6.1 CONSISTENCY EVALUATION

In addition to obtaining consistency with municipal objectives, it is important to evaluate the consistency between the wastewater management alternatives selected in this Act 537 Plan and the objectives of county, state, and federal policies and plans. As required by the Pennsylvania Sewage Facilities Act, this Act 537 Plan is evaluated for consistency with each of the following policies and plans.

6.1.1 Comprehensive Plans

All alternatives have been developed based on a desired consistence with the Halifax Township, the Valleys Regional, and the Dauphin County Comprehensive Plans. There are some conflicts between the Halifax Township Comprehensive Plan and the Valleys Regional Comprehensive plan proposed land use. In general, future development will be managed to more closely reflect the Valleys Regional Comprehensive Plan's Character Map; however, location of future development will also be, in part, determined by availability of community facilities and utilities, environmental needs and constraints, and ability to sustain projected growth while being mindful of those principles important to the residents of the Township.

6.1.2 Municipal Wasteload Management Plans Under Chapter 94

Halifax Township does not own, operate, or maintain any community wastewater collection/treatment system at this time. HAWASA annually submits a Chapter 94 report to DEP for its wastewater treatment facility. Wastewater flow projections used in this Act 537 Plan are consistent with those included in the Chapter 94 reports.

6.1.3 Plans Developed Under the Federal Clean Streams Law, Water Quality or Clean Water Acts

Public sewage generated as a result of Alternative 4D identified in this Plan will be conveyed the HAWASA WWTP for treatment and disposal to the Susquehanna River, a tributary to the Chesapeake Bay. Currently, no TMDL is issued in the Lower Susquehanna River Watershed. The HAWASA WWTP is in the preliminary design phase for an upgrade in capacity currently being performed by HAWASA's Engineers. The upgrade in capacity will take into account projected flows from the alternatives identified in this Plan and the proposed HAWASA WWTP Upgrade Project will be designed to comply with the established water quality criteria identified within the WWTP's most recent NPDES Permit with requirements for the Chesapeake Bay Program.

6.1.4 Antidegradation Requirements Contained in Chapters 93, 95, and 102

The implementation of the recommended alternatives identified in this Act 537 Plan would not result in a conflict with the regulations of Chapter 93, Water Quality Standards; Chapter 95, Wastewater Treatment Requirements; or Chapter 102, Erosion and Sediment Control. The receiving wastewater treatment system to serve the Planning Area (HAWASA WWTP) is in the preliminary design phase for an upgrade in capacity currently being performed by HAWASA's Engineers. The upgrade in capacity will take into account projected flows from the alternatives identified in this Plan and the proposed HAWASA WWTP Upgrade Project will be designed to comply with the established water quality criteria.

It is expected that the construction of public sewer extensions to serve the Planning Area will enhance water quality in the Township by reducing the number of active, improperly functioning OLDS. Any sewer system improvements constructed within the Planning Area during implementation of the selected alternatives will have a soil and erosion sedimentation control plan prepared as part of the preliminary design stage of the project. Therefore, a Water Quality

Antidegradation Report is not required.

6.1.5 Pennsylvania's Prime Agricultural Land Policy
Map 3 contained in Appendix C displays the location of Prime Agricultural Soils in Halifax Township. As can be seen from Map 3, prime agricultural soils are located within the Planning Area. Construction of any structural alternative will result in minimal disturbance of these soils, if any; however, approval from the Agricultural Land Condemnation Approval Board may need to be secured.

6.1.6 Stormwater Management Plans Approved by the Department
Stormwater management in the Planning Area is dictated by the Halifax Township *Subdivision and Land Development Ordinance*. There are no inconsistencies with the Ordinance resulting from this Act 537 Plan. Any construction activities resulting from this Act 537 Plan will comply with the Ordinance.

6.1.7 Wetland Protection
Based on the National Wetlands Inventory mapping (see Map 2 in Appendix C), wetlands are located along stream corridors in the sewer service area. The service area is expected to expand in the 20-year planning window and as a result, new collection and conveyance facilities are anticipated. A wetland delineation to identify and define the actual locations of wetlands and their boundaries should be performed during the design phase if any expansion of the existing facilities implemented.

Wetlands will be avoided to the maximum extent possible. If wetland impacts are unavoidable during construction, these areas will be restored to preconstruction conditions once construction of the sewer facilities is complete. The wetland soil will be stockpiled during any excavation and restored to the appropriate seed mix for the surrounding native vegetation. If permanent impacts to wetlands are proposed and mitigation is necessary, a full mitigation plan will be developed in accordance with the latest PA DEP and United States Army Corps of Engineers (USACE) guidelines. All required permits will be obtained prior to the start of construction.

6.1.8 Protection of Rare and Endangered Plant and Animal Species
The Pennsylvania Natural Diversity Inventory (PNDI) must be evaluated for adverse effects resulting from the implementation of the alternatives proposed in this Plan.

6.1.9 Pennsylvania Historic Preservation Act
The Pennsylvania Historic and Museum Commission (PHMC) must be consulted to identify the potential impact of the alternatives evaluated by this Plan.

6.2 PENNVEST CONSISTENCY

When considering PENNVEST funding, the following social, recreational, and environmental issues must be considered in addition to the issues identified above.

6.2.1 Recreation and Open Space
The alternatives recommended by this Plan will not in itself create any new recreational or open space opportunities since the majority of the proposed sewer facilities are within existing road right-of-way or proposed land development.

6.2.2 Air Quality
With the exception of the minimal dust and exhaust during the construction of any sanitary sewer facilities, the proposed project will not create any significant impacts on air quality.

6.2.3 Fish and Wildlife
The elimination of discharges from private wastewater treatment facilities and on-lot malfunctions in the Planning Area to surface waters in the Township will have a positive impact on aquatic life. None of the recommendations proposed by this Plan are anticipated to have negative impacts on fish and wildlife.

6.2.4 Wild and Scenic Rivers
There are no rivers in the Planning Area considered scenic by the Pennsylvania Scenic Rivers Act.

6.2.5 Coastal Zone Management
There are no coastal areas within the planning area.

6.2.6 Socio-Economic Impacts
The availability of public sewer service in the Township is considered necessary to maintain community viability, protection of public health, and secondarily to protect property investments.

6.2.7 Water Supplies
Water supplies, both public and private, will not be negatively impacted by the recommended alternatives of this Plan. In fact, water supplies may be positively impacted through elimination of pollution entering existing groundwater sources from existing malfunctioning OLDS and greywater discharges.

6.3 WATER QUALITY STANDARDS

The wastewater management alternatives identified and evaluated in Chapter 5 were selected based on their ability to provide adequate collection, conveyance and treatment of wastewater generated in the Planning Area and throughout the Township.

Implementation of the structural alternatives will not require new public wastewater treatment facilities as wastewater from this area is proposed to be conveyed to an existing wastewater treatment facility.

6.4 COST ANALYSIS

Estimates of construction costs and overall project costs were presented for all of the structural alternatives for un-sewered areas discussed in Chapter 5. These costs, as well as operation and maintenance, present worth costs, and estimated increases in user rates for each alternative are found for the structural alternatives within the Plan found in Chapter 5. It should be noted that the cost estimates prepared in this Plan are conceptual level cost estimates appropriate for planning level detail and should not be considered as final costs for financing purposes. Estimates of construction costs considering the HAWASA WWTP upgrades and all of the current and proposed HAWASA customers are presented in Chapter 8.

6.5 FUNDING ALTERNATIVES FOR THE PLANNING AREA

In sewer projects, initial design and construction costs represent the most significant investment that will be required to make in the improvements. Nevertheless, the annual operation and maintenance costs must be considered when evaluating the economic feasibility of proposed alternatives.

The most significant challenge for a sewerage project is the identification of a financing plan which residents and businesses can afford. The revenue needed to plan and construct a sewerage project can be separated into two (2) general categories. The first category, referred to as up-front revenues, is the total revenue that can be reasonably collected in the initial stages of the project. Up-front revenues typically consist of reserved local funds, government grants, developer contributions and capital charges fees. Up-front revenues are used to offset the costs of planning and constructing the project. In most cases, these revenues are insufficient to cover the total costs of the project and additional revenue is needed. The second category of revenue is financing, which generates the revenue needed to pay for the remainder of the project. Several options are available for financing, including government grants or loans, private loans, or bond issues.

6.5.1 Sources of Up-Front Revenue

For smaller communities, it is important to obtain as much up-front revenue as reasonably possible for public sewer projects in order to reduce the total amount of the project that must be financed. In the past, there were several federal programs that provided grants for these types of projects. Over the years, these programs have been gradually eliminated as the federal government has transferred most of the financial responsibility for these programs to the state and local level. Consequently, competition for these funds is strong and the majority of available grant money is generally funneled to the most economically distressed communities. As a result, most up-front revenue is now generated locally through tapping fees and contributions by land developers. A summary of the various sources of up-front revenue for public sewer projects is provided as follows:

6.5.2 Pennsylvania Infrastructure Investment Authority (PENNVEST)

The PENNVEST program was established by the Pennsylvania State Legislature to address the health risks posed by inadequate water and wastewater facilities within the Commonwealth. The principle mission of the PENNVEST program is to provide financial assistance for projects that protect the public health and promote economic development in Pennsylvania. Since its inception, this program has developed into primarily a low cost revolving loan program. Grants are rare and are only made when PENNVEST has determined that the financial condition of the recipient is so poor that the repayment of a loan is unlikely, and that the project will not be able to proceed without a direct grant. The recent Growing Greener Initiative has allowed PENNVEST to allocate greater amounts of loans and grants for infrastructure development projects making them more affordable for the users who ultimately must pay for them.

Recent initiatives by the current administration have indicated a priority of funding toward infrastructure projects tied to economic development. As such, the future of funding for projects not involving economic development is uncertain.

6.5.3 Developer Contributions

Contributions by land developers are becoming a relatively common source for up-front revenue. The funds provided by the developer are directly related to the benefits that the development will derive from the use of the public facilities. In some cases, the developer may actually construct the necessary improvements at his expense and then transfer ownership of the improvements to the local municipality. In other cases, in lieu of actually constructing the improvements, the developer may make a cash payment to the municipality to offset a portion of the costs for the improvements. As previously stated, no land development plans are currently proposed within the planning area.

6.5.4 Capital Charges Fees

Capital charges fees, or tapping fees, are an equitable means by which a system can assess a portion of the capital costs of constructing the new facilities to all users of the proposed system. The imposition of these fees is based upon the concept that all users of the system derive a benefit from this use, and that the costs of this benefit should be allocated among all users without prejudice or penalty. For this reason, tapping fees are usually based on a measure of the total flow contributed by the service connection or lateral.

PA Act 57 of 2003 contains extensive provisions regarding calculation and types of fees that may be charged by municipalities and authorities. Each community must establish its own fee criteria in accordance with this Act. Capital charges fees are an established method for raising up-front revenue and would be an appropriate part of the community's financing plan for the proposed project.

Connection and tapping fees have the greatest financial impact on residents of existing homes. Unlike new residential development, where the connection and tapping fee costs are included in total construction costs and financed accordingly, existing residents must pay these fees from their own resources or by securing a loan from a local bank. In addition to these fees, the residents must also pay the costs to extend a sewer lateral from the lateral stub provided to the point of interconnection with the building sewer.

6.5.5 Sources of Financing

After all sources of up-front revenue have been identified, a reasonable forecast of the amount of the project that must be financed can be determined. There are several alternatives for financing a public sewer project. Not all of these alternatives are equally suitable for application to the project. The choice of financing method varies from project to project, and is dependent upon the financial specifics of each situation and the amount to be borrowed. A summary of the various means of financing public sewer projects follows.

Pennsylvania Infrastructure Investment Authority (PENNVEST)

The PENNVEST program offers grants and below market interest financing for financing public sewer projects in the Commonwealth of Pennsylvania. The PENNVEST Authority may receive funds from the following sources:

1. State funds appropriated to the Municipality;

2. Federal funds appropriated to or granted to the State or Municipality; and

3. Proceeds from the sale of bonds.

PENNVEST is also required to establish a Water Pollution Control Revolving Fund, which is administered in accordance with the requirements of the Water Quality Act of 1987. PENNVEST's Board may also establish non-revolving funds and accounts. The monies deposited with PENNVEST as repayment of the principal and interest due on loans issued from the program are used to pay PENNVEST's indebtedness. The criteria considered by the PENNVEST Board when evaluating applications are summarized as follows:

1. The project's ability to improve the health, safety, welfare, or economic well-being of the citizens of the Commonwealth.

2. The project's ability to lead to an effective or complete solution to the problems of the system and bring it into compliance with state and federal regulations.

3. The cost-effectiveness of the proposed project when compared with other alternatives.

4. The consistency of the project with state and regional resource management and economic development plans.

5. Demonstration of the applicant's ability to operate and maintain the project in the proper manner.

6. The ability to promote consolidation of water and wastewater systems where consolidation would provide more effective service of the customers.

7. The availability of other sources of funds at reasonable rates to finance all or portions of the project.

During the preparation of this Plan, Cap Interest Rates for PENNVEST loans in Dauphin County were listed at 1.512% for years 1 to 5 and 2.063% for years 6 to 20 on the PENNVEST Website. This loan may cover the entire project costs or only a portion of the total costs at the discretion of PENNVEST, and based on community need. Applications are received, and funding granted four times per year.

PENNVEST financing offers several advantages in addition to below-market interest rates and possible grants. For example, PENNVEST funding is available to pay for engineering and planning costs prior to the completion of the final design under their advance loan procedure. Construction inspection costs are also eligible under the PENNVEST program. Participation in this program does, however, impose additional responsibilities upon the municipality. Good accounting and administrative procedures must be followed and the use of funds from this program is subject to audit at any time by the State Comptroller's office. Additionally, PENNVEST relies on DEP to evaluate the cost effectiveness of the proposed project and verify that PENNVEST funds are being utilized in the appropriate manner. DEP will conduct occasional site visits on PENNVEST's behalf and they also provide input to PENNVEST on whether or not to approve payment for changes made during construction.

In order for PENNVEST to maximize the use of its funds, public sewerage projects must meet federal requirements as well as state requirements since PENNVEST receives funds from the federal government to capitalize the Water Pollution Control Revolving Loan Fund. In addition to an approved Act 537 Plan, the following additional planning assessments and investigations must be completed (see Section 6.2):

1. Assessment of innovative and alternative technologies.

2. Investigation of open space and recreational opportunities in conjunction with the public sewer project.

3. Alternative evaluation that provides thorough justification for the selected alternative.

4. Environmental assessment to assure that the project complies with the Water Quality Act and will undergo a review in accordance with the National Environmental Policy Act (NEPA).

5. Public participation.

Other special requirements of the PENNVEST program include the following:

1. A value engineering review of all projects having an estimated treatment works construction cost exceeding $10 million to verify that the proposed work is cost-effective.

2. The applicant must have an adequate user charge system, sewer use ordinance, and financial capability. The applicant must demonstrate sufficient legal, institutional, managerial, and financial capability to construct, operate, and maintain the proposed project.

3. The applicant must comply with the federal Davis-Bacon Act regarding labor wage rates.

4. The applicant must comply with MBE/WBE/DBE affirmative action steps.

5. One (1) year after the completion of construction and the initiation of operation, the applicant must certify that the treatment facility meets all design specifications and effluent limitations stipulated in its operation permit.

To initiate a request for PENNVEST financial assistance, an application form must be completed. The information provided in this application would be the basis by which PENNVEST makes its decision on whether the project is eligible for funding.

The decision to seek PENNVEST funding must be analyzed on an individual basis depending on the terms and interest rate of the loan. If a decision is made to seek PENNVEST funding, the implementing party must be prepared to comply with the regulatory requirements that are inherent to the program. Delays in the application review and loan approval process are common and the documentation requirements are quite extensive.

Rural Utility Service (RUS) – U.S. Department of Agriculture

The R.U.S. Loan Program makes funding available for the development of water and waste disposal systems in rural areas and towns with populations not in excess of 10,000. The funds are available to public entities such as municipalities, counties, special-purpose districts, Indian tribes, and corporations not operated for profit. R.U.S. also guarantees water and waste disposal loans made by banks and other eligible lenders.

Three interest rates are used. They are set periodically based on an index of current market yields for municipal obligations. The rates are as follows:

1. The *Poverty Rate* interest rate applies when:

    a. The primary purpose of the loan is to upgrade existing facilities or construct new facilities required to meet applicable health or sanitary standards; <u>and</u>
    b. The median household income (MHI) of the service area is below the poverty line for a family of four or below 80 percent of the Statewide Nonmetropolitan MHI (SNMHI).

2. The *Market Rate* is set quarterly based on the average of the “Bond Buyer” 1-Bond Index over a four week period prior to the beginning of the quarter. It applies to loans for projects where the MHI of the service area exceeds the SNMHI.

3. The *Intermediate Rate* is the poverty rate plus half of the difference between the poverty rate and the market rate, but not to exceed 7 percent. It applies to loans that do not meet the criteria for either the poverty rate or the market rate.

The law authorizing the R.U.S. program allows a maximum repayment period of 40 years. However, the repayment period cannot exceed the useful life of the facilities financed or any statutory limitation on the applicants borrowing authority.

To initiate a request for R.U.S. financial assistance, an application form must be completed and filed with the USDA Rural Development office serving the applicant’s area. The information provided in this application would be the basis by which R.U.S. makes its decision on whether the project is eligible for funding.

Municipal Bond Issue

There are several types of bonds, some are taxable and some are tax-exempt. The general classification of municipal bonds usually refers to tax-exempt bonds. There are three (3) types of municipal bonds generally used to finance public works projects:

1. *General Obligation Bonds* are tax-free bonds that are secured by the pledge of the full faith, credit, and taxing power of the issuing municipality. This means that this type of bond is backed by all of the taxes on real estate and personal property within the jurisdiction of the issuing municipality. It involves minimum risk to the investor and, therefore, can be issued at a lower rate of interest than other types of bonds.

2. *Dedicated Tax Bonds* are payable only from the proceeds from a special tax and they are not guaranteed by the full faith, credit, and taxing power of the issuing agency. An example of a special dedicated tax is the special assessment against property, which is adjacent to, and the principal beneficiary of the improvement. The gasoline tax used to finance highway construction is another example.

3. *Revenue Bonds* are payable from revenues derived from the use of the improvement such as tolls, sewer bills, or rent paid by users of the improvement and do not otherwise represent an obligation of the issuing municipality. Revenue Bonds are not ordinarily subject to statutory or constitutional debt limitations. They are often issued by commissions, authorities, and other public agencies created for the specific purpose of financing, constructing, and operating essential public projects.

Typically, municipal bonds are sold to an investment-banking firm, which then resells the bonds to individual investors. The advantage of municipal bonds to the investor is their tax-free status. A bond discount (a percentage of the total bond issue) serves as the investment banker's commission. Before bonds are sold, they must be rated on the basis of the risk to the investor by a rating agency such as Standard and Poor's or Moody's. The higher the rating, the lower the risk to the investor and, consequently, the lower the interest rate that must be paid on the bond. The legal instrument that sets forth the rules that must be observed by the issuing agency is the Trust Indenture. The Trust Indenture is prepared by the Bond Counsel and must be printed along with the bonds. Due to specific requirements as to the denominations of the bonds and the methods and materials used to print the bonds and Trust Indenture, the printing costs can be substantial. A Trustee is required to administer the bond issue and ensure the terms of the Trust Indenture are observed. For these services, the Authority will incur an annual Trustee fee.

Interest rates on bond issues vary depending upon market trends, the rating of the issuing agency, and other factors. The longer the repayment period is extended the lower the annual debt service and the higher the total amount of interest that must be paid.

A municipal bond issue offers the advantage of long-term fixed rate financing and the opportunity for local investment. The financing arrangement and approval period is shorter than what it is with the PENNVEST program and Halifax Township or HAWASA would retain more flexibility for future borrowing. The disadvantage of a municipal bond issue is that the interest rates are often higher than the maximum PENNVEST interest rates. Since there are no grants involved, the cost of the bond issue is 100% locally funded. The additional costs incurred to prepare the Trust Indenture, pay the Trustee Fees, fund the cover percentage, and to establish a Debt Service Reserve Fund must also be considered. The financial services costs associated with the issuance of a municipal bond issue are also much higher than the costs for PENNVEST funding.

Bank Loan

Because of favorable interest rates, bank loans can be a viable source for funding small to medium sized public works projects. As a general rule, they are not available for projects $10 million or greater, and the attractiveness of the terms of the loan may vary depending upon the bank and the amount of money to be borrowed. The interest rate available from banks varies depending upon market conditions; however, the rate available to municipalities will generally be at a discount due to the tax advantages received by the bank. Terms and conditions of bank loans vary in a manner similar to personal loans and home mortgages.

The principle advantage of a bank loan is that it can usually be obtained at a favorable interest rate without the cumbersome requirements of a bond issue. The financial service costs associated with obtaining the loan are also much less than for a similar bond issue. Since these financial service costs are generally included in the total project costs, the impact of these charges on the overall project costs can be minimized. Another advantage of the bank loan is that it does not have restrictive coverage requirements, trustee fees, and Trust Indenture preparation charges, as does a bond issue.

6.5.6 Funding Considerations

The funding options available to finance the proposed structural alternative been briefly examined in this chapter; however, Halifax Township and HAWASA should involve their solicitors and financial advisor(s) to determine the most viable method of financing the project.

6.6 PHASED IMPLEMENTATION

The recommended alternative should be completed in multiple phases in order to maximize funding grant opportunities and minimize the financial impact to the small user base.

6.7 ADMINISTRATIVE ORGANIZATION AND LEGAL AUTHORITY FOR IMPLEMENTATION

The implementation of the alternatives identified in this Act 537 Plan will require administrative organization(s) that can incur indebtedness on behalf of the project, can guide the project to completion, and provide the necessary operation and maintenance to the project. HAWASA is recommended as the agency to provide funding for and to implement the proposed alternatives. A detailed institutional evaluation of the Halifax Township and HAWASA is provided in Chapter 7.