

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATERSHED MANAGEMENT

ADOPTED AMENDMENT TO THE MERCER COUNTY WATER QUALITY
MANAGEMENT PLAN

Public Notice

Take notice that on ~~OCT~~ - 8 2009, pursuant to the provisions of the New Jersey Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., and the Statewide Water Quality Management Planning rules (N.J.A.C. 7:15-3.4), an amendment to the Mercer County Water Quality Management Plan (WQMP) was adopted by the Department of Environmental Protection (Department). This amendment, submitted on behalf of the Stony Brook Regional Sewerage Authority and Pennington Borough, Mercer County adopts a new Wastewater Management Plan (WMP) for Pennington Borough. This amendment also modifies the Hopewell Township WMP and allows for the expansion of the existing Stony Brook Regional Sewerage Authority (SBRSA) Pennington Sewage Treatment Plant (STP) from 0.30 million gallons per day (MGD) to 0.445 MGD.

The SBRSA Pennington STP currently serves the entire municipality of Pennington Borough and locations within Hopewell Township that are contiguous with the municipal boundary of Pennington Borough. Pursuant to N.J.A.C. 7:15-5.8 of the Water Quality Management Planning rules in affect at the time this amendment was submitted to the Department, the SBRSA had wastewater management planning responsibility for the area within the municipal boundary of Pennington Borough and those portions of Hopewell Township served by the SBRSA Pennington STP. Areas within Hopewell Township

currently served by the SBRSA Pennington STP are the Hopewell Valley Regional Schools (which include the Hopewell Valley Central High School and the Timberlane Middle School), Pennington Market, fifty-two (52) residential dwellings in the Pennington Point development and a maximum of 25,000 gallons per day (gpd) sanitary wastewater flow generated from Bristol-Myers Squibb.

Currently, the SBRSA Pennington STP (#NJ0035319) has a permitted capacity of 0.30 MGD and discharges to a segment of the Stony Brook designated as a Category 2 (C2), Fresh Water 2 (FW-2) waterway as classified under the Surface Water Quality Standards, N.J.A.C. 7:9B. This amendment allows for an expansion of the SBRSA Pennington STP to 0.445 MGD and expands the previously approved sewer service area within Hopewell Township in two locations. The proposed increase in permitted treatment capacity is requested in order to meet future wastewater needs from proposed growth as a result of redevelopment, such as the expansion of current commercial and institutional (school) facilities, to provide service to future proposed development on vacant land within the service area and to allow for the connection of existing failing septic systems.

The increase in the future sewer service area is limited to property immediately adjacent to the existing boundary of the SBRSA Pennington STP service area. The expansion includes parcels located along Main Street identified as Block 47, Lots 1 and 3 in Hopewell Township which are bounded by Knowles Street on the east, State Route 31 on the west, and Main Street on the south; these properties have existing commercial and residential development currently served by individual subsurface sewage disposal systems. In addition, approximately 35 acres of Block 63, Lot 4, Hopewell Township, an approximately 48 acre property

adjacent to the Timberlane Middle School owned by the Hopewell Valley Regional School District (HVRSD) is included in the SBRSA Pennington STP service area. This property will be used to support future expansion of the HVRSD facilities, including athletic fields with a concession stand and restrooms.

As part of this amendment, adjustments to the sewer service area delineation along the border between Pennington Borough and Hopewell Township were necessary in order to more accurately reflect the boundary line contained in existing tax maps for these municipalities. As a result of more accurate parcel mapping and available digital technology, this WMP re-delineates portions of the sewer service area to accurately identify the parcels actually currently served by the SBRSA Pennington STP and revise the sewer service area of the "Tree Streets" neighborhood to more accurately correspond to the lots proposed for connection to the sewer system.

This amendment has been reviewed in accordance with Executive Order 109 (2000) (EO-109) and N.J.A.C. 7:15-5.18. This WMP incorporates an environmental constraints/build-out (build-out) analysis to identify future projected flow from the proposed service area to ensure there will be sufficient capacity at the SBRSA Pennington STP to accommodate future need. This build-out analysis was conducted for all parcels within the existing and proposed sewer service areas. The existing wastewater flow received at the SBRSA Pennington STP from Pennington Borough and those areas to be served in Hopewell Township was calculated as the total combined metered flow for the year 2007 expressed as the average of the monthly average flow in MGD. The projected wastewater flow was calculated in accordance with N.J.A.C. 7:14A-23.3 based upon the current Township zoning and included potential development of all remaining parcels of

vacant land, underdeveloped residential and commercial property and any existing parcels currently served by individual subsurface sewage disposal systems that are located within the sewer service area and not currently provided sanitary sewer service. Environmentally constrained areas were excluded from the sewer service area for purposes of projecting wastewater flow. The environmentally constrained areas excluded in projecting wastewater flow from the proposed sewer service areas included wetlands, preserved open space and documented flood prone areas or protected riparian corridor areas where development would be prohibited. The existing wastewater flow and calculated projected wastewater flow were combined to determine the total projected wastewater flow of the SBRSA Pennington STP service area within Pennington Borough and Hopewell Township. The resulting total projected wastewater flow is 0.445 MGD.

In order to satisfy the Riparian Corridor Analysis, Pennington Borough adopted Ordinance No. 2008-2 to ensure the protection of the riparian corridors along all perennial and intermittent streams and lakes within the Borough. As required, the adopted ordinance establishes and protects a Riparian Buffer Conservation Zone (RBCZ) of required width on both sides of the stream measured from the top of bank of an intermittent or perennial stream, or centerline if the bank is not defined, and from the defined edge of a lake, pond or reservoir at bank-full flow or level. The width of the RBCZ is to be based on the surface waterbody's classification designated at N.J.A.C. 7:9B. For C2 waterbodies, the RBCZ is a minimum of 75 feet; for C2 Waters for Trout Production (FW2-TP) the RBCZ shall be extended to 150 feet; and for Category One (C1) waters, the RBCZ shall equal the Special Water Resource Protection Area as defined at N.J.A.C. 7:8-5.5(h) or a maximum of 300 feet. In addition, as a requirement to meet the Riparian Corridor Analysis, no new service area has been proposed within a RBCZ in Hopewell Township.

To satisfy the Nonpoint Source Pollutant Loading/Hydromodification Analysis, an ordinance ensuring compliance with the performance standards of the Stormwater Management Rules, N.J.A.C. 7:8, was necessary. To comply with this requirement, both Pennington Borough and Hopewell Township have adopted the necessary Stormwater Management Ordinances. As required, these ordinances indicate that the performance standards must be met through the use of non-structural measures, where possible. If non-structural measures alone are insufficient to meet the performance standards, then the proposed project must supplement with structural best management practices (BMPs) as necessary.

The Endangered or Threatened Species Habitat Analysis was performed utilizing the Department's Division of Fish and Wildlife, Endangered and Non-Game Species Program "Landscape Project". The Landscape Project identifies areas of critical habitat that support or potentially support Federal and State endangered or threaten species and other species of concern. Endangered and Threatened Species habitats reviewed under this analysis are Rank 5 (Federal endangered and/or threatened species), Rank 4 (State endangered species), or Rank 3 (State threatened species). This analysis determined that a portion of the previously approved sewer service area located on Block 46, Lot 13 in Hopewell Township is designated as endangered and/or threatened species habitat Ranked 3. However a revision adopted by the Department on June 25, 2007 allowed for the expansion of the SBRSA Pennington STP sewer service area to encompass only 8.5 acres of the approximately 19.5 acre parcel, for the completion of the construction of the new Borough Pennington Department of Public Works (DPW) facility. As a condition of this adopted revision, 10.5 acres of the project property not included in the sewer service area expansion have been preserved as open space for mitigation due to site development. Subsequently, the Endangered or Threatened Species Habitat Analysis has been met.

Pennington Borough and the SBRSA Pennington STP planning area within Hopewell Township are entirely within the sewer service area. As a result, the Nitrate Dilution Model analysis was not required as part of the WMP.

The Water Use Analysis indicated that the existing water allocation permit #5276 for the diversion of 12.6 millions gallons per month could serve future build-out as projected for this WMP. As a result, no new or expanded source of potable water, well allocation or water diversion is required at this time. Thus, the Water Use Analysis has been satisfied.

As a result of the increase of projected wastewater flow to the SBRSA Pennington STP, an antidegradation analysis, in accordance with the New Jersey Surface Water Quality Standards antidegradation regulations for a C2 waterbody at N.J.A.C. 7:9B-1.5, was required. The SBRSA Pennington STP facility is currently regulated under a NJPDES discharge to surface water permit #NJ0035319 for a flow value of 0.30 MGD with associated pollutant loadings. The antidegradation analysis evaluated by the Department was based on the increase in flow from 0.30 MGD to 0.445 MGD.

In order to satisfy the anti-degradation requirements contained in N.J.A.C. 7:9B-1.5, the applicant has submitted a study entitled "Stony Brook Regional Sewerage Authority Pennington Sewage Treatment Plant Expansion Anti-Degradation Study", dated August 14, 2007 (and revised September 11, 2008) by Omni Environmental. The Department has reviewed this report and based on the following three proposed permitting conditions has determined that the anti-degradation requirements at N.J.A.C. 7:9B-1.5 has been satisfied.

1) Projected estimated range of instream concentrations for Total Dissolved Solids, Total Suspended Solids, Dissolved Oxygen and Total Phosphorus in Stony Brook downstream of the treatment plant, resulting from the increase in flow from 0.3 MGD to 0.445 MGD, fall within the 95% confidence interval for existing stream conditions. Therefore, no changes would be required as part of the NJPDES permitting process to the existing limitations for these parameters.

2) To remain within the 95% confidence interval of instream ammonia, the Department intends to propose a summer concentration limitation of 20 mg/L for Nitrate as part the permit.

3) To remain within the 95% confidence interval, the Department intends to propose a winter concentration limitation of 9.5 mg/L for Ammonia as part of the permit.

This amendment proposal was noticed in the New Jersey Register on April 6, 2009 at 41 N.J.R. 1519(a). A public hearing on the proposed WQMP amendment, conducted by the Mercer County Planning Board, was held on Wednesday May 13, 2009. The Mercer County Planning Board and the Department received comments during the comment period. The Mercer County Planning Board considered these comments and on July 8, 2009, in the form of Resolution No. 2009-01, endorsed the amendment proposal for the consideration of the County Executive. On July 14, 2009, in accordance with the Mercer County WQMP Amendment Procedures, the Mercer County Executive formally approved the amendment.

The following people submitted written and/or oral comments on this amendment:

Commenter Name, Affiliation

1. Mr. Anthony Arnone, Resident, Hopewell Township
2. Mr. Gene Ramsey, Resident, Hopewell Township

Summary of Comments and Responses:

The comments submitted and the Department's responses are summarized below. The number(s) in parentheses after each comment identifies the respective commenter(s) listed above.

Comment:

The inclusion of the HVRSD District property, identified as Block 63, Lot 4 in the expanded SBRSA Pennington STP sewer service area, is objected to. The 6,000 gpd projected wastewater to be potentially generated at this location should be discharged to an on-site septic system to ensure continued groundwater availability in the vicinity.

The water supply source proposed for the HVRSD District property is an on-site well. There have been failures of residential wells in the past in the section of Hopewell Township near the HVRSD properties. If the projected 6,000 gpd of sanitary wastewater generated from this location is treated and discharged at the SBRSA Pennington STP, groundwater resources available for aquifer recharge would diminish resulting in more frequent residential well failures. (1, 2)

Response:

The proposed sewer service area expansion to Block 63, Lot 4 has been requested by Hopewell Township to accommodate the future facilities at the HVRSD site to support athletic field activities with restrooms and concession stands. To address the above comments submitted by the local residents, Hopewell Township requested a review by the consulting Township hydrogeologist. In order to determine if sewer connection to this location would result in adverse impacts to groundwater resources, this review included site-specific hydrogeologic conditions, regional geology and hydrology, groundwater flow, and recharge under drought conditions. The conclusions from this report were forwarded to the Mercer County Planning Board and the Department for consideration.

This hydrogeology review for the Township identified the Passaic Formation as the aquifer system beneath the project site. An analysis of the calculated recharge volume to this aquifer system from the 35-acre parcel project location during the "Drought of Record" estimated that the recharge capacity exceeded the maximum volume of annual withdrawal projected for the site. This maximum volume of withdrawal calculated assuming 6,000 gpd to be withdrawn every day of a calendar year was considered to be the "worst case scenario". The maximum annual groundwater withdrawal for this worst case scenario at the Timberlane Middle school property was calculated to be 2.2 million gallons per year (MGY).

The projected wastewater, calculated in accordance with N.J.A.C. 7:14A-23.3 is based on a maximum occupancy during a major event when all athletic fields are in use, such as a tournament. The projected flow of 6,000 gpd from the Timberlane Middle school property has been calculated as 5 gallons per person with the maximum occupancy of 1,200 persons that could be present during major events when all athletic fields are in use concurrently. This worst case scenario is

utilized by the Department to maintain available treatment capacity at the STP at all times.

As indicated by the consulting Township hydrogeologist, a March 2, 2001 hydrogeology study titled, "Evaluation of Groundwater Resources of Hopewell Township, Mercer County, New Jersey," determined that the Passaic Formation, located within Hopewell Township, was evaluated as one of the better groundwater resources in the area. Recharge to the Passaic Formation aquifer system during periods of severe drought was estimated to be 410 gallons per day per acre. Consequently, recharge to the aquifer system beneath the 35 acre site during a repeat of the "Drought of Record" would be approximately 5.2 MGY or more than twice the 2.2 million MGY maximum volume of annual withdrawal calculated for the project site. Further, the Township Engineer indicated that the 6,000 gpd projected flow does not reflect the anticipated typical daily use of the site. Hopewell Township provided information that indicates that it is anticipated that approximately only seventeen major tournament events would occur annually. Consequently, the Township Engineer calculated that the anticipated actual annual groundwater withdrawal from the site would be far less than the calculated potential maximum annual groundwater withdrawal of 2.2 MGY.

In addition, the consulting Township hydrogeologist reported that the majority of the homes near the Timberlane Middle School are upgradient or in a separate drainage basin from the Timberlane Middle school property. Therefore, the report concluded that these homes are likely not reliant on recharge to groundwater resources from the school property. Residences to the northeast and southeast of the Timberlane Middle school property could be reliant on recharge to the aquifer beneath the athletic fields. However, recharge to the site even

during a repetition of the "Drought of Record" will exceed the volumes of wastewater that will periodically be removed during a major athletic event such as a soccer tournament. The Township hydrogeologist concluded that, given that the athletic fields will be essentially unused from November through March when groundwater resources receive most of their annual replenishment, it is not expected that the sewer service extension to Timberlane Middle school property to support the expansion of flow from the concession stand/restrooms would adversely affect groundwater resources to these residences.

The findings from the Township hydrogeologist have been reported to Hopewell Township, Mercer County Planning Board and the Department. The Department has reviewed these findings and concurred that recharge to the aquifer systems beneath the site during the "Drought of Record" exceeds the volumes of wastewater to be infrequently removed from the property during athletic events, thus, rates of natural replenishment should not be exceeded. Based on the findings of the Township hydrogeologist, the Department concluded that the connection of a concession stand and restrooms at the Timberlane Middle school property should not significantly impact groundwater availability in the vicinity. With regard to past reported well failures, the Department does not have information on the condition, construction or depth of the failed wells to establish any cause of failure.

This proposed amendment represents only one part of the permit process and other issues may need to be addressed prior to final issuance of all appropriate permits. Additional issues which may need to be addressed may include, but are not limited to, the following: compliance with stormwater regulations; antidegradation; effluent limitations; water quality analysis; exact locations and designs of future

treatment works (pump stations, interceptors, sewers, outfalls, wastewater treatment plants); and development in wetlands, flood prone areas, designated Wild and Scenic River areas, or other environmentally sensitive areas which are subject to regulation under Federal or State statutes or rules.

Lawrence J. Baier
Lawrence J. Baier, Director
Division of Watershed Management
Department of Environmental Protection

October 8, 2009
Date