XIII. JUSTIFICATION FOR THE SELECTED TECHNICAL & INSTITUTIONAL ALTERNATIVES (A SUMMARY)

2007 Report Chapter XIII – Justification for Selected Technical & Institutional Alternatives

A. The Technical Wastewater Disposal Alternatives Chosen to Meet the Wastewater Treatment Needs of Each Study Area of the Planning Area

This Section is retained unaltered, with the following exceptions for the first 4 Service Area Subsections:

2. The establishment of the "South Tamaqua Service Area" to encourage specific focus on the maintenance, repair, and/or replacement of the existing on-lot sewage disposal systems, OLDS is recommended. A public cluster community on-lot sewage disposal system, COLDS, is recommended for the properties currently connected to wildcat sewers and for those properties for which insufficient space or suitable soil is available to the property owner. The system would include a septic tank with effluent dosing chamber and pump and check valves, low pressure sewer collection system with redundant check valve and isolation valve at the point of connection to the pressure sewer, and a community sand mound or drip irrigation system on nearby vacant land within the village. The South Tamaqua Sewer Service Area Boundaries are shown in **Exhibit II-1**. The properties with confirmed malfunction and wildcat sewer connections are provided in the "2012 Needs Assessment" report.

4. The establishment of the separate "Clamtown and Reynolds Service Areas" to encourage specific focus on the maintenance, repair, and/or replacement of the existing on-lot sewage disposal systems, OLDS is recommended. A public cluster community on-lot sewage disposal system, COLDS, is recommended for the properties currently connected to wildcat sewers and for those properties for which insufficient space or suitable soil is available to the property owner. The system would include a septic tank with effluent dosing chamber and pump and check valves, low pressure sewer collection system with redundant check valve and isolation valve at the point of connection to the pressure sewer, and a community sand mound or drip irrigation system on nearby vacant land within the village. The Clamtown and Reynolds Sewer Service Area Boundaries are shown in **Exhibits II-2a & 2b**. The properties with confirmed malfunction and wildcat sewer connections are provided in the "2012 Needs Assessment" report.

5. The establishment of the "Andreas Service Area" to encourage specific focus on the maintenance, repair, and/or replacement of the existing on-lot sewage disposal systems, OLDS is recommended. A public cluster community on-lot sewage disposal system, COLDS, is recommended for the properties currently connected to wildcat sewers and for those properties for which insufficient space or suitable soil is available to the property owner. The system would include a septic tank with effluent dosing chamber and pump and check valves,

low pressure sewer collection system with redundant check valve and isolation valve at the point of connection to the pressure sewer, and a community sand mound or drip irrigation system on nearby vacant land within the village. The Andreas Sewer Service Area Boundaries are shown in **Exhibit II-3**. The properties with confirmed malfunction and wildcat sewer connections are provided in the "2012 Needs Assessment" report.

1. The establishment of the "Snyders Service Area" to encourage specific focus on the maintenance, repair, and/or replacement of the existing on-lot sewage disposal systems, OLDS is recommended. A public cluster community on-lot sewage disposal system, COLDS, is recommended for the properties currently connected to wildcat sewers and for those properties for which insufficient space or suitable soil is available to the property owner. The system would include a septic tank with effluent dosing chamber and pump and check valves, low pressure sewer collection system with redundant check valve and isolation valve at the point of connection to the pressure sewer, and a community sand mound or drip irrigation system on nearby vacant land within the village. The Snyders Sewer Service Area Boundaries are shown in **Exhibit II-4**. The properties with confirmed malfunction and wildcat sewer connections are provided in the "2012 Needs Assessment" report.

B. Justification for The Chosen Alternative Based Upon the Evaluation of Wastewater Disposal Needs; Future Wastewater Needs; Operation and Maintenance; Cost Effectiveness; and Environmental Compliance (A Summary of Selection)

1. Existing Wastewater Disposal Needs Evaluation

This Section is retained unaltered.

2. Future Wastewater Disposal Needs for 5 and 10 Years Growth Areas Evaluation

This Section is retained unaltered with the exception that West Penn Township opted out of participation in the ESP Region Planning and adoption of its ordinances. RETTEW has provided revised Service Area 10 year growth projections which are more conservative than the prior 2007 projections. Based upon the "2012 Needs Assessment" report, the current occupied properties are less than that assumed in 2007 which will decrease the population projections of 2011. Without established need for public sewers, the growth of the five villages will be limited by regulatory requirements for sewage planning for new construction.

3. Operation and Maintenance Evaluation

This Section is retained unaltered.

4. Cost Effectiveness Evaluation

Some of the general discussion of the 2007 report is still valid; however, RETTEW has provided construction cost opinions and financing analysis which supersede the prior report.

The 2011 Draft Act 537 Plan Update evaluated each Study/Service Area separately to determine the most economical sewage facilities solutions. At that time, one (1) overall "Project" with four (4) "Phases" for each Service Area represented the most cost effective Alternative Solution. The total estimated project cost is approximately $11,475,000. See **Exhibits R-XI-1** though **R-XI-4**. However, this Alternative Solution was determined to be not affordable. After a new "Needs Assessment" door-to-door study was completed, it was determined the previous needs assessment study, which dates back to 2003, significantly overstated the amount of existing sewage facility malfunctions. The current recommendation of individual OLDS repair/replacement and targeted cluster COLDS in each village as one project is the most cost effective and affordable Alternative Solution. See **Exhibits R-XI-11 & 12**.

5. Available Management and Administrative Systems Evaluation

This Section is retained unaltered.

6. Available Financing Methods Evaluation

This Section is superseded by the following:

RETTEW provided financial analysis for the chosen alternative based upon PennVEST and USDA RUS grant and loan options. During implementation, CDBG grants will also be sought and the level of PennVEST and RUS grant availability is not guaranteed at this time. However, the financial analysis is a good tool for determining if the chosen alternatives can be economically implemented and what the annual costs may be to a user on an EDU basis.

RETTEW has provided preliminary evaluation of funding alternatives. The Project cost may be funded through the USDA Rural Utilities Services with a combination of 45% grant and low interest loans as described in Chapters X and XI of this report. The 2011 Draft Act 537 Plan Update estimated Annual User Fees for the 306 EDUs including debt service and operation and maintenance costs is approximately $1,242. See **Exhibits R-XI-5A**.

Based upon the recent Needs Assessment Report, it was determined that many property owners could repair and/or replace their current OLDS. Property owners may utilize private institutions for home equity loans to finance the repair and/or replacement system. For age qualified and/or low income property owners other programs through USDA RUS and PennVEST are available. The

estimated cost and financing alternatives for OLDS is presented in **Exhibit R-XI-12**. The estimated annual user fee per EDU is calculated to range approximately between $420 to $1,320 or $35 to $110 per month depending on qualified financing. RETTEW recommends that this Alternative Solution be implemented.

For the remaining properties connected to wildcat sewers and/or properties too small for a repair/replacement sewage facility, COLDS is recommended. The anticipated financing analysis for the one "Project "of five (5) separate village COLDS is presented in **Exhibit R-XI-11**. The estimated annual user fee per EDU is calculated to be approximately $890 or $75 per month. RETTEW recommends that this Alternative Solution be implemented. See **Exhibits R-XI-11 & 12**.

7. Environmental Soundness and Compliance With Natural Resource Planning and Preservation Programs Evaluation

This Section is retained unaltered.

C. Justification for The Capital Financing Plan Chosen to Implement the Selected Alternative(s)

See section B-6 above.