



Township of Mendham

INCORPORATED MARCH 29, 1749

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September 17, 2020

To: Customers of the Mendham Township Sewer East Utility

From: Bob Casey, Interim Township Administrator

The purpose of this letter is to report on an investigation of the existing sewer system and the excess sewage flows being experienced, the financial impact of these excess flows, and actions required by the sewer system customers to reduce these costs

SUMMARY: The non-sewage flows entering the sanitary sewer system are exceeding the capacity of the sewer system requiring transporting of these excess flows to alternate sewer systems. The cost of handling these excess flows results in a surcharge on each user's quarterly sewer bill that can only be avoided by the Township and existing homeowners preventing future non sewage flows into the sanitary sewer system.

BACKGROUND: The Sewer East Sanitation Utility serves approximately 104 customers in Drakewick (78 homes) and two small adjacent townhouse developments (26 homes). This system was originally built in the late 1980's and the Township assumed responsibility in 1996. The sewer system consists of collection mains in the affected streets, a sewer pump station to send the sewage to the treatment plant, a sewer treatment plant, and two sewer disposal fields. The sewer treatment plant processes the sewage by removing sludge and other solids, cleansing the remaining sewage thru a biological process to remove harmful components, and then sending the influent for final disposal to a series of septic seepage beds (very similar to the process used in any individual home septic system). The disposal fields were reconstructed in 2004 and again in 2017. The sewer treatment plant was renovated / updated in 2017. Sewer treatment and disposal are strictly regulated by the State of New Jersey. The treatment plant is limited to processing a maximum daily flow of 40,000 gallons of sewage provided that the average processed monthly flow does not exceed 22,000 gallons per day. The disposal fields have a hydrologic daily capacity of 21,780 gallons. The sewer system serves no other customers. Reviewing the records for potable water supplied to the 104 customers, the daily flows in months without outdoor irrigation/lawn watering average approximates 18,000 gallons per day

CURRENT STATUS – In 2020 from March thru July, the collection system sent to the treatment plant a daily average flow of 24,681 gallons in March (28,842 in April, 26,937 in May, 20,009 in June, and 22,604 in July) with the total treated being 3,292,991 gallons. During this same period a total of 473,500 gallons of collected sewage had to be trucked to an alternate sewage treatment plant for disposal on those days that these flows were in excess of the permitted capacity of the existing plant and disposal fields. It is anticipated that the cost of this hauling and treatment of the excess flows will approximate \$50,000. The existing annual sewer usage charges cannot support this extra cost resulting in the Township Committee establishing a supplement billing to be added to each sewer quarterly bill in 2021. Although the monthly aggregate of excess flows seems large, on a gallons per minute basis it equates to less than 6 gallons a minute –less than the stream from a garden house in an 8 inch diameter sewer main.

ENGINEERING STUDY - The Drakewick Homeowners Association protested the proposed increased sewer charges and requested that the Township employ an independent attorney plus an engineering firm to ensure that the original plant design and current operation are proper. The Consulting Engineer who specializes in analysis of sewage systems has reported that the sewer collection system is experiencing a significant “Inflow and Infiltration” issue (often called I & I) where non sewage water is entering the sewer system via sump pumps; gutter downspouts going directly into the sewer system or going to underground seepage pits which with overflow to the sanitary sewer; surface rain water entering the sewer system through openings in the surface manholes; or ground water seeping into the sewer system from joint failure, broken pipes, etc. He calculates the excess flow, I & I, to be 37% during “wet weather” periods. The independent Attorney has reported that a review of the existing record indicates that the design Engineers met their professional responsibilities in their assumptions, methodologies and analysis.

PROPOSED ACTION PLAN - The sewer correction mains have been inspected by a robotic TV device and no pipe failures were observed. In areas where surface flows may enter a manhole, the Township will be replacing the manhole covers or installing special inserts that prevent any surface flows from entering the system through the manhole openings. However it is the consensus of all involved that the primary source of these “excess flows” is from the existing homes of sewer users, some of which may be via deliberate inflow devices (e.g. sump pumps, down spouts or perimeter foundation drains overflowing into the sanitary sewer) or from broken sewer laterals (a sewer lateral is the underground pipe which connects the household sewer system to the collection main in the adjacent street).

When inspecting the collection system via a robotic TV system in 2019, the Township discovered a number of houses which had excess flows and these were contacted and inspected. More needs to be done. The Township has purchased a pipe camera system that can be inserted in the household sewer lateral through the cleanout trap / observation port that is provided to each home. There is a strong possibility that the homeowner is not aware of a failure in this sewer lateral pipe or the tie in of a perimeter drain to the sewer system. If the TV inspection indicates a high or unusual flow the homeowner will be notified and a more detailed exploration can be done.

HOMEOWNER INVOLVEMENT - The Township needs every homeowner to locate the sewer lateral clean out (a 4-inch diameter pipe connecting the household sewer lateral to the ground surface with a cap that normally sticks up 2 or more inches above ground). The Sewer cleanout port is normally between the house and the street, usually close to the property right of way line (although in some instances it is closer to the house). Very often if there is a basement, you can spot where the sewer pipe exits the house and then use this as a benchmark to locate the clean out cover. The Township has provided to Megan Marino, President of the Homeowners Association, (email: meganmarino7@gmail.com) small yellow flags that should be stuck in the ground at the clean out, or they are available in Town Hall. When this is done, please call the Township at 973-543-4555 extension 210. The Township will inspect the area and determine if the mark out is correct and if so, add it to a data base. When wet weather occurs in the late Fall and the ground water table increases, the Township will use the TV system to examine household flows. This is a slow process but one with a higher probability of identifying the relatively small flows that may exist in an individual sewer lateral.

Your cooperation is needed to resolve this issue and reduce your quarterly sewer use bill. If you have any questions please email the Township Administrator at townadministrator@mendhamtp.org or call 973-543-4555 ext. 215