X. EVALUATION OF ALTERNATIVES

2007 Report Chapter X – Evaluation of Alternatives

A. Technically Feasible Alternatives and Their Consistency

This Section is retained unaltered.

B. Resolution of Inconsistencies

This Section is retained unaltered.

C. Evaluation of Identified Alternatives With Respect to Applicable Water Quality Standards, Effluent Limitations or Other Technical, Legislative, or Legal Requirements

This Section is retained unaltered.

D. Evaluation of the Available Funding Methods

This Section is retained unaltered with the following additions:

RETTEW and the Sewer Committee held several preliminary funding alternative meetings with the following agencies:

1. RCAP Solutions, a non-profit funding consulting firm, met with the Sewer Committee to discuss the Schuylkill County Community Block Grant program and the need to conduct application specific income surveys within each Service Area to better qualify for need beyond the 2010 Census data.

   The Schuylkill County Community Development Block Grant Program (CDBG) receives only $400,000 per year. Applications are reviewed on a competitive basis and the income surveys are used to determine the percent of low income and critical income levels in each study area. This program is funded by the Federal Department of Housing and Urban Development and the federal funds are being cut back at this time.

   West Penn Township has exceeded 4,000 residents and now qualifies for annual CDBG funds through Schuylkill County. However, income surveys are still necessary to qualify each sewer service area for use of these funds.

2. USDA – Rural Utilities Services (RUS) met with the Sewer Committee to discuss the combination of grant and low interest financing and the need to conduct application specific income surveys within each Service Area to better qualify for need beyond the 2010 census data.

RUS is now using 2010 census data. Recent discussions RUS revealed that for West Penn & Walker Townships the current market intermediate interest rate is 2.75% for Median Home Income (MHI) properties. The proposed project funds can be used to upgrade existing facilities or construct new facilities required to meet applicable health or sanitary standards. The target interest rate for debt service is 1.2% of the MHI and tap fees are typically around $1,500/EDU.

RUS still administers the 504 Loan and Grant Program for very low income families and for homeowners 62 years of age or older. The program provides grants up to $7,500 and loans up to $20,000 to qualified individuals. The interest rate on the loan is 1% for a maximum of 20 years. This program could make replacing an on-lot sewage system more affordable for the individual property owner.

3. The Pennsylvania Investment Trust, also known as PennVEST, met with the Sewer Committee to discuss the possibility of a grant and/or low interest loan to finance the cost of design and permitting. Current PennVEST Rates and Terms for Schuylkill County are 1.0% for years 1-5 and then 1.743% for years 6-20. They can sometimes extend the term to 30 years for certain communities in Schuylkill County. For some high needs project areas, grant funds may sometimes be awarded up to 50% of the construction cost. However, grant funds are not generally used for preliminary planning purposes.

   PennVEST also has loans for replacing an on-lot sewage system for qualified individuals. Maximum loans of $25,000 at 1.0% for a 20 year term are available.

E. Evaluation of Cost Opinions Using Present Worth Analysis for Construction, Financing, On-Going Administration, Operation and Maintenance, and User Fees for Alternatives Identified

RETTEW computed new construction cost opinions for each alternative identified for evaluation based upon recent similar wastewater construction project public bid costs. In addition, operational and maintenance costs including electrical, and sludge disposal costs were calculated based upon the current operations of similar sized sewage facilities. RETTEW conducted present worth analysis for each alternative to help evaluate the life cycle cost and determine the most economical solution.

Construction cost opinions have been developed for each of the four (4) Service Areas. The service area boundaries remain unchanged from the 2007 report. A comparison of both gravity collection and low pressure sewers is provided for each Study Area in the next chapter. The length of the collection system is generally identical for each alternative for each service area. The unit costs of the gravity sewer open trench construction are based upon recent similar public bid projects. The unit costs of the directional drill construction for low pressure force mains are also based upon recent similar public bid projects. This alternative also includes the installation of a grinder pump station for each connection

which will be dedicated to the property owner upon completion of the project. Rock excavation contingency is provided for the excavation portion of the cost opinions for each alternative.

Also provided is a comparison of the pumping or treatment alternatives for each study area. Once the collection system has brought the service area wastewater to a central location, either it will be pumped to an existing WWTP, treated locally for stream discharge, or treated locally and pumped for adjacent soil discharge. The force main installation cost opinions are based upon directional drill construction along PennDOT shoulder right-of-way with limited pavement restoration required. Rock excavation contingency is provided for the cost premium for directional drilling through rock.

The treatment system cost opinions are based upon use of a package system. For this alternative analysis, a biologically engineered single sludge treatment (BESST) system was utilized; however, many package treatment systems would be evaluated during a detailed design implementation phase. The packaged treatment system would be sited within each Service Area with stream discharge. The system design would include the necessary treatment levels for the receiving stream. The treatment assumptions are based upon domestic waste at 300 mg/l BOD, 250 mg/l TSS, and 45 mg/l ammonia treated to 10/10/10 mg/l, respectively.

The soil discharge alternatives of community sand mound, community septic drip irrigation and community spray irrigation are based upon land area necessary for soil treatment as recommended from the RETTEW Facility Study for Community Sewage Disposal Systems, dated June 2011. All three of these systems will require septage solids tanks, filtration and pressure dosing pumps and force mains to the disposal area. The distance to the disposal area was based upon an average for each study area and the sites tested. The spray irrigation alternative will also require wastewater lagoons for holding the wastewater during the winter months when spray irrigation disposal of effluent is not possible due to freezing temperatures.

With the assumption that the collection system O&M costs would be similar regardless of the type chosen or even the combination of types chosen, a present worth analysis is provided to compare the pumping of treatment alternatives based upon a 40 year period of on-going electrical, contract O&M, and sludge disposal. For alternatives which include pumping wastewater to Tamaqua Borough Sewer Authority's WWTP, the Borough Sewer Authority's tapping fee and anticipated Borough Sewer Authority's treatment fee (O&M) is factored into the present worth analysis. The present worth analysis, comparing 40 year life cycle capital and O&M cost, is the proper tool for determining which alternative is most economical for each Study Area.

RETTEW also provided financial analysis for the chosen alternative based upon PennVEST and USDA RUS grant and loan options. During implementation, CDBG grants also will be pursued. 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. There is no guarantee of any loan or grant funds at the time of this report.

Alternatives for smaller scale cluster COLDS have been evaluated, based upon the recent findings of the "2012 Needs Assessment" [Appendix R-VI-2].

F. The Evaluation of the Need for Immediate or Phased Implementation

This Section is retained unaltered with the following recommendation.

The previous 2007 report provided a general description of the Immediate and Phased Implementation in response to sewage need. This must be considered based upon the recent "2012 Needs Assessment" [Appendix R-VI-2].

G. Evaluations of Administrative Organizations and Legal Authority

This Section is retained unaltered.