PMUA Responses to 12/17/14 NJDEP Public Hearing

Comment #7 added 1/9/15
Comment #8 added 1/29/15
Comment # 9 added 2/12/15
Comments #10-13 added 3/9/15

In response to comments made at the December 17, 2014 public hearing held by the New Jersey Department of Environmental Protection on the Plumsted Municipal Utilities Authority's (PMUA) application for a surface water discharge permit, the PMUA has prepared the following responses.

1. **Comment: Inadequate notice for the 12/17/14 public hearing was provided. The public comment period is inadequate.**

   Response: The New Jersey Department of Environmental Protection (NJDEP) provided written notice in the NJDEP Bulletin and Asbury Park Press on November 5th, 2014, more than the thirty (30) days advance notice the NJDEP is required to provide. In addition to this, and leading up to the 12/17/14 public hearing, the PMUA chose, at its own initiative, to forward in early November 2014 the October 31, 2014 NJPDES draft permit to local groups with whom the PMUA had previously met with regarding a surface water discharge (SWD) permit. These groups included the Plumsted Environmental Commission and Doctor's Creek/Crosswicks Creek Watershed Association. In addition, the PMUA issued a local press release on November 21, 2014. The press release appeared on the Plumsted Township e-mail alert system on December 1, 2014 and again on December 12, 2014. In addition, the PMUA press release appeared in the December edition of the New Egypt Newsletter (mailed November 29, 2014 to all households in Plumsted Township). Lastly, on October 23, 2014, an article appeared in the Tri-Town News which clearly stated the Township and PMUA were actively pursuing a surface water discharge permit from the NJDEP. Given all this publicity, the NJDEP has twice extended the public comment period; originally from December 17th to December 31st, 2014 and now to February 2, 2015. Any written comments can be mailed to the attention of Pilar Patterson, Chief, Mail Code 401-02B, Division of Water Quality, Bureau of Surface Water Permitting, P.O. Box 420, Trenton, NJ 08625-0420

2. **Comment: The PMUA proposes to use an antiquated treatment system**

   Response: The limitations placed on the effluent of wastewater treatment plants by the Federal Clean Water Act are based on the Best Available Technology system which is run by the National Pollutant Discharge Elimination System (NPDES). Best available technology means that the wastewater treatment plant must use the most effective technology that is economically feasible to treat the wastewater. The treatment system the PMUA proposes to use is considered to be in the forefront in this regard. This treatment system will incorporate Biological Nutrient Removal (BNR) and an Advanced, or as also referred to as an Enhanced, Membrane Filtration (MBR) process. The major treatment unit components will include a grit/screen removal process, a four (4) stage biological treatment process, ultraviolet light disinfection, post aeration

and odor control. While BNR and MBR technology is capable of providing a very high level of treatment on a consistent basis for most of the water quality parameters regulated by the NJDEP and included in the draft SWD permit, limits for Total Dissolved Solids, Phosphorous, Nitrogen and metals will require additional treatment, most likely, chemical treatment to meet the stringent permit limits established in the NJDEP draft SWD permit. For example, the effluent limit the PMUA must meet for Phosphorous is 0.1mg/l. In no circumstance will the discharge exceed the surface water quality limits established for the Crosswicks Creek. In fact, in the case of Dissolved Oxygen, the level of Dissolved Oxygen in the Crosswicks Creek downstream of the discharge will actually increase.

Other treatment systems the PMUA considered were: Reverse Osmosis, Bardenpho and Oxidation Ditch treatment methods. Each of these systems have their own limitations in terms of land requirements, operating costs and the need for enhanced treatment to meet the various water quality limits established by the NJDEP. For example, while the process of Reverse Osmosis (RO) is capable of removing metals and TDS from the effluent stream to non-degradation levels, the bi-product concentrate from the RO process is very difficult and expensive to treat. In addition, the RO process itself requires a lot of energy to operate. For a more detailed analysis and explanation of these various treatment systems and costs, please refer to the Socio-Economic Analysis submitted to the NJDEP on May 30, 2014 and the two addendums to the Socio-Economic Analysis dated September 9, 2014 and October 17, 2014. These reports and other information can be viewed on the PMUA web site at www.pmua.net. In addition, the PMUA has advertised a Request for Proposals for a Special Project Engineer to design the collection and treatment system. As part of this process the PMUA will continue to look for ways to enhance the treatment process.

3. **Comment: Where can I get more information on the NJPDES Permit?**

Response:

- Attend the monthly meetings of the PMUA. The PMUA meets on the 3rd Tuesday of each month at 6pm at the Township Municipal building located at 121 Evergreen Road.
- Review the Minutes of our meetings.
- Read the PMUA report and recommendation to the Township Committee to pursue a surface water discharge permit dated March 2011.
- Read the Socio Economic Analysis for the Plumsted Township Wastewater Treatment Plant dated May 30, 2014 and the two (2) Addendums dated September 9 and October 17, 2014.
- Read the Draft NJDEP Permit.
- All the above and more are posted on our web site at www.pmua.net

4. Comment: What happens to our Downtown if a sewer system is not built?

Response:

-The long planned economic revitalization of New Egypt will not proceed. Businesses will not be able to diversify; to allow for water intensive uses such as sit down restaurants.

- Residents will continue to struggle with how to cope individually with maintaining, repairing or replacing their on-site disposal systems. Financially this is likely to impose a greater hardship on residents in the downtown. The average cost of a new conventional or alternate design septic system is estimated at approximately $30,000. The State of New Jersey continues to impose stricter regulations on private disposal systems. This cost is far more than the PMUA estimates will be the cost to connect to the planned sewer system. The Township is exploring and plans to have available a low interest, long term loan program to assist businesses and residents in financing these costs.

-Septic and cesspool systems will continue to have a negative effect on water quality in Oakford Lake and the Crosswicks Creek caused by aged and outdated systems not capable of adequately treating the septic waste. Most of the downtown is within the 100 year flood hazard area of the Crosswicks Creek. The related shallow depth to groundwater and small lot sizes make it difficult to support and sustain septic systems and cesspools. It is thought that approximately 60% of existing septic systems and cesspools pre date 1969 when Ocean County began keeping records.

-Sewering of the downtown will support and enforce the "Smart Growth" initiatives of Plumsted Township by channeling growth to the NETC as long planned and envisioned.

-Sewering of the downtown, as with the successful open space preservation program Plumsted has supported, is a community wide issue and should be viewed and addressed as such. Individual, private disposal systems, whether conventional or alternative septic systems are not the way to service the density of downtown New Egypt. A healthy downtown is beneficial to all in Plumsted.

5. **Comment: The water will not be recharged to the aquifer if the sewer system is built. It will all be discharged to the Crosswicks Creek.**

Response: The Town Center, as is most of the Township, is located within the Delaware River Basin. Consequently, neither the NJDEP nor the Delaware River Basin Commission view this as an inter basin transfer of water which they discourage. It is one of the reasons the PMUA and Township did not pursue the alternative of constructing a 9 mile long force main to connect to the Jackson Municipal Utilities Authority pump station at Great Adventure and then to the Ocean County Municipal Utilities wastewater treatment facilities in Brick; a total distance of some 26 miles. This would have involved an inter basin transfer of water as the water would discharge to the Atlantic Ocean. In the research the MUA did on this and discussions it had had with NJDEP, the discharge from the septic and cesspools in the sewer service area is not readily recharged to the underlying surface water aquifer due to a number of factors including the proximity of homes to the Crosswicks Creek or its tributaries, the high seasonal water table and dense soils. These all contribute to a horizontal flow of water (discharge) as opposed to a vertical movement of water (recharge).The areas of the Township more likely to achieve recharge to groundwater are to the northeast and south of the Town Center.

6. **Comment: Sprawl development is likely to occur if the sewer project and redevelopment project are approved.**

Response: Plumsted Township is recognized for its Smart Growth initiatives. In 1998, the Township established a New Egypt Town Center (NETC) boundary which was approved by the State. The NETC was re designated in 2010 and is the only part of Plumsted Township where public sewers can be permitted. The sewer service area approved by Ocean County and NJDEP is limited to the NETC boundary. Much of the NETC is presently developed and very few vacant parcels are available for development. The few exceptions are the PRRC parcel where the retirement homes are proposed and areas along County Route 537 which are developed or zoned for commercial, not residential development. Although no sewers are proposed outside the NETC, this area of Plumsted Township is also well protected against future growth as much of the land, over 3,000 acres, is in farmland preservation or open space preservation programs, are in the boundary of the Joint Base (20,000 acres) or already developed. Of the projected build out demand for sewer of 600,000 gpd, approximately 400,000 gpd is projected for residential use and the rest for commercial and light industrial use. Of the 400,000 gpd, approximately 300,000 gpd are to be part of the planned service area for Phase 1 and 2. Phase 1 and 2 do not include already developed areas such as the Field Crest development, which would be included in a future phase for sewers. So, the reality is most of the projected need for sewer is for existing development in the NETC which supports the Township's long standing "smart growth" initiatives.

7. **Comment: the proposed 600,000 gallon per day discharge will increase stream flow, erosion, sedimentation and impact water quality at the point of discharge to the Crosswicks Creek and further downstream.**

Response: The discharge to the Crosswicks from the proposed Sewage Treatment Plant at full development is 600,000 gallons per day (gpd). This is the equivalent of .92 cubic feet per second (cfs). CFS is the standard unit of measure used for stream flow. For the Crosswicks Creek, the average rate of flow is 131.3 cfs as measured by the United States Geological Society (USGS) at the Extonville Station (Station #01464500). The 600,000 gpd proposed rate of discharge to be added is less than a 1.0 percent increase to the average rate of flow in the Crosswicks Creek. This is an insignificant increase in flow. Even if the proposed discharge of 600,000 gpd is compared to the rate of flow for low flow conditions of 59 cfs, the proposed flow represents an increased rate of flow of approximately 1.6 percent. Again, this is not a significant increase in flow.

The impact of this flow from the proposed treatment plant on the Crosswicks Creek, from the standpoint of potential flooding, on erosion of the stream bank or increase in stream sediment will likewise be insignificant. This is due, in part, to the minimal increase in stream flow at low flow or average flow conditions but also due to the way in which the surface water discharge will occur. The discharge of the highly treated wastewater to the Crosswicks Creek will be released over a 24 hour period and the rate of the discharge will be a monitored, even flow. Its impact on the Crosswicks Creek, as opposed to the sudden and dramatic increase in stream flow that can be caused by storm events (the highest recorded discharge is 4,860 cfs), is more likely to cause erosion of the stream bank or increase in sediment in the stream than is the proposed surface water discharge. The membrane filtration process and sedimentation tanks used in the

treatment process are quite effective in removing sediment from the waste stream (see also Response to Comment #2: Antiquated Treatment of Wastewater above).

8. **Comment.** What's the impact of the 600,000 gpd discharge from the STP when the flows in the Crosswicks Creek are very low?

Response: Low stream flow is commonly measured by what is referred to as the 7Q10. 7Q10 is a hydrologic term defined as the lowest 7-day average flow that occurs once every ten (10) years. The 7Q10 is an extremely conservative criterion used by the USEPA and NJDEP, in part, to establish water quality limits the PMUA must meet for a surface water discharge permit to be issued. The 7Q10 for the Crosswicks Creek at the point of discharge is approximately 6 cfs in the summer and 18 cfs in the winter. To obtain a surface water discharge permit, the NJDEP requires a detailed water sampling analysis of the receiving stream to be conducted between the months of April and October when stream flows are typically lower and only when the stream flow was at or below 59 cfs. The information obtained from this study is then used to calibrate a model that is used to assess the potential impact of the discharge on the stream at the stringent 7Q10 low flow level. The water quality limits established by the NJDEP in the draft permit have been developed in accordance with NJDEP requirements and are extremely stringent. On the infrequent occurrence when 7Q10 low flow conditions exist, there will be no appreciable difference between the effluent discharged to the stream and the existing ambient stream conditions. As the flow increases above 6 cfs, which is 99.97% of the time, the effluent will be further diluted to the point where the effluent discharged will be close to or non-detectable downstream of the discharge. For example, as mandated by the NJDEP, the level of dissolved oxygen (DO) in the effluent discharged to the Crosswicks Creek must be 8 ppm. Dissolved oxygen is one measurement of a stream's condition and is important to its aquatic life. Based on this requirement, the water quality model projects a creek DO of 4.43 mg/l at 7Q10 stream low flow conditions and this level of DO will, in general, not change with or without the proposed 0.06 mgd discharge. In fact, downstream of the discharge the level of DO in the water is slightly increased as a direct result of the discharge. A further example that the discharge at the 7Q10 low flow conditions will not adversely affect water quality in the Crosswicks Creek is the PMUA's request to the NJDEP to increase the level of Total Dissolved Solids (TDS) from 163 mg/l to 1,000 mg/l. This request was based on the NJDEP's requirement to reduce the level of metals and phosphorous to very low levels. This amount of TDS is allowed by the Delaware River Basin Commission. The allowable increase to TDS and the resulting lower levels for metals and phosphorous is a positive result that will have no impact on water quality as TDS is primarily a drinking water concern affecting taste and is not a water quality concern either at low flow or higher flow stream conditions.

9. Comment: Is there a Plan to provide more drinking water to serve existing development and the PRRC?

Response: Yes. New Jersey American Water owns and operates the water supply system in New Egypt and is responsible for servicing the needs of the New Egypt Town Center and for obtaining all necessary permits for any new wells. Their system currently serves approximately 450 customers in New Egypt all of whom are within the New Egypt Town Center. The two existing wells NJAW owns and operates are very close to capacity and this requires their water supply system to be expanded. To serve existing and future development of the Town Center, NJAW will need to construct two new wells. NJAW is currently seeking approvals from the NJDEP to construct a third well and, as part of the permitting and testing process for the third well, will investigate whether the site will also be able to support a fourth well. NJAW has indicated the third well is scheduled to go in to service in mid-2016. The projected service date for the fourth well is by mid 2021.

10. Comment : The proposed surface water discharge to the Crosswicks Creek, which itself discharges to the Delaware River, will adversely impact New Jersey American Water's water treatment plant located in Delran which supplies potable water to the region.

Response: It is approximately 26 miles from the discharge location in Plumsted Township to the Delaware River. It is yet another approximately 16 miles from the Delaware River at Bordentown to Delran, NJ where New Jersey American Water (NJAW) has its water treatment facility. NJAW's water treatment plant in Delran provides potable water to the region. The Delaware River at Trenton has an average flow of 8.5 billion GPD (13,100 CFS), more than 14,000 times the discharge of Plumsted's Treatment Plant and the Crosswicks Creek has an average flow of 84.9 million GPD near the discharge point at the Delaware River, more than 140 times the discharge of the plant. It is improbable, given this long distance of approximately 42 miles, as well as the amount of dilution present in both the Crosswicks Creek below the discharge and certainly the Delaware River, that our discharge to the Crosswicks Creek will adversely impact NJAW's facility or that it will be even detectable.

11. Comment. There is no undo button once the sewage treatment plant is in operation for the wildlife and for our neighboring communities.

Response: Currently, there are four (4) other communities that discharge wastewater to the Crosswicks Creek. These are: Wrightstown (160,000 gallons per day); Allentown (125,000 gallons per day); Bordentown (1.5 million gallons per day) and Hamilton (9.5 million gallons per day).The New Jersey Department of Corrections (Albert C. Wagner Correctional Facility at Bordentown) also discharges wastewater to the Crosswicks Creek (700,000 gallons per day). Plumsted, as every one of these communities, needs to be and will be a responsible partner in the stewardship of the Crosswicks Creek. The Township and the PMUA accept that responsibility and have demonstrated this throughout the long planning process it has taken to get to where we are now. We have met with our immediate neighbors along the way and other groups to keep them informed of our progress. It is generally accepted that sewering of New Egypt is necessary to remove old and undersized septic systems and cesspools. This will

certainly benefit Plumsted as well as our downstream neighbors and to allow New Egypt to be revitalized as many of our downstream neighbors have been able to do as they have sewers. The draft permit requires the plant to be constantly monitored for compliance and severe penalties levied if the plant is not in compliance. Every five (5) years the State will review the operation and permit limits and can increase the permit limits if it feels these are necessary. The State can also mandate new treatment technology be added to improve the treatment plant's operation. If there are power outages, the plant will have a backup generator to keep the plant functioning. An alarm system will be built in to alert the operator to any system malfunction and the design includes system redundancies to guard against the release of untreated or partially treated wastewater. In short, as opposed to the decentralized nature of individual septic and cesspool systems, the sewage treatment plant is a highly regulated operation which is constantly monitored and maintained.

12. Comment: The NJDEP made an agreement behind closed doors with the Township.

Response: The prolonged and detailed studies performed by the PMUA, evidenced by the historical documents available at the NJDEP and on the PMUA website clearly show the very deliberate process that this project has undergone. Any statement to the contrary is without merit and contradicted by the proliferate evidence. No further explanation is required but please visit our web site at www.pmua.org. or contact us directly if you should have any questions.

13. Comment: Pharmaceutical waste is a growing issue and with the proposed retirement project particularly so.

Response: According to a recent updated bulletin from the United States Environmental Protection Agency (USEPA)*, there is a potential for pharmaceutical drug residues to be present in treated municipal wastewater. Based on their on-going study, the results suggest that risks "posed to healthy adult humans (and animals with similar physiology) by water-borne pharmaceutical residues is very low". The PMUA will look into this issue further as the design of the sewage treatment plant goes forward to determine if there is a way to effectively and economically treat this waste. Other efforts such as public education as to the proper way to dispose of prescription medications and the availability of more accessible and convenient means to dispose of this waste are necessary.

* Risk of Pharmaceuticals in Water/Research in Action/USEPA/ updated August 4, 2014