the communities are currently conducting an extensive study of the sewage flows throughout the entire collection system. The study period began in September 2011 and is anticipated to conclude in September 2012. Over 100 flow meters have been installed at strategically located sewer mains in each of the surrounding communities, which include the City of New Kensington, the City of Arnold, the City of Lower Burrell, and Plum Borough. The data collected will lead to a better understanding of how much flow is contributed from neighborhoods within each of the communities. Eventually, the flow data collected will be used to develop a comprehensive hydrologic and hydraulic computer model of the entire sewage system.

Pollutant Monitoring Program

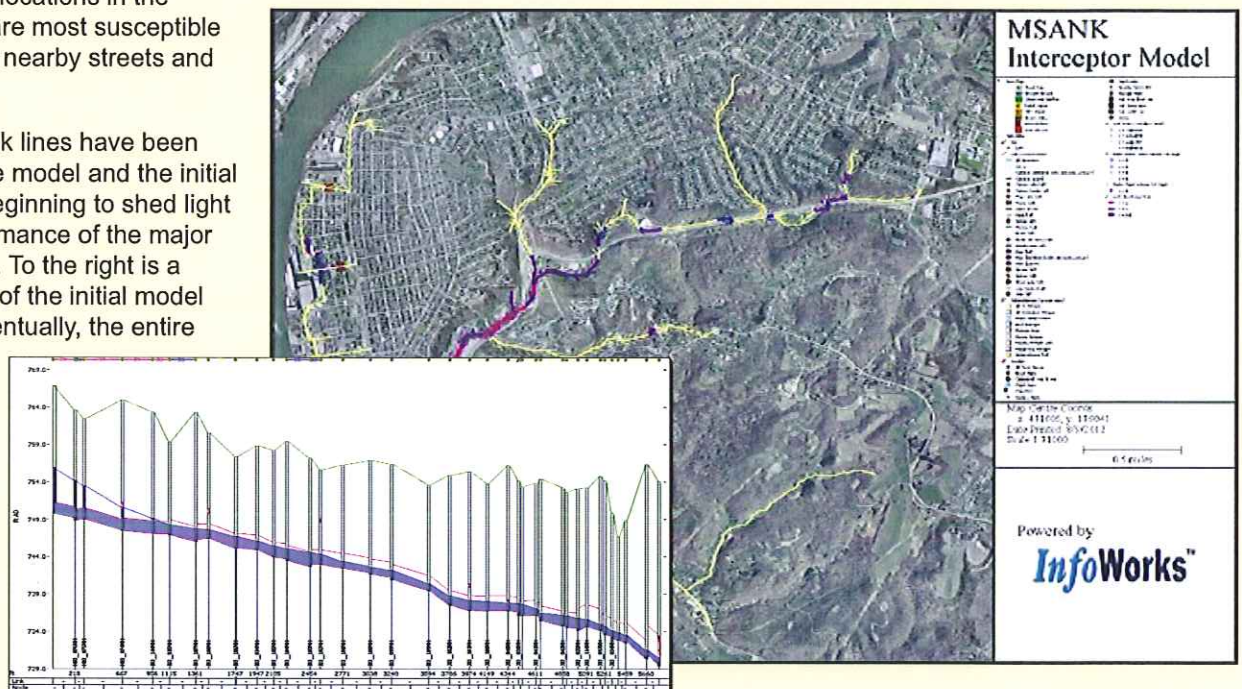
In addition to the flow study, water samples are being collected from the sewage overflow outfalls along the Allegheny River. The samples are then sent to a local laboratory for analysis in order to determine how many pollutants are in the sewage that is discharged during wet weather events into the Allegheny River. This data will be used in conjunction with the hydrologic and hydraulic model to assess the water quality impacts the system overflows are having on the Allegheny River.



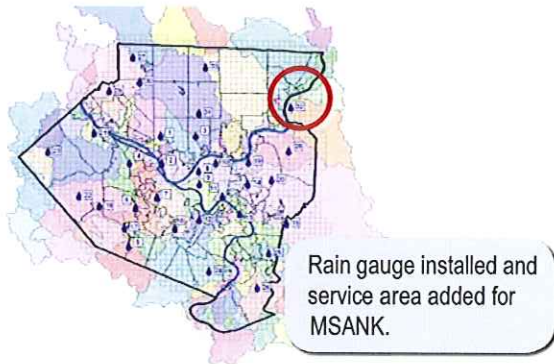
Hydrologic and Hydraulic Model Development

MSANK and the communities are in the beginning phases in the development of a hydrologic and hydraulic model. Quite simply, a hydrologic and hydraulic computer model is a visual representation of the sewer system in action. It can simulate and visually depict the travel of sewage from one's house all the way to the MSANK wastewater treatment plant. It is considered one of the most critical tools for determining how, when, and where sewage traverses throughout the 163 miles of the sewage system. Additionally, the model is able to determine the quality of combined sewer overflow discharged to the river and locations in the system that are most susceptible to flooding of nearby streets and streams.

All major trunk lines have been created in the model and the initial results are beginning to shed light on the performance of the major trunk sewers. To the right is a "screenshot" of the initial model in action. Eventually, the entire system will be added for enhanced simulations.



3 Rivers Wet Weather Radar Rainfall

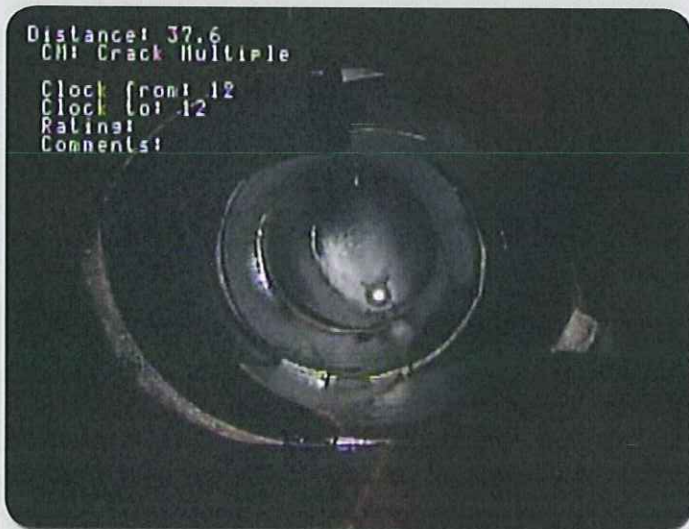


In order to simulate the response of the sewer system to rainfall in the hydrologic and hydraulic model, it is important to have the most accurate and reliable rainfall data possible. As part of the flow study, MSANK is collaborating with neighboring Allegheny County and 3 Rivers Wet Weather (3RWW) to expand their radar rainfall network into Westmoreland County and the MSANK region. To help get the best signal and data possible 3RWW installed one of their weather stations on top of the Arnold Middle School. This crucial data will “drive” the hydrologic and hydraulic model during wet weather events when flooding is most likely to occur.

Interceptor Rehabilitation Projects

Update on the Fall 2011 Interceptor Rehabilitation Project

As mentioned in our July 2011 edition of the MSANK Newsletter, MSANK was in the process of rehabilitating 2,200 feet of the Pucketa Creek Sewage Interceptor along Stevenson Boulevard in the City of New Kensington. This project consisted of cured-in-place lining of 1,900 feet of pipe and excavating and replacing 350 feet of pipe. This project was completed with much success and the interceptor has shown marked improvement both in terms of structural integrity and reducing unwanted stream infiltration into the system. Take a look at the before and after pictures of a pipe section below from the pipe camera. Note the major cracks which are indicative of potential collapse of this critical sewer main. The metallic “ball” in front of the camera is a jetter, that is used to clear the way for the camera.



Before



After

Upcoming Interceptor Rehabilitation Project

Due to the success of the 2011 project, MSANK has targeted another segment along the Pucketa Creek Interceptor for rehabilitation purposes. This segment is also located on Stevenson Boulevard in the City of New Kensington. 192 linear feet of sewer interceptor near Avis Autoparts will be excavated and replaced beginning early this fall. This line will bring the total Pucketa Creek Interceptor rehabilitation efforts to almost 2500 feet in just one year.