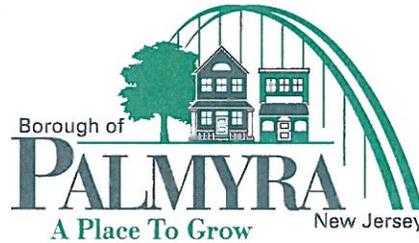


Karen Scheffler  
Mayor  
Borough Council  
Kenneth Brahl  
Michele Dobbs  
Robert Bostock  
David A. Dorworth  
Howard W. Norcross  
Carol Riener



John Gural  
Administrator  
Barbara Sheipe  
Municipal Clerk  
Linda Lewis  
Chief Financial Officer

Member of New Jersey State League of Municipalities

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October 10, 2012

- Subjects:
- 1) Odor Hotline: (856) 303-0726
  - 2) Waste Water Treatment Plant updates
  - 3) Sewer Plant Open House – Saturday, October 20th from 9:00 to 11:00 AM

Dear Resident:

As your Mayor, I wanted to personally and directly address certain matters raised by our residents living in the neighborhood of the Borough's Waste Water Treatment Plant (Sewer Plant). I also wanted to inform you of all of the steps the governing body, administrative staff, sewer personnel and professional consultants are doing to improve your quality of life.

The Borough takes your concerns very seriously and actually tracks your complaints as a way to determine which activities and processes at the Sewer Plant to target for additional improvements. To enable the Borough to better trace odor and other issues back to the source we have created an Odor Hotline at (856) 303-0726, which is a dedicated phone line and answering machine that time and date stamps your complaints. We encourage everyone to utilize this hotline to inform us of any odor issues so we can continue to modify our operations to minimize the Sewer Plant's odor and other impacts. In addition, the Odor Hotline will allow us to promptly return your call.

In addition to the Odor Hotline, this letter will share with you other recent actions and long term projects being undertaken and to assure you that your complaints are being addressed in a responsible and considerate fashion. Please forgive some of the technical jargon below but I wanted our residents to have a complete understanding of the facility and its operations.

The Borough's Sewer Plant has existed at the current location since 1922. The current wastewater treatment system on Firth Lane is made up of a concrete Equalization Tank (smaller rectangular tank), which was constructed in the early 1970s, and two Package Aeration Plants (the larger round steel tanks) constructed in the early 1990s. Though these treatment units have existed for some time, the technology utilized is current for the size of the Sewer Plant and the waste it is treating.

This is important because even though the tanks themselves and some basic in-ground infrastructure are dated, the process, chemicals and equipment utilized are new and modern.

Experts will tell you that the process utilized is known as "activated sludge." It essentially utilizes aerobic (in the presence of oxygen) conditions to break down the waste and separate it into clean water and waste solids. After chemical treatment the clean water is discharged into the river, while the solids are removed from the site by truck for further treatment and disposal. This aerobic process relies on significant quantities of air to be added into the wastewater stream but that only provides relatively small amounts of oxygen. More oxygen from outside air is necessary to complete the process so covering these units is not generally practical. Having said that however, we are seriously exploring the possibility of covering the Equalization Tank (which will require complex venting and air scrubbing equipment) and in fact on October 1st the Borough applied for state funding through the New Jersey Environmental Infrastructure Trust (NJEIT) seeking a low-interest loan in the amount of \$1,900,000.00 for this and other improvements further described below.

Please know that our experts have advised the governing body that a new Sewer Plant designed today would utilize the same “activated sludge” technology and types of equipment that the current facility utilizes. Because of this it is not economically prudent for the Borough to simply replace the Sewer Plant with a “new” facility in the same location as requested. Replacement of the existing Sewer Plant with a new facility on Firth Lane is estimated to cost \$15,000,000.00. If a new plant were constructed at a different location however, increases in cost due to property acquisition and infrastructure would add an additional \$5,000,000.00 on top. And the existing location would still be necessary as a large pumping station to reroute the wastewater to the new facility. This \$20,000,000.00 cost would increase the sewer utility tax of every property owner by approximately \$550 per year for the next 20 years (in addition to the \$350 sewer utility tax currently paid by homeowners). This expense would not improve the current Sewer Plant in any technological sense but only replace it in-kind at a new location.

Given all of the above, and knowing that the desire is to reduce the Sewer Plant’s impact on the existing neighborhood, it makes more sense to utilize Borough resources to augment and further improve the existing facilities.

Improving the existing facilities has been an ongoing process. For instance, the Borough has continually made improvements to the wastewater infrastructure since major issues first came to light several years ago when it was discovered that “industrial dischargers” were causing significant operational problems at the Sewer Plant. Certain local industries were discharging inappropriate and contaminated waste into the Borough’s wastewater system. As soon as it was discovered, the Borough took legal action and cleaned it up. For those residents who have lived in the neighborhood since that time, we are sure that you have seen some improvement.

Since that incident, the Borough initiated two aggressive annual maintenance contracts totaling approximately \$135,000.00 per year. These contracts are for both the Sewer Plant and the entire collection system and cover the cleaning and maintenance of the various components. Since these contracts have been in place the Borough has improved the overall conditions of the facilities. Unfortunately, these cleaning and maintenance operations do sometimes result in short term odor issues, but are necessary in order to maintain the facilities and prevent significant longer duration odor problems. In addition to these improvements and other more recent initiatives, including ongoing air quality testing (which indicates no measurable presence of hydrogen sulfide, the chemical associated with sewer gases), the Borough believes it can undertake additional actions to further reduce the Plant’s impact upon the neighborhood.

The Borough has recently made and is still undertaking additional improvements to the Sewer Plant and related systems beyond cleaning and maintenance. These improvements were identified as offering the best opportunity to abate the various issues raised by our residents. While we continue to seek grants to minimize the financial impact, the only current revenue source available is limited to Palmyra taxpayers. A brief summary of recently completed projects and those in the works follow below.

***Each of these improvements was discussed with the New Jersey Department of Environmental Protection and represents everything the DEP agreed we should be doing.***

1. Two years ago the existing Cedar Trees along the eastern property line of the Sewer Plant property where removed because they were dying and had damaged the existing security fencing. The fence was replaced and additional trees were planted along the fence, but they have not grown to the heights of the trees that were removed. At the request of several residents, twenty additional Eastern Red Cedar Trees, ten to twelve-feet in height, have been planted along the eastern property line to buffer the Equalization Tank from the adjacent residents.
2. A four-foot high windscreen has been added to the up gradient side of the Equalization Tank to direct the prevailing winds upward.

3. The Equalization Tank is the first place wastewater is collected on site. The wastewater is transported to the tank from three Pump Stations located around the Borough. The pipes from these Pump Stations enter the Equalization Tank at an elevation that is not always below the wastewater level of the tank, allowing odors to escape as the tank empties and fills. The pipes have now been extended deeper into the bottom of the tank so they always discharge below the wastewater level.
4. As indicated above, the Equalization Tank is the first place wastewater is collected at the Sewer Plant. The tank is made of concrete and is 40-feet wide by 70-feet long. The tank is aerated to keep the wastewater from going anaerobic, a condition that results in increased odors. (Aeration, which occurs at the bottom of the tank, is why you see bubbles at the top of the wastewater. It should be noted that pollutants are not released into the air during this process). The first eight-feet of the 70-foot length of the tank is baffled from the rest of the tank to allow sand and dirt to settle out from the organic waste – we call this the Grit Chamber. This portion of the tank has been covered and connected to on-site air handling equipment, which collects and passes the air through a water column to scrub any odor from the air. The air handling equipment maintains a negative air pressure thereby reducing the likelihood that odors will escape from this portion of the tank. This is the most recent improvement made to the Equalization Tank with the air scrubbing system put into service on August 3rd. While our operators are still fine-tuning the system, we do note that we have seen a decrease in odor complaints since August 3rd.
5. As stated above, anaerobic conditions cause increased odors from wastewater. As waste matter decomposes it naturally utilizes all available oxygen first, and unfortunately, once depleted, anaerobic (without oxygen) decomposition naturally begins, which tends to give off more odors. These situations can occur within the Pump Stations that convey the wastewater to the Sewer Plant during periods of reduced flow (late at night when we're all sleeping). When we wake up in the morning however and prepare for the day more waste flows into the Pump Stations, which is then pumped to the Equalization Tank. This wastewater may be anaerobic due to the lack of activity during the night and cause short-term odors. Our operating staff has recently evaluated the pumping system cycle timing to minimize the detention time at our Pump Stations thereby reducing the likelihood that anaerobic conditions will occur.
6. The Borough is also undertaking a project that has the potential for a significant impact on odor issues. This project is designed to reduce the wastewater's likelihood to create odor in the first place. As discussed, waste decomposition is a natural process that starts as aerobic and transitions to anaerobic without additional aeration. The treatment system at the Sewer Plant attempts to control the process by adding air (oxygen) to the waste preventing the anaerobic conditions from occurring. In addition to maintaining aerobic conditions, controlling another variable in wastewater can also reduce its likelihood to produce odors: controlling the pH level as acidic conditions tend to lead to odor issues. Studies have shown that chemical addition to the collection system can control the pH level of the wastewater. Maintaining wastewater at a neutral or slightly alkaline pH minimizes the potential for sewer gases to form (hydrogen sulfide), thereby reducing odor issues. To accomplish this we've been injecting, on a trial basis, a special chemical, magnesium oxide, into the wastewater stream at the New Jersey Avenue Pump Station since mid-September (it's a material similar to concentrated milk of magnesia). Additional investigations need to be completed to determine if the overall system will benefit from this type of treatment but the study has thus far indicated positive results at the Pump Station level. If successful the Borough will invest the necessary resources to begin adding the magnesium oxide on a daily and permanent basis. We should know for certain in another month if it's successful and if so this approach will be permanently adopted by the spring.
7. Lastly, based on a correlation of odor complaints over the past several years, one of the sources of odors at the Sewer Plant is the sludge handling process. Sludge is a term used to describe the solids removed from the wastewater by the treatment process. These solids are temporarily stored in a portion of the Package Aerations Plants until they are trucked off site for final disposal. In the center of the Sewer

Plant site is an unused tank that previously functioned as a Sludge Digester. It is proposed that this tank will be rehabilitated into a Gravity Sludge Thickener and the sludge from the Package Aeration Plants will be stored in this tank waiting for transfer to trucks for off site disposal. This tank will be covered and connected to air handling equipment and the air will undergo odor control treatment before it is discharged. This measure is being taken to separate the portion of the process most likely to produce odor and provide it with an odor control system. This work will require a permit through the State of New Jersey and will take approximately one year for design and permitting before construction can begin. It is currently anticipated that this tank could be in place and on line by the beginning of 2014. The specifics of the proposed odor control system for this project are currently under investigation and funding is being pursued (see NJEIT low-interest loan program above). Depending on the type of system selected and its capacity it may be feasible to cover additional tanks or portions thereof at the Sewer Plant, such as the Equalization Tank, as previously indicated. We have asked our engineer to consider this during the design phase of the project.

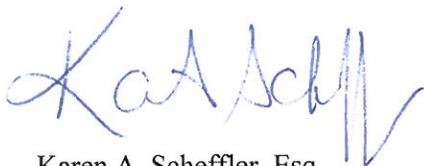
The above is only a partial list of upgrades proposed at the Sewer Plant and throughout the Borough's wastewater collection system. These projects represent an estimated \$1,900,000.00 in improvements that the Borough is currently undertaking – or currently planning -- to address odor issues. We hope after reviewing this letter that you understand the Borough's commitment to minimizing the Sewer Plant's impact on the neighborhood and that you also understand that the process is a long and methodical one. These projects were not conceived overnight but have been in the works for years. While we understand and share your frustration, the restrictions placed on municipal governments do not allow us to do things as rapidly as we all may like. Please understand that we are taking these issues seriously and are working within the confines of current legal, regulatory and economic constraints to move these projects ahead for the betterment of the entire community.

In order to provide more information and to respond to your concerns firsthand, the Borough is sponsoring a Sewer Plant Open House on Saturday, October 20th from 9:00 to 11:00 AM. We'll provide tours and maps of the facility, answer your questions, and better explain the various initiatives and improvements we're undertaking. In addition to myself, Borough Council member and Sewer Committee Chairperson Michele Dobbs, Borough Administrator John Gural, Sewer Superintendent Tom Ryan, and Sewer Engineer Bill Kirchner of Environmental Resolutions, Inc., will be in attendance. Also, we're pleased to announce that 7th District State Assemblyman (and Palmyra resident!) Troy Singleton will be in attendance to answer your questions and address your concerns as well.

In the interim, please feel free to contact me on my cell phone at (609) 440-5094 or via email at [kscheffler@boroughofpalmyra.com](mailto:kscheffler@boroughofpalmyra.com) and please call the Borough's new Odor Hotline at (856) 303-0726 if you have any complaints. (In case of a Sewer Plant related emergency however, please continue to call Palmyra Police/Burlington County Central Communications at (856) 829-0191 and then call the Odor Hotline.)

Thanks again and I look forward to seeing you next Saturday.

Best regards,



Karen A. Scheffler, Esq.  
Mayor, Borough of Palmyra

Cc: 7<sup>th</sup> District Assemblyman Troy Singleton  
Palmyra Borough Council  
New Jersey Department of Environmental Protection, Water Compliance and Enforcement