

4.0 IMPLEMENTATION EVALUATION

4.1 IMPLEMENTATION SCHEDULE

The Act 537 Plan will be implemented in various stages. Prior to implementation of any construction projects, the Township will require approval of the overall Act 537 Plan Revision. Once the Act 537 Plan Revision has been approved, the Township will be able to begin implementation of projects to meet the wastewater needs as outlined in this study.

4.1.1 Act 537 Plan Revision

The following schedule will be used to implement the Act 537 planning phase of the project:

	Months from Start
Submit draft Act 537 Plan Revision to PADEP for Review and Comment	0
Receive initial comments from PADEP	3
Adopt Act 537 Plan Revision by Township	4
Submit Final Act 537 Plan Revision to PADEP	5
Receive PADEP Approval of Act 537 Revision	6

Upon receipt of approval of the Act 537 Plan Revision, the Township will be able to proceed with implementing the various construction projects associated with meeting the wastewater treatment needs of the Township.

4.1.2 Implementation of Sewer Alternatives

4.1.2.1 Construction of Sewers Servicing The Leibert Creek Basin (Alternate #4)

Construction of sewers servicing the Leibert Creek Basin have been divided into two categories: The Vera Cruz Project Area, which will address an identified immediate need for public sewer service, and The Remaining Leibert Creek Basin Areas, which will be implemented in the future if a need is identified.

Vera Cruz Project Area: This project will include the construction of gravity collector systems, low-pressure systems in areas where gravity service is not feasible, two pumping stations and associated force mains to provide public sewer service to the ~284 properties within the project area. The sanitary sewer infrastructure will be constructed as necessary to meet the estimated future wastewater needs in their specific service area.

The implementation schedule for construction of the public sanitary sewer infrastructure to provide service to Vera Cruz Project area is as follows:

Phase of Project	Months from Start
Approval of Act 537 Plan Revision	0
Conduct Project Area Resident Surveys	4
Submit Plans and Specifications of the pumping stations and low-pressure area systems for PADEP Review	11
Submit PADEP GP-5 Permit Application regarding stream crossings and wetland encroachment	11
Obtain PADEP Part II Construction Permits	14
Submit Project for Bids	16
Award Contract	18
Start Construction	20
Complete Construction	32

We have assumed that PADEP, PennDOT and Lehigh County Conservation District will provide a timely review and issuance of necessary permits and that PHMC archaeological survey requirements can be accomplished in a reasonable time frame. Also, construction may be delayed due to unforeseen issues associated with the environmental permitting.

It should be noted, that each of the collection systems within this project area would service less than 250 units. Therefore, PADEP Part II Water Quality permits will not be required for the overall collection system. However, a PADEP Part II permit may be required for certain portion of the collection system that utilizes a low-pressure collection system with more than five (5) grinder pump units.

The Remaining Leibert Creek Basin Areas: The following collection system service areas in the Leibert Creek Basin will continue utilizing on-site systems for the near future:

- The remaining areas of the PSA-3 and PSA-4 that are not part of the Vera Cruz Project Area.
- Saucon Creek Basin area bounded by Bunner and Limeport Roads (PSA-1)
- The area adjacent to Jasper Road between Main Road East and Shimerville Road (PSA-5)
- The area adjacent to Main St. East and Shimerville road between Chestnut St. (PA Route 29) and Milford and Beck Roads (PSA-6)

The users in these areas will become part of the septic management district. If it is determined that on-site systems are no longer operating properly in a specific area, construction of sanitary sewers will be considered. Since each of these collection system service areas will service less than 250 units, no PADEP Part II permits will be required to install sanitary sewers.

4.1.2.2 Construction of Sewers on 7th Street Extension

Public sewer service to this area will be provided via a “public sewer project” and is currently being addressed separately with the applicable PADEP *Sewage Planning Module for a Minor Act 537 Plan Revision*.

4.1.2.3 Construction of Sewers on Golf Circle

Public sewer service to this area will be provided in part by developer-installed extensions and/or if a future need is identified by a “public sewer project”, both cases will be addressed with the applicable PADEP *Sewage Planning Modules*.

4.1.2.4 Construction of Future Sewers in the Remaining Areas of Township

Construction of sanitary sewers in the remaining portions of the Township will be considered on an as needed basis. These areas include portions of the Township associated with the following Alternatives that will not be serviced initially:

Alternative #8 - Area adjacent to South 5th St (PSA-13)

Alternative #9 - Indian Creek Area adjacent to St. Peters Rd west of Chestnut St. (PA Route 29) (PSA-7)

Alternative #10 - Hosensack Creek Area including Church View Road area (PSA-8), Old Zionsville area (PSA-9), and Zionsville area (PSA-10)

Alternative #11 - Swabia Creek basin area adjacent to Chestnut St., Mill Road, Tank Farm Road, and Rose Drive (PSA-11)

Based on the data generated in this study, there are presently no other immediate wastewater needs in the Township requiring installation of sanitary sewers in these areas. It is expected that sewer construction in these areas will be a direct result of either subdivision activity or documented future failures of on-site treatment systems. In these cases, the developers associated with the respective subdivisions will be responsible for installation of necessary collector sewers.

4.1.3 Septic Management District

The following schedule will be used to implement the septic management district:

	Months from Start
PADEP Approval of Act 537 Plan Revision	0
Develop permits and other administrative forms and procedures	9
Adopt Septic Management District Ordinance	12
Apply for PADEP Certification	12
PADEP On-site Program Review	14
Prepare Modifications per PADEP Comments	16
Obtain PADEP Approval of District	18

In addition, the results of the needs survey identified several on-site systems that may need repairs to correct potential malfunctions. These systems were located in proposed sewer service areas. However, the number of potential or confirmed malfunctions and their relative severity indicated that sanitary sewer service could not be justified at this time. In most cases, the identified potential and confirmed malfunctions were dispersed throughout the various Study Areas.

Therefore, initiation of repair of any confirmed malfunctioning on-site systems will be addressed on a case-by-case basis within six months of the approval of the Act 537 Plan Revision. This initial step will consist of issuance of a written notice of violation to the effected homeowner. It is anticipated that the implementation process associated with any necessary repairs will be made as part of the management functions associated with the overall septic management district within the Township. Furthermore, it is anticipated that periodic surveys of on-site systems conducted, as part of the implementation of the septic management district will continue to identify potential malfunctions in the future. These potential malfunctions will be addressed in a similar manner. This information will then be used by the Township SEO to determine if other actions may be required in the future to address any on-going problems with potential malfunctioning systems.

4.2 INSTITUTIONAL REQUIREMENTS

4.2.1 Sewer Service Areas

4.2.1.1 Institutional Responsibilities

The existing wastewater facilities are the responsibility of the following local agencies:

Upper Milford Township –The Township in accordance with their agreement Lehigh County Authority (LCA) has requested that LCA assume the responsibility for designing, constructing, owning and operating all proposed public sewer systems set forth in this plan. The Township will be responsible for adopting all appropriate ordinances requiring abutting property owners to connect to said sewer and pay any charges levied by LCA. The Township is also responsible for ACT 537 Planning.

Lehigh County Authority (LCA) – The LCA is the wastewater service provider in Upper Milford Township. LCA currently owns and operates the existing collection and interceptor sanitary sewers in Upper Milford Township and the Western Lehigh Interceptor and it's associated relief facilities that convey the wastewater to the City of Allentown for treatment. LCA is the permittee for these facilities.

Borough of Emmaus (Borough) – The Borough owns and operates existing collection sanitary sewers that provide conveyance capacity between sewers servicing service a portion in Upper Milford Township and LCA's Western Lehigh Interceptor. They are the permittee for their facilities.

City of Allentown (City) – The City owns and operates existing interceptor sanitary sewers and wastewater treatment facilities utilized by LCA. LCA conveys wastewater to the City's facility for final conveyance, treatment, and disposal. They are the permittee for their facilities.

4.2.1.2 Service Agreements

All necessary agreements are currently in place with the Township that designates LCA to own and operate all public wastewater facilities within the township. Therefore, implementation of any of the alternatives will not require any action to be taken by the Township at this time.

4.2.2 Sewage Management District

The Township is currently implementing a limited sewage management program under current PADEP regulations. However, several additional institutional actions must be taken by the Township to upgrade the existing program into a full sewage management district. These actions include:

Adoption of a Township Ordinance establishing the sewage management district

Development of permits forms, and other administrative tools required for implementing the program

Once the administrative program is in place, the Township staff will be required to permit all septic haulers wishing to continue to provide services in the Township. Formal permits for these haulers will also have to be developed.

VERA CRUZ PROJECT AREA FINANCIAL INFORMATION

4.3.1 Cost Estimate Assumptions

The information presented in this section are estimates and are subject to change prior to the adoption by the Township of the required ordinances that would authorize the Project and establish the property assessments and tapping fees.

4.3.1.1 Financing

A conservative interest rate of 5-percent per annum has been assumed for the project costs that will be financed to reduce the property owner's up-front costs for the public facilities. However, it is our intention to pursue the lowest cost financing, such as Penn Vest to further reduce the overall cost impact on property owners.

4.3.1.2 Other

All other cost estimates were based upon the current construction market; regulatory and PADOT requirements; applicable LCA non-project capacity tapping fees and certain assumptions regarding property assessments; and project tapping fees.

4.3.2 Project Cost & Cost Recovery

Public facility project cost for a gravity system, including the purchase of wastewater capacity is estimated at \$7,245,060. The project will be funded by a combination of grant(s), municipal contributions, property assessment, capacity tapping fees and financing.

4.3.2.1 Grant(s) and Municipal Contributions

The Township has secured an EPA grant in the net amount of approximately \$962,000 for Township sewer projects, it is envisioned that approximately \$924,000 of this grant will be applied to the Vera Cruz Project Area. LCA will contribute \$310,000 to the project or \$1,000.00 per Equivalent Dwelling Unit (Edu), based upon an ultimate build-out of 310 Edus. In addition, LCA has waived the standard UMiT capacity tapping fees, an estimated value of \$618,450 that has been excluded from estimated \$7,245,060 project cost.

**Table 4-1
Project Funding**

Item	Amount
<u>Conceptual Project Costs</u>	
New Public Facility Cost	\$ 6,747,200
Allocation Cost	497,860
Total Conceptual Project Cost	\$ 7,245,060
<u>Less Estimated Credits</u>	
Vera Cruz Share of EPA Grant	\$ (924,136)
LCA Contribution	(310,000)
Property Assessments	(310,843)
Project Capacity Tapping Fees	(509,640)
Non-project Capacity Tapping Fees	(497,600)
Total Estimated Credits	\$ (2,552,219)
Net to be Financed	\$ 4,692,841
<u>Financing Apportionment</u>	
Amount apportioned to UMiT Common Rate Charge	\$ 1,240,000
Amount apportioned to Vera Cruz Project Charge	3,452,841
Total Financing	\$ 4,692,841

4.3.2.2 Mandatory Connection Requirement

In accordance with the §67502(a) of the Second Class Township Code all properties that are adjoining or adjacent to or whose principal building is within one hundred and fifty feet (150') from the sanitary sewer will be required to connect.

4.3.2.3 Property Owner One-time Up-front Costs

All properties within the project area will pay all or some portion of the one-time up-front costs. Typically, they will incur two separate types of one-time up-front costs; Public Facility Fees to pay for their share the public sewer facilities; and Private Plumbing Costs, to pay the plumbing contractor they hire to connect their property to the public facilities and abandon existing facilities.

4.3.2.4 Public Facility Fees

Public facility fees are composed of three parts:

1. Benefit Property Assessment: Reflects the amount of benefit that the property received because of the availability of public sewer. The estimated assessment amount for each property will vary, ranging from a low of approximately \$40 to a high of \$18,000. All properties within the project area, except those exempted by law will pay this fee.

Table 4-2
Property Assessment Estimates

Example	Approximate Assessment
Median Cost	\$ 430
Average Cost	\$ 1,110
1/4 Acre Lot	\$ 195
1 Acre Lot	\$ 770
2 Acre Lot	\$ 1,535
4.5 Acre Lot	\$ 3,450
10 Acre Lot	\$ 7,670

2. Project Tapping Fee: Purchases capacity in the Project Area facilities. This fee is estimated at \$1,644 per Edu. Only properties that are required to connect to the public sewer will pay this fee.

3. Non-project Capacity Tapping Fees: Purchases capacity in sewer facilities outside the Project Area that convey and treat the sewage from a project area property. These fees are as follows:

**Table 4-3
Components of the
Non-project Capacity Tapping Fee**

Component	Cost per/Edu
Wastewater Treatment Capacity	\$ 884
Western Lehigh Interceptor Capacity	\$ 603
Little Lehigh Relief Interceptor Capacity	\$ 119
Total Non-project Capacity Tapping Fee	\$ 1,606

The total of these fees are estimated at \$1,606 per Edu. Only properties that are required to connect to the public sewer will pay this fee.

**Table 4-4
Tapping Fees Examples**

Example	# of Edus	Tapping Fee		
		Project \$	Non-Project \$	Total for Example \$
Single family residence	1	\$ 1,644	\$ 1,606	\$ 3,250
Apartment building with four units	4	\$ 6,576	\$ 6,424	\$ 13,000
Duplex / Twin on one property	2	\$ 3,288	\$ 3,212	\$ 6,500
Single family residence with one apartment unit on the property	2	\$ 3,288	\$ 3,212	\$ 6,500
Commercial building assigned 2 Edus.	2	\$ 3,288	\$ 3,212	\$ 6,500

Note: Commercial establishments will vary dependent upon the number of Edu's that are assigned to the property.

4.3.2.5 Private Plumbing Costs

Property owners will be required to hire a plumbing contractor to physically connect their structure to the public sewer system lateral, modify interior plumbing as necessary, pump out and fill in the existing septic tank and abandon any existing sewage facilities. Commercial property owners will be required to install a water meter on their well water supply and if applicable, grease trap. These costs will vary depending upon the distance from the public facilities and the complexity of the installation, estimates range from \$3,000 to \$5,000, the typical property being approximately \$3,500.

4.3.2.6 Examples of Property Owner One-time Up-front Costs

**Table 4-5
Estimated One-time Up-front Costs**

Example			Public Facility Fees		Private Plumbing (Typical)	Total
Description	Lot Size (acre)	# of Edus	Property Assessment	Tapping Fees		
Single family residence	0.25	1	\$ 195	\$ 3,250	\$ 3,500	\$ 6,945
Single family residence	2.00	1	\$ 1,535	\$ 3,250	\$ 3,500	\$ 8,285
Single family residence	10.00	1	\$ 7,670	\$ 3,250	\$ 3,500	\$ 14,420
Apartment building with four units	4.50	4	\$ 3,450	\$ 13,000	\$ 3,500	\$ 19,950
Duplex / Twin on one property	1.50	2	\$ 1,150	\$ 6,500	\$ 3,500	\$ 11,150
Single family residence with one apartment unit on the property	1.00	2	\$ 770	\$ 6,500	\$ 3,500	\$ 10,770
Commercial building assigned 2 Edus	3.50	2	\$ 2,700	\$ 6,500	\$ 3,500	\$ 12,700
Vacant Lot	5.00	0	\$ 3,835	\$ -	\$ -	\$ 3,835

(1) Private Plumbing costs are estimated between \$3,000 and \$5,000, with the typical property being approximately \$3,500 in the calculation of the Table 4.4 estimates.

4.4 User Charges

The residents of the Vera Cruz Project Area will be paying the majority of the costs associated with the project, avoiding subsidization by other existing township customers that have been paying their share of the existing sewer system costs for many years.

It is estimated that properties within the Vera Project Area that connect to the sewer system will pay an annual user charge of \$1,378 per Edu. The charge will be composed of two parts, the then current Upper Milford Common Rate charge, currently \$451 plus a Vera Cruz Project surcharge estimated to be \$ 927.

**Table 4-6
Estimated Annual User Charges**

Example	# of Edus	Component		Estimated Annual User Charge
		UMiT Common	Project Surcharge	
Single family residence	1	451	927	\$ 1,378
Apartment building with four units	4	1804	3708	\$ 5,512
Duplex / Twin on one property	2	902	1854	\$ 2,756
Single family residence with one apartment unit on the property	2	902	1854	\$ 2,756
Commercial building assigned 2 Edus	2	902	1854	\$ 2,756

On-Lot Grinder Pump Units

Because of the project area topography some properties may require an on-lot sewage grinder pump unit to pump sewage from the home or business establishment upgrade into the public system. At this time, it is envisioned that grinder pump units will be incorporated into the project cost, and when required, will be provided to the property owner for installation by their plumbing contractor.

4.5.1 Ownership, Owners Responsibilities and Associated Costs

The on-lot sewage grinder pump unit will be owned and maintained by the property owner. The property owner, by township ordinance will be required to enter in to an annual Maintenance Agreement with a private company that has been given special training by the manufacture of the grinder pump unit. The cost of the annual maintenance agreement is estimated to be approximately \$125. In addition, property owners can expect to pay approximately \$30 annually in electrical power costs to operate the grinder pump unit.

4.6 Additional Funding

Various types of additional funding are being sought to reduce the overall financial impact on the property owners and include Lehigh County Community Block Grants (CDBG), and other Federal and/or state funding sources that are available.

In addition, the Township will provide information to the residents and/or coordinate a meeting place where representatives from the United States Department of Agriculture (USDA) can discuss their individual grant and loan programs with the property owners

4.6.1 Property Owner Surveys

Within 4 months after ACT 537 approval by DEP, the applicable survey(s) will be conducted to determine the eligibility and/or terms for any grants and/or special financing that may be available from Penn Vest and CDBG. The residents of the project area will be encouraged to respond to these survey(s).