

## **VI. Evaluation of Alternatives**

### **A. Technically feasible alternatives identified in Section V of this plan must be evaluated for consistency with respect to the following:**

The two alternatives identified are the wastewater treatment facilities upgrade and the sewer extension on Fairview Street.

#### **1. Applicable plans developed and approved under Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act.**

The alternatives are consistent with Plans that were developed and approved under Section 4 and 5 of the Clean Streams Law and Section 208 of the Clean Water Act. The Comprehensive Water Quality Management Plan (COWAMP) developed under Sections 4 and 5 of the Clean Streams Law for the Lower Susquehanna River Basin was developed in 1976 and has been outdated for some time. There were two specific references to facilities in South Middleton Township contained in that plan.

##### **(a) Existing and Proposed Non-Municipal Facilities**

W. G. Rice Elementary School Treatment Facility – This facility has long since been abandoned with the school being connected to the regional treatment facilities in the Borough of Mt. Holly Springs. The alternatives proposed in this plan continue to recommend use of the Mt. Holly Springs treatment facility as a regional treatment plant for development in that area of the Township. This treatment facility has adequate capacity to provide for the anticipated growth in Area 3 as documented in Chapter 4.

##### **(b) Existing Industrial Dischargers to Waters of the Commonwealth**

PPG Industries – PPG Industries currently operates an industrial waste treatment facility that discharges to groundwater.

- 2. Municipal Wasteload management Corrective Action Plans or Annual Reports developed under PA Code, Title 25, Chapter 94/ The municipality's recent Wasteload Management Reports (Chapter 94) should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report.**

The alternatives proposed by this plan are consistent with the Wasteload Management Plans under Title 25, Chapter 94 for the regional treatment facilities involved. The recommendations and findings contained in the most recent Wasteload Management Report indicate that adequate conveyance and treatment capacities exist within the current system to accommodate sewage generated by growth over the next five years and the future sewage treatment needs will be addressed with the expansion of the existing plant.

- 3. Plans developed under Title II of the Clean Water Act or Titles II and VI of the Water Quality Act of 1987.**

The alternatives proposed by this plan are consistent with Title II of the Clean Water Act. The SMTMA treatment facility and the regional collection and conveyance facilities serving Areas 1 and 3 were all constructed under the federal construction grants program. Section 201 Facilities Plans were prepared for each of these collection, conveyance and treatment systems serving South Middleton Township. Each of these 201 plans recommended regional treatment facilities, and the alternatives recommended in this plan continue to do so.

- 4. Comprehensive Plans developed under the Pennsylvania Municipalities Planning Code. The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan.**

The alternatives proposed by this plan are consistent with the current Comprehensive Plan for South Middleton Township. Current goals include directing new development to areas with existing infrastructure; i.e. areas designated as future growth areas. They also include implementing the on-lot management program in areas outside those growth areas.

The previous Act 537 Plan is not consistent with the Township's current Comprehensive Plan and land use regulations. The primary purpose of this plan is to change the Township's Official Sewage

Facilities Plan to be consistent with the Township's Comprehensive Planning and Zoning.

**5. Antidegradation requirements as contained in PA Code, Title 25, Chapters 93, 95, and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act.**

The alternatives proposed by this plan are consistent with anti-degradation requirements as contained in Chapters 93 and 95 of the PADEP regulations. The wastewater treatment plant discharges to the Yellow Breeches Creek. The Yellow Breeches creek antidegradation classification is as a high quality waters (HQ), and has protected uses due to the presence of cold water fishes (CWF), and migratory fishes (MF).

The final NPDES Renewal Permit was issued on April 23, 2010, which includes a schedule for compliance with the effluent limitations for Nitrogen and Phosphorus removal. Under this schedule, the Authority is compelled to fully complete the construction of an upgraded facility by September 30, 2014 and to achieve compliance with the effluent limitations by September 30, 2015.

**6. State Water Plans developed under the Water Resources Planning Act.**

The alternatives are consistent with the State Water Plan that was developed by the Department of Environmental Resources in 1980. None of the alternatives proposed in this plan affect the current State Water Plan. The Plan for Subbasin 7, the Lower Susquehanna River Basin been outdated for some time. There were four specific references to facilities that provide public water service in South Middleton Township contained in that plan:

- (a) The Forge Road Water Company. This private water supply was purchased by the Township's Municipal Authority in 1983. The production well has been taken out of service.
- (b) The South Middleton Township Municipal Authority – A detailed description of the SMTMA Water System can be found in Chapter II. Since the State Water Plan was developed, the SMTMA has added a third production well to serve the northwestern area of the Township (Walnut Bottom Road). In addition, the SMTMA purchased the Forge Road Water Company, and now provides public water service to the Carlisle Manor Area of the Township (Forge, Trindle and York Roads).

(c) The Mount Holly Springs Borough Authority – This Authority continues to provide public water service to Township residents in the Mt. Holly Springs area as shown in the State Water plan. Interconnects exist with the SMTMA system that can be utilized in emergency situations.

(d) Carlisle Borough Authority – South Middleton Township current has agreements in place that allow for the purchase of water from the Carlisle Borough Authority to serve areas directly adjacent to the Borough.

**7. Pennsylvania Prime Agricultural Land Policy contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide a narrative on local municipal policy and an overlay map on prime agricultural soils.**

The alternatives are consistent with the Pennsylvania Prime Agricultural Land Policy. Prime Agricultural Soils in the Township are shown in Appendix S. Unfortunately, past development practices have encouraged development in these areas. However, as stated in Chapter 5, several of the goals of the Comprehensive Plan are to: preserve agriculture and conserve open rural spaces, protect land and land values within the natural limits of the land and the ability of the Township to guide development and prevent urban sprawl by establishing a pattern of growth and development aimed at sustaining our character of life. This new approach is consistent with the Pennsylvania Prime Agricultural Land Policy. Finally, the Township' Zoning Ordinance, and the future sewer service areas proposed in this plan, strongly restrict extension of public sewerage facilities into the agricultural zoning districts further solidifying the consistency with the Pennsylvania Prime Agricultural Land Policy.

**8. County Stormwater Management Plans approved by DEP under the Storm Water Management Act. Conflicts created by the implementation of the proposed wastewater treatment alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists.**

The alternatives are consistent with Plans approved by the PADEP and Cumberland County under the Stormwater Management Act (Act 167). There are two of these plans applicable to South Middleton Township: Hogestown run Watershed and Upper Yellow Breeches Watershed. Both of these Stormwater Management Plans were developed assuming the development densities allowed under the

Township's Zoning Ordinance. Since the goal of this effort is to bring the Act 537 into compliance with the Comprehensive Plan and Zoning Ordinance, none of the alternatives proposed are inconsistent with the assumptions made in developing these watershed stormwater management studies.

A Cumberland Countywide Act 167 plan was approved by DEP on September 29, 2010 which incorporate the previous studies. No conflict exists with our proposed alternatives and this study.

**9. Wetland Protection. Using wetland mapping developed under Plan Section II. G., identify and discuss mitigative measures including the need to obtain permits for any encroachments on wetlands from the construction or operation of any proposed wastewater facilities.**

The alternatives are consistent with wetlands protection in the Township. The plant is not located within the Township (the planning area). The plan for extension of sewer along Fairview Street is along an existing street and not likely to disturb any wetlands.

The only other areas proposed for construction activities as a result of this plan are within proposed subdivisions for future growth areas. These are subject to the Township's Subdivision and Land Development Ordinance (Section 602 j.) that required developers to identify and mitigate any potential impacts on wetlands.

**10. Protection of rare, endangered, or threatened plant and animal species as identified by the Pennsylvania Natural Diversity Inventory (PNDI). Provide DEP with a copy of the completed request for PNDI search document. Also provide a copy of the response letter from the Department of Conservation and Natural Resources' Bureau of Forestry regarding findings of the PNDI search.**

The alternatives are consistent with the protection of rare, threatened and endangered plant and animal species. Pursuant to these requirements, South Middleton Township Municipal Authority has submitted a Request for PNDI Search to DCNR. A copy of the response letter from DCNR is included in Appendix F.

In areas outside the sewer service areas, development is limited, and subject to requirements in the Township's Individual and Community Sewage System Management Ordinance. Planning for on-lot systems for new land development requires developers to identify and mitigate

any potential impacts on rare, threatened and endangered plant and animal species.

**11. Historical and archaeological resource protection under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission. Provide the department with a completed copy of a Cultural Resource Notice request of the Bureau of Historic Preservation (BHP) to provide a listing of known historical sites and potential impacts on known archaeological and historical sites. Also provide a copy of the response letter from BHP.**

The alternatives are consistent with the protection of historic and archaeological resources. Pursuant to these requirements, South Middleton Township will submit a Cultural Resources Notice request to the Bureau of Historic Preservation. A copy of the response letter will be included in Appendix F.

In areas outside the sewer service areas, development is limited, and subject to requirements in the Township's Individual and Community Sewage System Management Ordinance. Planning for on-lot systems for new land development requires developers to identify and mitigate any potential impacts on historic and archaeological resources.

**B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this plan by submitting a letter from the appropriate agency stating that the agency has received, reviewed, and concurred with the resolution of the identified inconsistencies.**

Consistency documentation is included in Appendix F.

**C. Evaluate alternatives identified in Section V of this plan with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements.**

The final NPDES permit for the plant upgrade addresses the applicable water quality standards, effluent limitations or other technical, legislative or legal requirements associated with the alternative. The permit is included in the Appendix W of this Plan.

- D. Provide cost estimate using present worth for analysis for construction, financing, on going administration, operation and maintenance and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of plan submission.**

Using the real interest rate of 2.7% from OMB Circular A-94, Appendix C, dated December 2009, which represents public investment net of inflation effects for a 20-year period; the year 2014 anticipated sewer O&M expenses net of administration, and net of treatment charges to Carlisle and Mount Holly Springs, of \$1,159,526 annually; and the capital cost opinion of the upgraded and expanded treatment plant of \$12,551,000 presented in the treatment study; the present worth cost of the improved sewage facilities for the next twenty years is anticipated to be \$30.29 million.

- E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this plan. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to the areas identified in the plan as needing improved sewage facilities within five years from the date of plan submission.**

With respect to the credit rating and funding capacity of SMTMA, and the common need for additional funding for SMTMA's water system to meet DEP's Groundwater Rule requirements, and for refinancing SMTMA's existing debt, with respect to the capital fund balances accumulated by SMTMA from tapping fees and other sources, the services of recognized bond counsel have determined that private bank funding in the amount of \$13,225,000 offers the most advantageous means of providing the required funds.

- F. Analyze the need for the immediate or phased implementation of each alternative proposed in Section V of this plan including:**
- 1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of sewage management programs.**

There are no critical public health hazards.

**2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a sewage management program justifying time schedules for each phase.**

A sewage management program is in place, so no phasing is necessary for that aspect.

The upgrade / expansion project will be phased to the extent that the existing facilities must be able to remain in operation and in compliance with the NPDES Permit limitations throughout the entire construction period.

The first phase will include but may not be limited to the following:

- Raw Sewage Pumping Station
- Headworks Facilities, including coarse screening, fine screening, and de-gritting
- Secondary Clarifiers
- Sludge Pumping Station
- Emergency Backup Generator
- Tertiary Filters
- Ultraviolet Disinfection System
- Aerobic Digesters
- Sludge Thickening and Dewatering Systems
- Dewatered Sludge Storage Building

The second phase will include but may not be limited to the following:

- IFAS (Integrated Fixed-Film Activated Sludge) Facilities
- Plant Building Upgrades

**G. Evaluate administrative organizations and legal authority necessary for plan implementation.**

The Administrative Organization responsible for funding and constructing the needed sewer system is already in place. South Middleton Township is fortunate in that it has an existing Authority with the ability to finance and construct such a project in a timely fashion.