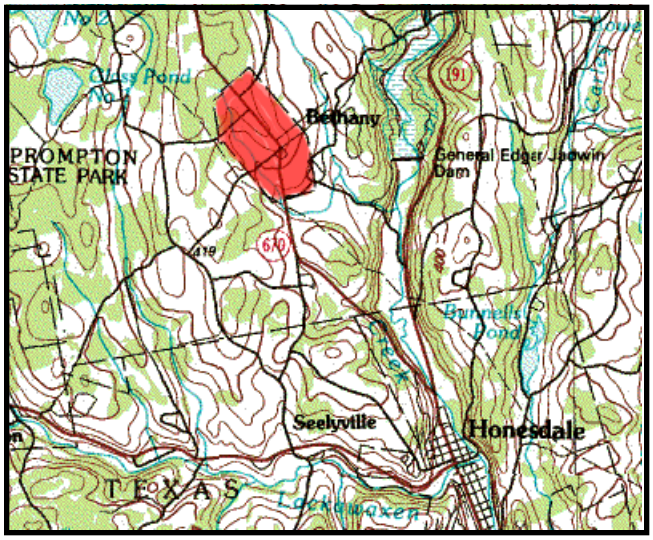
Bethany Borough

Wayne County, Pennsylvania

Official Wastewater Facilities Plan - 2002



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and Knash Engineering

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Bethany Borough, Wayne County
Official Wastewater Facilities Plan - 2002

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Plan Summary

A. Service Areas and Problem Areas Evaluated

Bethany Borough has been organized into five subareas for purposes of sewage planning. These are as follows:

- Area No. 1 represents Bethany Lake Village and nearby areas.

- Areas No. 2 and No. 3 represent the two core areas of the Borough, Area No. 2 being the one draining generally in a easterly direction and Area No. 3 draining generally in a westerly direction. They are split by Route 670 and could also be combined from a service perspective.

- Area No. 4 also drains in a westerly direction and encompasses the area along Sugar Street that was built up during the 1950's through the 1970's.

- Area No. 5 includes the Bethany Center project, related facilities such as the "Mansion" and immediately adjacent areas of the Borough, such as the houses adjoining the triangle formed by Wayne and Old Wayne Streets.

A sewage needs survey encompassing each of these areas was conducted in 2001. Some 37 of 106 systems (35%) in Borough were surveyed. These represented 80 of an estimated 150 EDU's (53%) in Borough. None of the Borough on-lot systems surveyed were found to be located in suitable soils for that purpose. There was evidence that 11 of 37 systems (30%) were malfunctioning and that 7 of 37 systems (19%) might be malfunctioning. Only 19 of 37 systems (51%) were functioning properly. The survey found that 54 of 80 EDU's (67%) were served by malfunctioning systems and 7 of 80 EDU's (9%) appeared that they might be malfunctioning. Only 19 of 80 EDU's (24%) were functioning properly. Areas No. 1 and 5 showed the highest malfunction levels with Area No. 4 also a problem. There, were, however, malfunctions throughout the Borough.

B. Alternatives Examined

Two technically feasible alternatives exist to deal with Bethany Borough's sewage disposal needs; 1) collection and conveyance to the Honesdale Borough sewer system, and 2) a sewage management program to upgrade the condition of existing on-lot systems. Neither presents any conflicts with other planning or any

inconsistencies that need to be resolved. However, Honesdale Borough will have to make progress on its Chapter 94 Plan to reduce its hydraulic loads before it will be able to accept Bethany Borough's sewage. There will also have to be negotiation of connection and user fees that are acceptable to Honesdale Borough and economically feasible for Bethany Borough. Honesdale Borough has previously agreed to accept 124 Bethany connections with an anticipated connection fee of $3,000.

C. Estimated Costs and Proposed Funding

Only the Honesdale connection alternative involves significant new construction to meet the sewage needs of the Borough in the next five years. Two variations of the alternative are possible: 1) a combined gravity and pressure sewer system, and 2) a low pressure system linked to Honesdale through a force main. The capital costs of both options are approximately $2.2 million. Only one financing option is feasible, that being a USDA grant of 75% of the cost, combined with a 30 or 40 year loan at a discounted rate. This is the recommended capital financing plan.

User fees ranging from $618/year to $631/year are projected, depending upon the terms of financing. This is within the range of affordability and is cost-effective as a means of permanently addressing the sewage disposal needs of the Borough. There is no other technically feasible alternative that can provide a permanent solution. Therefore, along as it meets the affordability test (a maximum of $625/year) and assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others, the Honesdale connection alternative is cost-effective.

A Bethany Borough connection fee of $1,000 to $2,500 is also recommended (not to be confused with the connection fee charged by Honesdale Borough which is expected to be $5/gpd of capacity used).

D. Municipal Commitments Required

The Honesdale connection alternative will require an administrative authority to finance and build the system, collect connection and user fees and manage the operation and maintenance of the collection lines and pumps. This could be a separate municipal authority in the pattern of Cherry Ridge and Texas Townships or the Borough itself (which is how Honesdale Borough operates). An ordinance mandating connection to the system will also be required. The separate municipal authority is desirable given the borrowing and grant administration involved.

E. Schedule of Implementation

The following administrative and legal actions will be required to implement the recommended alternative of connecting to the Honesdale system:

Action	Target Date
Incorporate Bethany Municipal Authority	Jan-2003 to Feb-2003
Negotiate final arrangements with Honesdale Borough	Jan-2003 to Mar-2003
Arrange financing	Jan-2003 to Jun-2003
Design and bid	Mar-2003 to Sep-2003
Secure right-of-ways	Jul-2003 to Sep-2003
Enact connection ordinance	Jul-2003 to Aug-2003
Construction	Oct-2003 to Jun-2004

I. Previous Wastewater Planning

A. Existing Wastewater Planning

1. Previous Act 537 Plans

Bethany Borough's existing Act 537 Plan was adopted in 1985. It was prepared simultaneously with an update of surrounding Dyberry Township's Plan. It recommended a small-flow municipal treatment facility to serve the general Bethany area and an aggressive on-lot management program to serve less developed areas of the Borough and Township. It also stated that a municipal treatment system was not financially feasible without State and Federal funding. It was recommended the Borough Council pursue such funding for an engineering feasibility study.

2. Planning Not Implemented

The 1985 Act 537 Plan implementation schedule included seven specific actions. These are listed below along with a statement of action taken or not taken.

Recommended Implementation Step	Target Date	Action Taken
1 - Adopt revised Sewage Facilities Ordinance	1986	Not Implemented
2 - Initiate water testing/monitoring program	1986	Not implemented
3 - Update land use ordinances	1987	Completed - 1996
4 - Investigate identified malfunctions	1986	Completed - 1989
5 - Request funds for feasibility study	1985	Completed - 1990
6 - Designate service areas	N/A	Not implemented
7 - Fund and construct project	N/A	Not implemented

Actions 6 and 7 were linked to the results of the feasibility study. The Plan provided that the project would only proceed if the annual user fee was $250 or less and the required connection fee did not exceed an average of $500 per connection. The Feasibility Study was completed by Milnes Engineering in September, 1990. It concluded that connection with the Honesdale Borough sewer system was a better option than a small-flow facility for Bethany alone. However, Honesdale Borough Council notified Bethany

Borough that it would require a $3,000 connection fee and the feasibility study identified annual user costs ranging from $288 to $492, depending on the specific design and funding options chosen. Therefore, the project did not proceed.

3. Sewer Authority Planning

There are no existing sewer authorities with jurisdiction over Bethany Borough. Nonetheless, there have been proposals to use the Honesdale Borough system to treat Bethany Borough's sewage (see I-A-2 above). That system is the subject of a Chapter 94 Corrective Action Plan. This Plan generally limits Honesdale Borough's ability to accept additional loadings to its system to 60,000 gallons per day until such time as it has created additional capacity by expanding the system or removing stormwater and infiltration. A paraphrased summary of that Plan may be found in Section III-A-3 of this Plan.

4. Planning Modules

There has been only one major land development project involving sewage planning within the Borough since the 1985 Act 537 Plan was adopted. It is the Bethany Village Assisted Living Community (a/k/a Majestic Mountains, Inc.), a 100-bed project occupying a portion of the former Bethany Center/Bethany Colony property.

This property has been employed for a number of uses in the past, including a motel, restaurant, residential subdivision headquarters and related activities. It includes two major structures, the Mansion once used as a restaurant and the motel or residential building. Most recently it was used as a drug and alcohol treatment center. That operation closed and the current owners renovated the residential building for use as the assisted living facility in 1998. Part of this conversion project was the upgrading of the subsurface sewage disposal system serving this portion of the property.

The upgrading project replaced the original plans to install a package sewage treatment plant on site, the permit for this project and the associated stream discharge having expired. The Mansion sewage system was retrofitted to serve the assisted living project, which is located in a separate building, and the Mansion connections were severed, that building remaining unoccupied. New septic tanks and a dosing tank discharging the

estimated 6,160 gallons per day of effluent to the absorption area were installed. Two backup absorption areas suitable for elevated sand mounds were also identified and tested.

B. Municipal and County Planning

1. Land Use Plans and Zoning Maps

Bethany Borough does not have a Comprehensive Plan. It does have a Zoning Ordinance adopted in 1972 and updated in 1996. That Ordinance is of very simple construction, establishing three districts as follows:

H-1 Historical - Principal Uses are single family dwellings (excluding mobile homes), churches and similar places of worship. Conditional Uses are boarding and tourist homes, professional services and structural modifications to buildings. This District generally extends one lot deep on both sides of Route 670 (Wayne Street) from Beech Street to Old Wayne Street, including those lots on the southerly side of Old Wayne Street that backup to the Bethany Village Assisted Living Community property.

S-1 Special - Principal Uses are single family dwellings (including mobile homes). Conditional Uses are cluster development, multifamily dwellings, mobile home parks, commercial development, light industrial development, health facilities, shopping facilities, shopping centers and malls. Mobile home parks are required to have "public central sewage." This District is encompasses the Bethany Village Assisted Living Community property.

R-1 Residential - Principal Uses are single family dwellings (excluding mobile homes). Conditional Uses are limited to professional services. This District represents all of the remainder of the Borough.

2. Lot Size Standards Based on Sewage Disposal Methods

Minimum lot sizes and dimensions are set by the Bethany Borough Zoning Ordinance. There are no minimum lot sizes for either the H-1 Historical District or the S-1 Special District. "Further development is not contemplated" in the former and the latter is a large property expected to be developed as a planned unit project. The minimum development

standards for the R-1 Residential District are as follows:

Development Standard	Without Central Sewage	With Central Sewage
Minimum Lot Area	1 Acre	1/2 Acre
Minimum Average Width	150 Feet	100 Feet
Minimum Front Yard	40 Feet	35 Feet
Minimum Side/Rear Yards	25 Feet	15 Feet
Maximum Building Height	50 Feet	50 Feet
Maximum Lot Coverage	30%	50%

3. Limitations Based on Stormwater and Floodplain Planning

Flood hazard areas have been identified along the entire length of the Dyberry Creek tributary running through the Borough. No flood elevations have been established, however, and the width of the flood hazard is no more than 50-100 feet in all instances. The Borough enacted a Building Permit Ordinance (No. 50) that complies with the requirements of the National Flood Insurance Program in 1982. Only 2 to 3 houses appear to be located in areas that may be affected by flooding. These are, however, some of the systems with apparent or suspected malfunctions (see Section III-B-2).

The Borough is part of the Lackawaxen River watershed. A Stormwater Management Plan was prepared for the watershed in the early 1990's. A Borough Stormwater Management Ordinance was adopted using the model recommended as a result of the Plan. It establishes complex and comprehensive standards relating to stormwater management within the Borough. Exempted from those standards are single-family residences, activities involving less than 1/4 acre of impervious surface, agriculture and forestry. It does not appear this Ordinance has any particular impacts on sewage planning for the Borough.

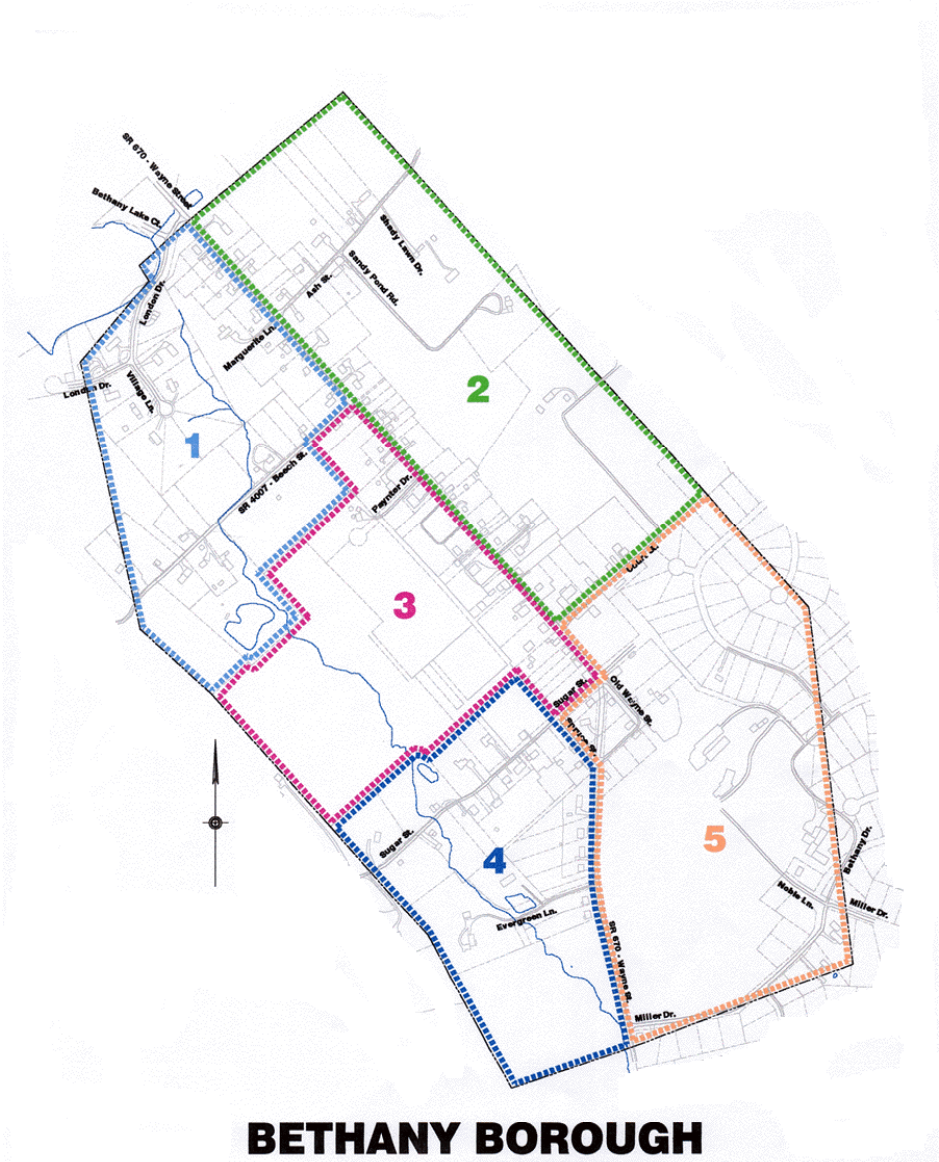
Special protection areas established within Bethany Borough under Chapter 93 of the Pennsylvania Department of Environmental Protection regulations include the unnamed tributary of Dyberry Creek that flows through the Borough from north to south along its western side. This tributary is, like most Wayne County streams, classified as one of the Commonwealth's High Quality Waters. It is also designated as; 1) a Cold Water Fishery

(CWF) suitable for the maintenance or propagation, or both, of fish species and additional flora and fauna indigenous to a cold water habitat, and 2) a Migratory Fishery (MF) suitable for the passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which ascend to flowing waters to complete their life cycle.

II. Physical Analysis

A. Identification of Planning Area

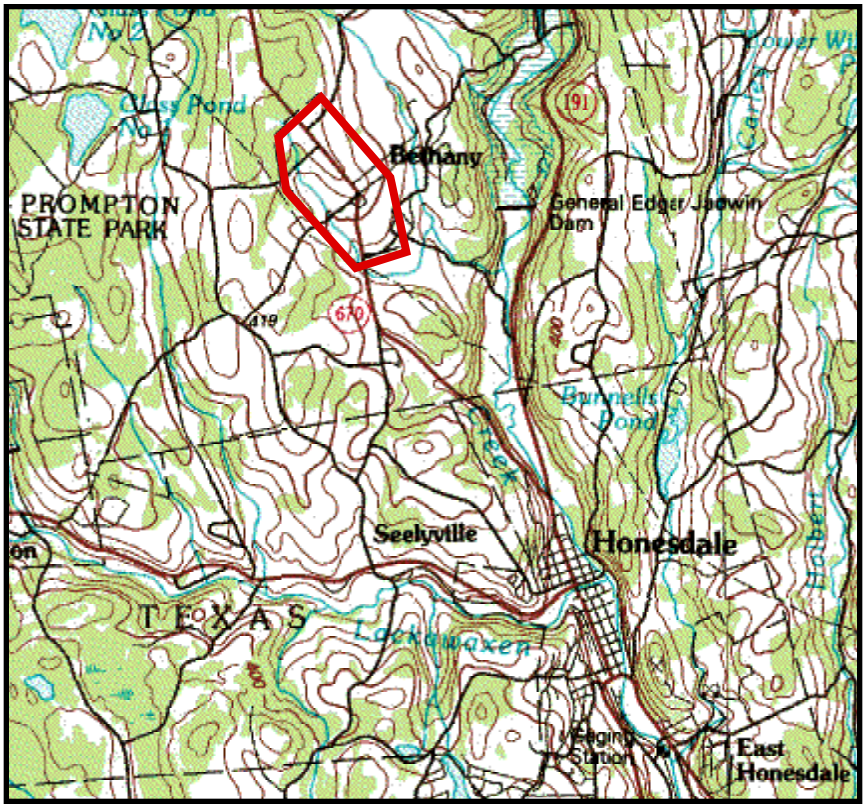
The planning area for this Plan is the Borough of Bethany. There are no sewer or management districts. A map depicting this planning area and five sub-planning areas for purposes of the sewage needs survey (see Section III-B-2) follows.



B. Physical Characteristics

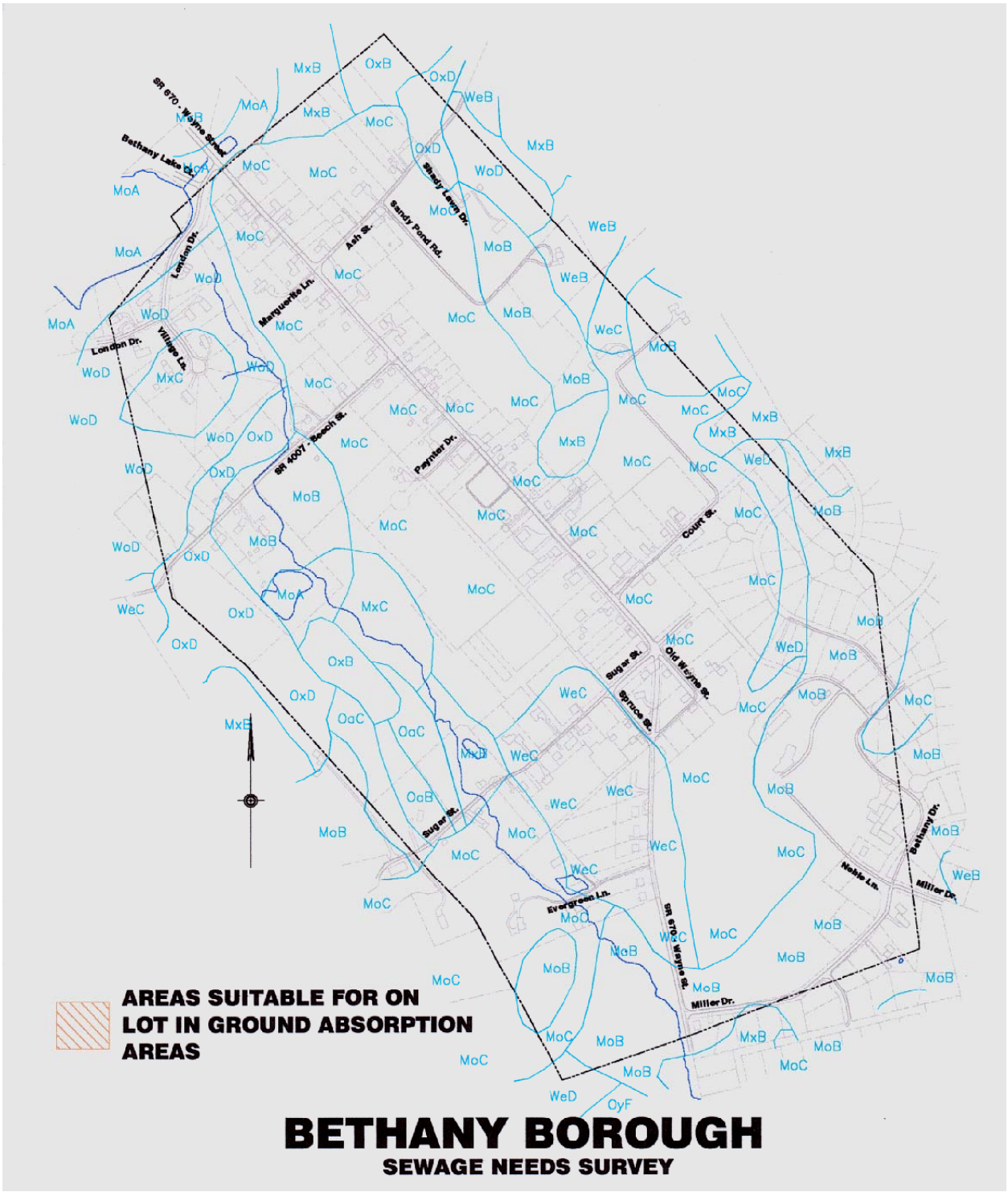
The above map illustrates the location of Bethany Borough's only significant natural feature, the unnamed tributary of the Dyberry Creek. The entire Borough drains into either of two branches of this tributary, one along the western side of the Borough and the other joining it from the east just south of the Borough in Dyberry Township. The Borough also borders Bethany Lake on the north. This is a small man-made water body that forms the central feature of Bethany Lake Village, a small subdivision that straddles both the Borough and the Township. The Bethany Borough portion encompasses 8 residences.

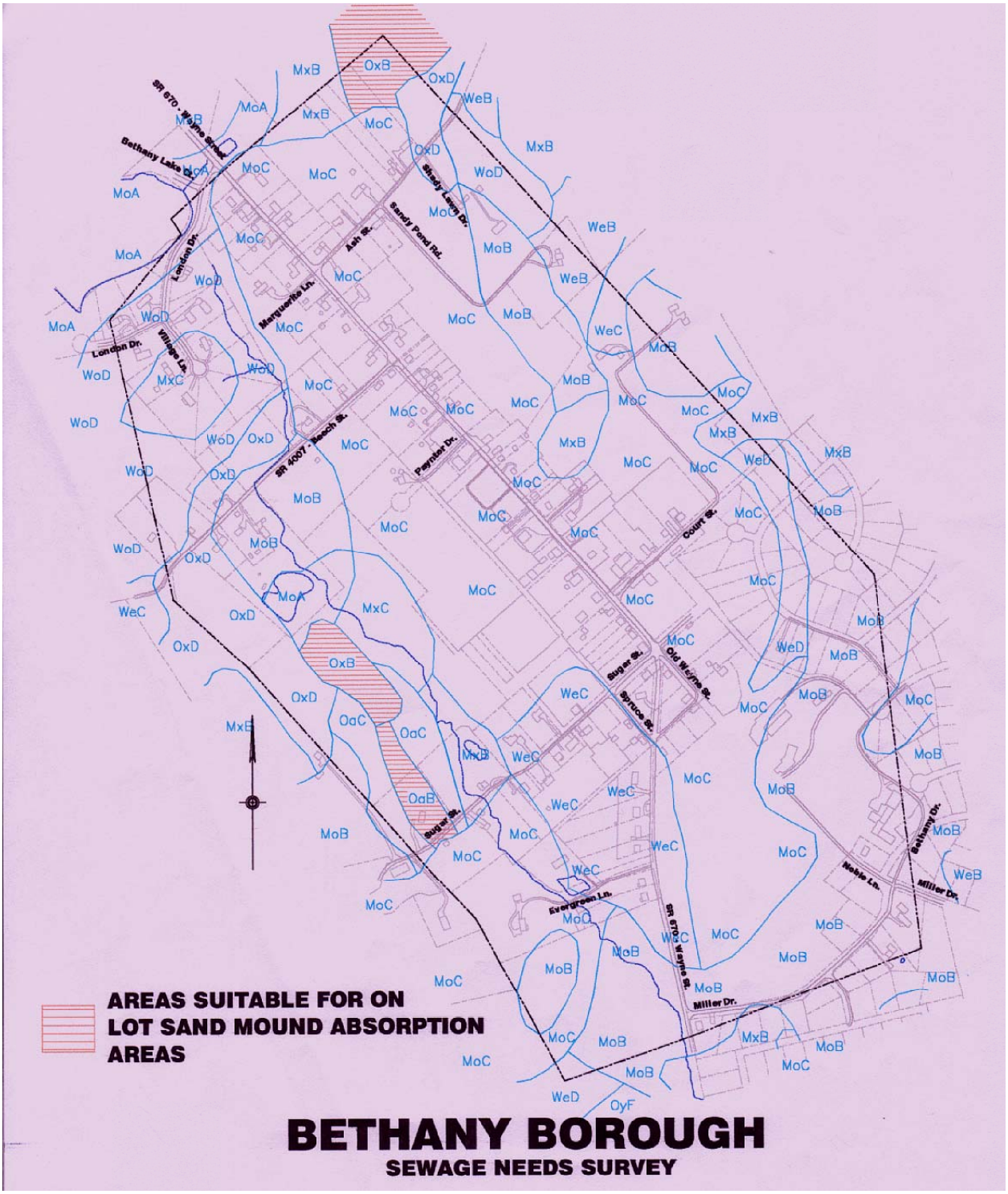
The map below illustrates Bethany's location relative to regional features, including the two Dyberry Creek tributary branches.



C. Soils Analysis

Maps of Bethany Borough soils by suitability for sewage disposal follow.


AREAS SUITABLE FOR ON LOT IN GROUND ABSORPTION AREAS
BETHANY BOROUGH
SEWAGE NEEDS SURVEY
SR 670 - Wayne Street
Bethany Lake Dr.
London Dr.
Village Ln.
Marguerite Ln.
Ash St.
Sandy Pond Rd.
Shady Lawn Dr.
SR 4007 - Beech St.
Paynter Dr.
Court St.
Sugar St.
Old Wayne St.
Spruce St.
Evergreen Ln.
SR 670 - Wayne St.
Miller Dr.
Noble Ln.
Bethany Dr.


AREAS SUITABLE FOR ON LOT SAND MOUND ABSORPTION AREAS
BETHANY BOROUGH
SEWAGE NEEDS SURVEY
SR 670 - Wayne Street
Bethany Lake Dr.
London Dr.
Village Ln.
Marguerite Ln.
Ash St.
Sandy Pond Rd.
Shady Lawn Dr.
SR 4007 - Beech St.
Paynter Dr.
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Evergreen Ln.
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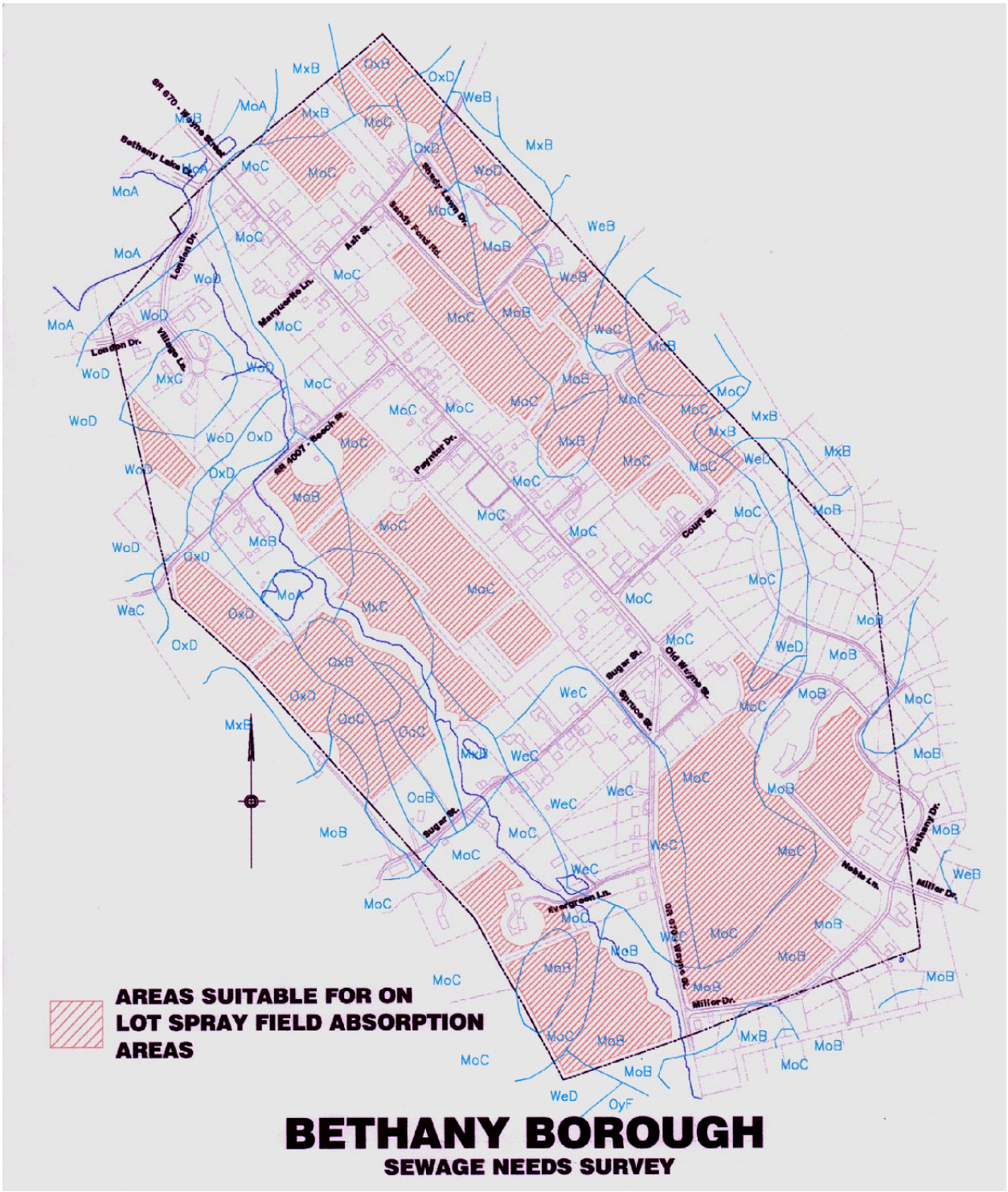
Miller Dr.
Noble Ln.
Bethany Dr.


AREAS SUITABLE FOR ON LOT SPRAY FIELD ABSORPTION AREAS
BETHANY BOROUGH
SEWAGE NEEDS SURVEY

The three soils maps all depict individual soils types. A classification of these soil types by on-lot system suitability criteria found in Department of Environmental Protection regulations follows:

1. Ponds, lakes and reservoirs and unusable areas that are unsuitable for any on-lot sewage disposal systems.

   FF ME Pt Qu

2. Soils with a typical depth to the seasonal high water table, bedrock, or other soils limiting factor of 20" to 72" and generally suitable for at least sand mound type systems.

MaB	LdA	LxB	OaB	SwB	SxB	WeC	WyB
MaC	LdB	LxC	OxB	SwC		WoB	WyC
MdB	LdC						WyD

3. Soils with slope limitations relative to other conditions and generally unsuitable for any type of on-lot systems.

MaD	LdD	OaC	OxD	SwD	SxD	WeD	WxF
MdD		OaD	OyF			WoD	WyE

4. Soils with a typical depth to bedrock of less than 20" and generally unsuitable for any type of on-lot systems.

   ArB RoD
   ArC
   ArD

5. Alluvial soils (floodplain) generally unsuitable for any type of on-lot systems.

   Ba Bh Ho

6. Soils with a typical depth to the seasonal high water table or other limiting factor of less than 20" and generally unsuitable for any on-lot systems.

MoA	MxB	NcA	Re	VoA	VxB	WeB
MoB	MxC	NxA		VoB		WeC
MoC				VoC		

All of Bethany Borough now depends on on-lot systems. Most of the systems installed in recent years are sand mounds and older systems are standard in-ground designs or cesspools. An overall review of the above maps indicates Bethany Borough has very few soils suitable for on-lot sewage disposal, no more than 5-10% of the total land area at best, and no soils suitable for standard in-ground systems.

Soil suitability for spray irrigation is less a function of soil suitability than maximum spray rates, minimum setback requirements and the amount of land required for disposal based on those rates. The resulting minimum land areas required for spray irrigating the effluent from individual residences establish which lots or blocks of open land are potentially suitable locations for this method of disposal. Approximately 40-50% of the Borough land area appears to be suitable for this method of disposal. However, with the exception of the Bethany Village Assisted Living Community, these land areas are generally not owned by the individuals with the sewage disposal problems identified in Section III-B-2 of this Plan. The Village had considered spray irrigation of their golf course property but found that it wasn't cost-effective or feasible from an operational standpoint given setback and related issues.

There are no active farms, significant areas of farmland, prime agricultural soils or locally protected agricultural soils within the Borough of Bethany. The entire Borough is only slightly over 400 acres in size and has no available land for major farming operations.

D. Geologic Features

Bethany Borough is part of the glaciated low plateau section of the Appalachian Plateaus Province. The single geologic formation within the Borough is the Devonian Catskill Formation which includes sandstones, shale and conglomerates, the first of these being the most important water producers. Wells ending in Catskill sandstone and conglomerate generally produce good quality water in moderate supplies.

A State Water Plan (source for this data) survey of 211 wells in the Catskill Group throughout Northeastern Pennsylvania indicated a typical depth of 147 feet with a median yield of 15 gpm. The water tends to be very soft and low in dissolved mineral matter, indicating few capacity problems with little evidence of geologic features associated with Nitrate-Nitrogen pollution. However, the glacial

formation characteristics of the rock overlying the sandstone bedrock can be porous or highly permeable. This can, in some instances, lead to contamination problems for shallow aquifers from nitrate-nitrogen pollution and pathogenic bacteria.

E. Topography

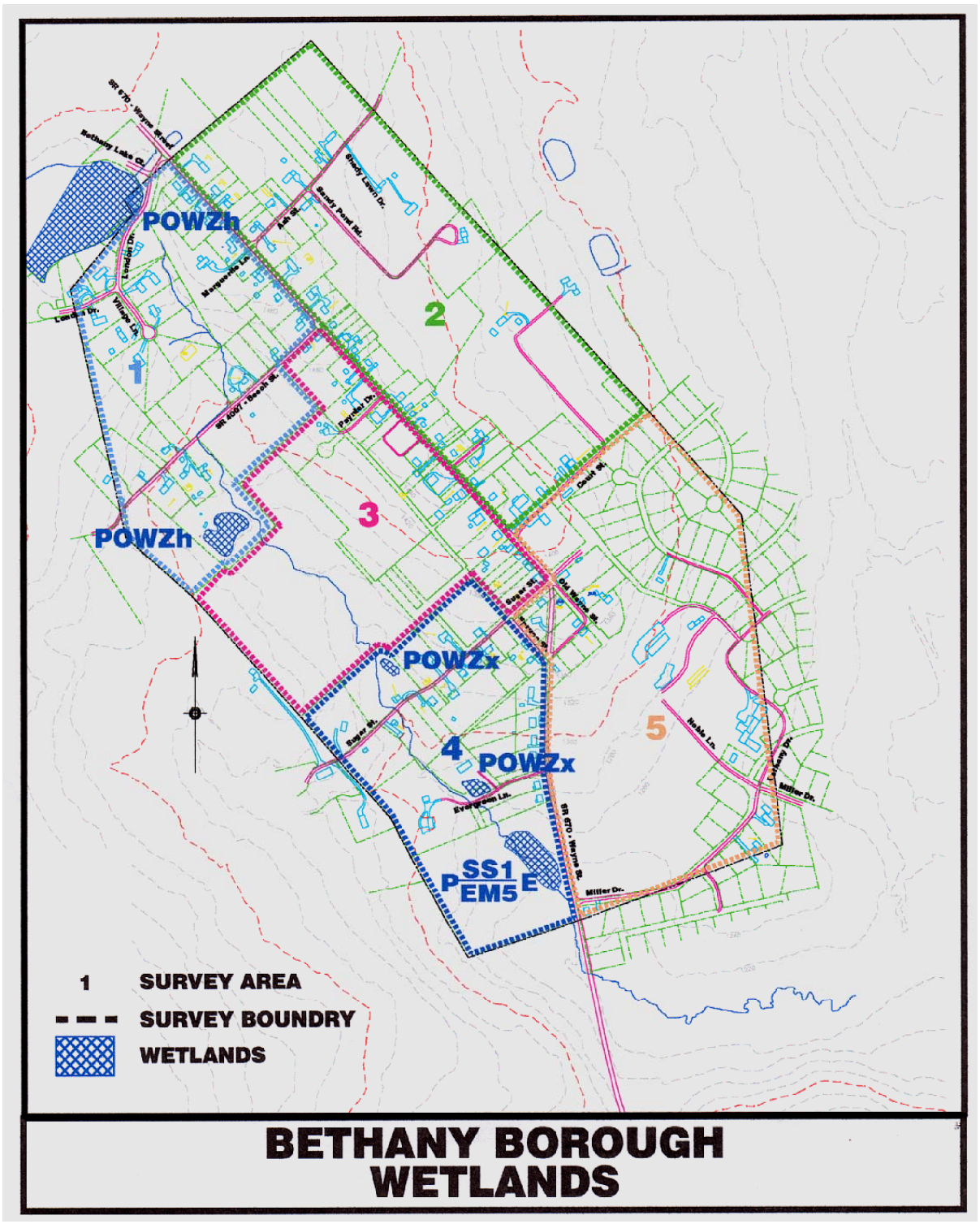
The soils and topographic maps found above illustrate slope limitations for sewage disposal. There are relatively few slope-limited soils within the Borough. Bethany is located on a hill top and most of the steep areas are found on the downslopes along Ash Street, Beech Street and the western border of the Borough.

F. Potable Water Supplies

There are no public water supply systems within the Borough. There are three private central water supplies, however. These include the Bethany Lake Village subdivision (serving 16 homes, 8 of which are in the Borough), the Bethany Village Assisted Living Community and the Methodist Church system (serving the church, parsonage and 5 other homes). No capacity or quality issues have been identified with any of these. All are tested regularly. Typical aquifer yields are discussed above.

G. Wetlands

Four very small wetland areas have been identified along the unnamed tributary of the Dyberry Creek that flows along the western side of the Borough. One is a private pond on the Buckland property. The other three are also ponding areas along the stream that are included in the designated flood hazard areas discussed above. Collectively, the wetlands represent no more than 10 acres of land and can be easily avoided in any design of collection lines. Bethany Lake also touches the Borough's northern border. A map illustrating the location of these wetlands follows:



BETHANY BOROUGH WETLANDS

III. Existing Sewage Facilities

A. Existing Sewage Systems

1. Treatment Facilities and Collection Systems

   There are no sewage treatment facilities, collection systems or discharge points for such systems (except for community subsurface systems discussed in Section III-B-1 below) in Bethany Borough.

2. Narrative and Schematic Diagrams

   See Section III-A-1 above.

3. Problems with Existing Systems

   Although there are no sewage treatment or collection facilities in Bethany Borough, the status of the Honesdale Borough system is relevant to planning for Bethany because connection to that system is one of the practical alternatives identified in previous Act 537 planning for both communities. The Borough is operating under a Chapter 94 Corrective Action Plan. This Plan identifies and lays out programs to mitigate causes of hydraulically overloaded conditions with Honesdale's wastewater treatment facilities.

   Honesdale's treatment plant is rated at 1.18 million gallons per day (mgd). The Corrective Action Plan states it "has enough capacity to handle the present and future needs of the Borough and the surrounding area, provided the problems of inflow and infiltration can be brought under control." The Plan indicates inflow and infiltration are responsible for 49% or more of the flows experienced at the treatment plant. It also states "the existing capacity of the treatment plant will need to be increased, within the next 10 years, if existing growth trends in the area continue at their present rates."

   Major sources of inflow and infiltration identified in the Honesdale Borough Corrective Action Plan are: 1) Infiltration through aging sewer lines, older brick manholes and deteriorating laterals; 2) Infiltration through the trunk line that carries sewage along the river to the treatment plant; 3) roof drains;

4) sump pumps and private area drains still connected to the sanitary sewage system; 5) storm water inlets connected to the sanitary system prior to the construction of the treatment plant or the trunk line; 6) springs and wells piped into the sanitary system; 7) aging and deteriorated house laterals; and 8) other sources. Other sources may include springs and wells piped into the system, abandoned sewer lines, inflow through or under manholes lids and frames, leaking water mains and foundation drains. They are difficult to locate and assess for their contribution to the problem.

The Corrective Action Plan includes the following actions: 1) Inspect, test and repair or replace main collector sewer lines and deteriorated house laterals; 2) Repair the trunk line; 3) Separate sumps, roof drains and private area drains from the collection system; 4) Locate and remove springs and wells that are piped into the system; 5) Continue separating storm drains from the sanitary sewer system by constructing storm sewer piping systems; 6) Reintroduce and retrofit combined sewers in areas where they cannot be separated; 7) Investigate methods, costs and financing options to increase treatment plant capacity; and 8) Continue a regular inspection, maintenance and repair program targeting system collectors.

Until such time as the programs contained in the Corrective Action Plan reduce the load on the Borough sewage treatment facilities, new hookups are limited to either the amount of sewage connections allotted to the Borough by the Department of Environmental Protection or to a percentage of the amount of storm water and infiltration removed from the system. The present DEP allotment of treatment capacity is 60,000 gpd.

4. Proposed Upgradings in Relationship to Expected Growth

See Section III-A-1 above. Also, Bethany Borough is a very small community (292 persons in 2000). Some 24 persons resided in the Bethany Village Assisted Living Community, indicating the Borough's non-institutional population was 268 persons, 30 more than in 1990 but 14 less than 1980. There are 60 residents at present. Future growth will clearly revolve around whatever happens with the remainder of the former Bethany Colony property within the Borough. No upgrading of that community subsurface system is planned at this time.

5. Operation and Maintenance Requirements for On-Lot Systems

The Borough does not have an on-lot management program, although it has made periodic windshield surveys of system conditions and responded to complaints and repair permit requests.

6. Sewage Disposal Areas

See Section III-A-1 above.

B. On-Lot, Community and Retaining Tank Systems

1. Types of Systems in Use

Bethany Borough has two community subsurface sewage disposal systems. One is the Bethany Village Assisted Living Community system discussed in Section I-A-4 above. It serves the assisted living project at the south end of the Borough and nothing else. It includes back-up absorption areas and is operating at approximately 60% of full-capacity. However, it is also one of the systems identified as a malfunction in the Sewage Needs Survey discussed below (see Section III-B-2).

The other community subsurface system serves a portion of Bethany Lake Village (7 homes) at the northern end of the Borough. The system is an old one. It was identified as a malfunction in the 1985 Act 537 Plan and continues to experience problems (see Section III-B-2) although repairs have been attempted at various times.

All other systems are individual on-lot in nature (see Section III-B-2 below) for descriptions.

2. Sewage Needs Survey

A field survey was made of Bethany Borough on Friday, June 29, 2001 for purpose of assessing sewage disposal needs. The survey was conducted by Steven Knash, P.E. and Thomas J. Shepstone, AICP using the Act 537 Sewage Disposal Needs Identification Guidance manual from the Pennsylvania Department of Environmental Protection. The weather was clear and the temperature was approximately 90º. There had been no rain throughout the week although early and mid-June had been relatively wet.

The ground was quite dry in most areas.

The "Door to Door Survey Needs Survey" included as Appendix A to the manual was used to conduct the survey. Mr. Shepstone conducted and tabulated all surveys while Mr. Knash made all field observations of physical conditions. A map was generated prior to the survey using tax parcel data and aerial photos to superimpose building locations. Roads and driveways were also indicated. The survey began at approximately 7:15 AM and continued through 5:00 PM.

All homes were approached except for 10 in the far northeast and southwest sections where larger lots prevailed. It had been determined at the outset that the entire Borough should be surveyed. It was also determined from Census data that slightly over 100 on-lot disposal systems were likely to be found in the Borough and, therefore, that 25% to 35% needed to be surveyed. A total of 37 systems or 35% were actually surveyed. These represented an estimated 80 or 53% of all EDU's involved. There are believed to be 7 EDU's involved with the Bethany Lake Village community subsurface system and the Bethany Village Assisted Living Community is licensed for 100 beds, accounting for another 38 EDU's.

Where homeowners were not available to answer questions or give permission to inspect properties, field observations from adjoining properties or public rights of way were made on the map along with house numbers referring to the attached tabulation and system locations.

There are very few nonresidential properties in the Borough. They consist of a library, two churches and a garage/greenhouse. The Bethany Village property includes several structures with commercial potential that were previously occupied for dining, institutional, lodging and recreational uses, but these are all presently unoccupied. The preliminary data is organized into five subareas and also tabulated for the Borough as a whole.

Area No. 1 represents Bethany Lake Village and nearby areas.

Areas No. 2 and No. 3 represent the two core areas of the Borough, Area No. 2 being the one draining generally in a easterly direction and Area No. 3 draining generally in a westerly direction. They are split by Route 670 and could also be combined from a service perspective.

Area No. 4 also drains in a westerly direction and encompasses the area along Sugar Street that was built up during the 1950's through the 1970's.

Area No. 5 includes the Bethany Center project, related facilities such as the "Mansion" and immediately adjacent areas of the Borough, such as the houses adjoining the triangle formed by Wayne and Old Wayne Streets.

The following tables summarize the data collected for each area. Soils information was obtained from the County Soil Survey and does not represent a field analysis. Soils classified as "unsuitable" are those typically characterized by flooding, bedrock within 20" of the surface, seasonal high water tables within 20" of the surface or slopes in excess of 15%.

Bethany Borough Sewage Needs Survey - June 29, 2001					
Area No.	**House No.**	**No. of EDU's**	**Soil Type**	**System Malfunction**	**Description**
North Bethany Area:					
1	1	7	WoD (steep, high water table)	**Yes**	Community sub-surface system with standing water on surface and wetlands species taking root. Not maintained. Noticeable odors prevalent and reported by neighbors. Severe problem.
1	2	1	MoB (high water table)	**No**	No evidence of problems. System 30+ years old. Never pumped or repaired. Well, however, is only 25' away. Homeowner experienced odor problems from upstream community system during heavy rains.
1	3	1	MoB (high water table)	**No**	No evidence of problems. System is 10 years old sand mound. Never pumped or repaired.
1	4	1	MoB (high water table)	**Yes**	System almost 30 years old and producing green grass, surface water, spongy areas and some overflow. May be a seasonal problem. Never pumped or repaired.
1	5	1	MoB (high water table)	**Suspect**	System 40+ years old and located in very small front yard area within 10 feet of well. Has been pumped but date uncertain.

Bethany Borough Sewage Needs Survey - June 29, 2001					
Area No.	**House No.**	**No. of EDU's**	**Soil Type**	**System Malfunction**	**Description**
North Bethany Area (Continued):					
1	6	1	MoC (high water table)	No	System 40 years old and repaired 30 years ago to expand field. Close to drainage ditch and 50'+ from well and stream. Pumped every 7-10 years. Upstream community system produces strong odor during heavy rain and snowfall periods. Adjacent home with family has to get system pumped every 1-2 years.
1	21	1	MoC (high water table)	No	System is 30+ years old. Not pumped or repaired or repaired under current ownership. No evidence of problems. Well is 100' from system.
Sub-Totals:				**Overall Status (Systems/EDU's):**	
7 systems surveyed (33% of total)		13 EDU's (48%)	0% of Soils Suitable	2 / 8 - Yes 1 / 1 - Suspect 4 / 4 - No	29% / 62% malfunctioning 14% / 8% suspect 57% / 31% functioning properly

Bethany Borough Sewage Needs Survey - June 29, 2001					
Area No.	**House No.**	**No. of EDU's**	**Soil Type**	**System Malfunction**	**Description**
East Bethany Area:					
2	22	1	MoC (high water table)	**No**	System 30+ years old with no obvious problems. Pumped every 2+ years. No repairs. Water is treated and tested regularly. Owner very opposed to public sewer system.
2	23	1	MoC (high water table)	**No**	System 25+ years old. Owner indicated some seasonal wetness in corner of lot (possible from neighbor's system) but no obvious problems. No repairs or pumping of system over course current owner's 2-l/2 year occupancy. Water is not tested or treated.
2	24	1	MoC (high water table)	**Yes**	System of unknown age less than 50 feet from well. Owner indicates no problems but inspection indicated green lush grass, surface water and wet/spongy areas in drainfield location. System repaired by previous owner and pumped last Fall. Water test last year indicated no contamination.
2	25	1	MoC (high water table)	**No**	System entirely replaced 10 years ago. No problems. Pumped every 2+ years. Water tests indicate no contamination. Greywater piped to ditch.
2	26	1	MoC (high water table)	**Yes**	System 14 years old with proper separations. Elevated sand mound drainfield area exhibits some lush grass, wetness and spongy areas. Pumped in the last 5-6 years.
2	27	1	MoC (high water table)	**Suspect**	System 25+ years old. Blockage problem 2 years ago resolved with pressure cleaning and pumping. No other problems or repairs. Wet/spongy areas attributable to surface runoff.

Bethany Borough Sewage Needs Survey - June 29, 2001					
Area No.	**House No.**	**No. of EDU's**	**Soil Type**	**System Malfunction**	**Description**
East Bethany Area (Continued):					
2	28	1	MoC (high water table)	**No**	System 30+ years old. Pumped every 4 years. No problems but owner says major problems next door. Well shared with neighbor on other side (unable to inspect). Water tests no contamination. No repairs. Wants public sewer.
2	29	1	MoC (high water table)	**No**	System 25+ years old and experiencing no problems. Well is 40' away. Water no treated or tested. Renter indicates system pumped every 1-2 years and needs again.
2	30	1	MoC (high water table)	**No**	Small lot (17,100 sq. ft.) with 48 year old system. Tank replaced 7 years ago (two neighbors' system also repaired to address problems). Shares well with house behind. Septic tank treated regularly and pumped every 7-8 years. Greywater goes to ditch. Well is 50' away and water tested. No evidence of problems.
2	31	1	MoC (high water table)	**Suspect**	Old system with well 75' away. Greywater piped to surface. Some wetness and sponginess in area of drainfield. System pumped every 5 years. Owner indicates water is treated and tested as having no contamination. No repairs. Single occupant.

Bethany Borough Sewage Needs Survey - June 29, 2001					
Area No.	**House No.**	**No. of EDU's**	**Soil Type**	**System Malfunction**	**Description**
East Bethany Area (Continued):					
2	32	1	MoC (high water table)	**No**	Old system squeezed between pool and property line. Served from Methodist Church well. No evidence of problems with sewage system. Pumped every 7 years. No repairs. Greywater piped to surface.
2	33	1	MoC (high water table)	**No**	System 5 years old. Replaced as precaution only - no problems before or after. Pumped every 3-5 years. Water from Methodist Church well. Water tests indicated no contaminations. Some problems with system across street (seasonally).
2	34	1	WeB (high water table)	**No**	System is 20+ years old on large, somewhat remote lot. Water is treated and was tested twice in last 5 years with no contamination. No evidence of problems. Pumped every 2-3 years. No repairs. Owner opposed to public sewer system.
Sub-Totals:				**Overall Status (Systems/EDU's):**	
13 systems surveyed (36% of total)		13 EDU's (35%)	0% of Soils Suitable	2 / 2 - Yes 2 / 2 - Suspect 9 / 9 - No	15% / 15% malfunctioning 15% / 15% suspect 69% / 69% functioning properly

Bethany Borough Sewage Needs Survey - June 29, 2001					
Area No.	**House No.**	**No. of EDU's**	**Soil Type**	**System Malfunction**	**Description**
West Bethany Area:					
3	18	1	MoC (high water table)	**No**	System 40 years old. Separate tank for greywater. Main drainfield very small. Little use (single elderly occupant). No problems. Pumped every 5-10 years. Water tested fine. Owner on Social Security opposes public sewer.
3	19	1	MoC (high water table)	**Yes**	System 10+ years old. Sluggish drains in wet periods. Green lush grass and wet/spongy drainfield. Water tests 10 years ago indicated no contamination. Pumped regularly. No repairs.
3	20	1	MoC (high water table)	**Suspect**	Tank/lines replaced, field expanded 7-8 years ago. Occasional problems. Some spongy areas. Pumped every 2-3 years. Greywater to ditch. Water tested no contamination.
3	35	1	MoC (high water table)	**Suspect**	System re-constructed in 1972. No real problems but wet and spongy during rainy periods. Water is treated and tested. No contamination. Pumped every 2-3 years. Wants public sewer.
3	36	1	MoC (high water table)	**No**	Old system. No obvious problems. Pumped every 3-5 years. No repairs. Water supplied from Methodist Church along with 6 other sites.
3	37	1	MoC (high water table)	**No**	Old system. No obvious problems. Greywater from kitchen sink piped to surface. No pumping or repairs in recent years.
Sub-Totals:				**Overall Status Measured by EDU's:**	
6 systems surveyed (40% of total)		6 EDU's (40%)	0% of Soils Suitable	1 / 1 - Yes 2 / 2 - Suspect 3 / 3 - No	17% / 17% malfunctioning 33% / 33% suspect 50% / 50% functioning properly

Bethany Borough Sewage Needs Survey - June 29, 2001					
Area No.	**House No.**	**No. of EDU's**	**Soil Type**	**System Malfunction**	**Description**
South Bethany Area:					
4	7	1	MxB (high water table)	**Yes**	Old system and large family. Green lush grass, surface wate, sluggish drains, back-ups into home, spongy areas and odors all prevalent. Well is about 75' away. Stream also close. Pond within 25' and causing some wetness. System tank, lines and fields all repaired but still severely malfunctioning.
4	8	1	WeC (high water table)	**No**	System 45 years old but tank and field replaced 15 years ago. Pumped every 10+ years. Tested water 10 years ago and found no contamination. No evidence of problems.
4	9	1	WeC (high water table)	**Suspect**	System 35 years old. Replaced tank cover. Pump every 3 years. Drainfield runs under drive and next to drainage ditch. Some green lush grass and wet/spongy areas. About 75' to well.
4	10	1	WeC (high water table)	**No**	System is 8-9 years old sand mound with proper separations and no evidence of problems. No repairs.
4	11	1	WeC (high water table)	**No**	System 30+ years old. Greywater to surface. Occasional sluggish drains. Pumped every 2-3 years. Well 75' uphill from drainfield. No repairs.
4	12	1	MoC (high water table)	**Yes**	Tank and field replaced 2 years ago. Water tests showed minimal fecal coliform in 2001. Green lush grass and wet spongy areas. Pumped regularly.
Sub-Totals:				**Overall Status Measured by EDU's:**	
6 systems surveyed (27% of total)		6 EDU's (27%)	0% of Soils Suitable	2 / 2 - Yes 1 / 1 - Suspect 3 / 3 - No	33% / 33% malfunctioning 17% / 17% suspect 50% / 50% functioning properly

Bethany Borough Sewage Needs Survey - June 29, 2001					
Area No.	**House No.**	**No. of EDU's**	**Soil Type**	**System Malfunction**	**Description**
Triangle/Mansion Area:					
5	13	1	MoB (high water table)	**Yes**	System is very old cesspool. Green lush grass, surface wate, wet/spongy areas and odors present. Owners indicated no problems and not sure if system was pumped. Minimal repairs to lid. Well is 75-80' away. Water tests indicated no contamination.
5	14	38	MoC (high water table)	**Yes**	System updated in 1998 and serves assisted living facility licensed for 100 beds. Other buildings also connected but unused at present and not counted. Green lush grass, surface water, wet/spongy areas and odors. Water supply uphill, distant and chlorinated.
5	15	1	MoB (high water table)	**Yes**	Two septic tanks - one in front for small bath and another in rear. Surrounded in back by wetlands. Slow drains in winter. Green lush grass and wet/spongy drainfield. High ground water table. Well about 50' away.
5	16	1	MoC (high water table)	**Yes**	Old system renter owner is planning to repair. Leachfield not functioning. Green lush grass, surface water, sluggish drains, wet/spongy areas and odors present. Problems seasonally worse.
5	17	1	MoC (high water table)	**Suspect**	Old system in very small area. Dug well 50' from septic. Line repairs made but no problems except sluggish drains. Water tests indicate no contamination. Wants sewer system.
Sub-Totals:				**Overall Status Measured by EDU's:**	
5 systems surveyed (42% of total)		42 EDU's (86%)	0% of Soils Suitable	4 / 41 - Yes 1 / 1 - Suspect 0 / 0 - No	80% / 98% malfunctioning 20% / 2% suspect 0% / 0% functioning properly

Bethany Borough Sewage Needs Survey - Summary

Surveyed 37 of 106 systems (35%) in Borough
Surveyed 80 of 150 EDU's (53%) in Borough
Found that 0% of Borough systems located in suitable soils

Found evidence that 11 of 37 systems (30%) were malfunctioning
Evidence suggested 7 of 37 systems (19%) might be malfunctioning
Found that 19 of 37 systems (51%) were functioning properly

Found 54 of 80 EDU's (67%) served by malfunctioning systems
Evidence suggested 7 of 80 EDU's (9%) might be malfunctioning
Found that 19 of 80 EDU's (24%) were functioning properly

While the data is largely self-explanatory, several observations follow:

a. The two larger community subsurface systems in the Borough are both seriously malfunctioning. They represent a combined 45 EDU's. Present flow to these systems is estimated at 6,000 gpd, with up to 12,000 gpd if all licensed beds at the assisted living facility were to be occupied, and more if the Mansion or other buildings were to be reused in a commercial capacity.

b. There are another 9 single-family homes or EDU's served by what appear to be malfunctioning systems. Still another 7 EDU's have systems are suspected to be malfunctioning based on field observations.

c. Altogether, 67% of EDU's surveyed are served by malfunctioning systems and 9% more are suspected of malfunctioning. These represent 30% and 19%, respectively, of all on-lot disposal systems surveyed.

d. Three dug well water supply systems were identified along with two systems serving two homes each and one serving serving a church, the library and 5 residences.

e. Approximately 16-18 homes are occupied by elderly single householders or couples of limited ability to afford a public server system. These households also generate relatively limited impacts on

the sewer systems and most problems are found where larger households prevail.

f. Seven parties identified problems with neighboring sewage systems but indicated these were mostly seasonal in nature.

g. Approximately 30 homes in the Borough occupy relatively narrow lots and half of those surveyed had limited separation of wells and sewage systems, some as few as 10' apart.

h. Large numbers of systems 25 years or more in age were identified (approximately 25 or two-thirds of surveyed).

i. High water tables and poorly drained soils are the limiting factors in most of problem situations. Limited drainfield area is also a problem.

j. Some 23 homeowners surveyed (62% of systems) indicated their systems were pumped at last semi-regularly.

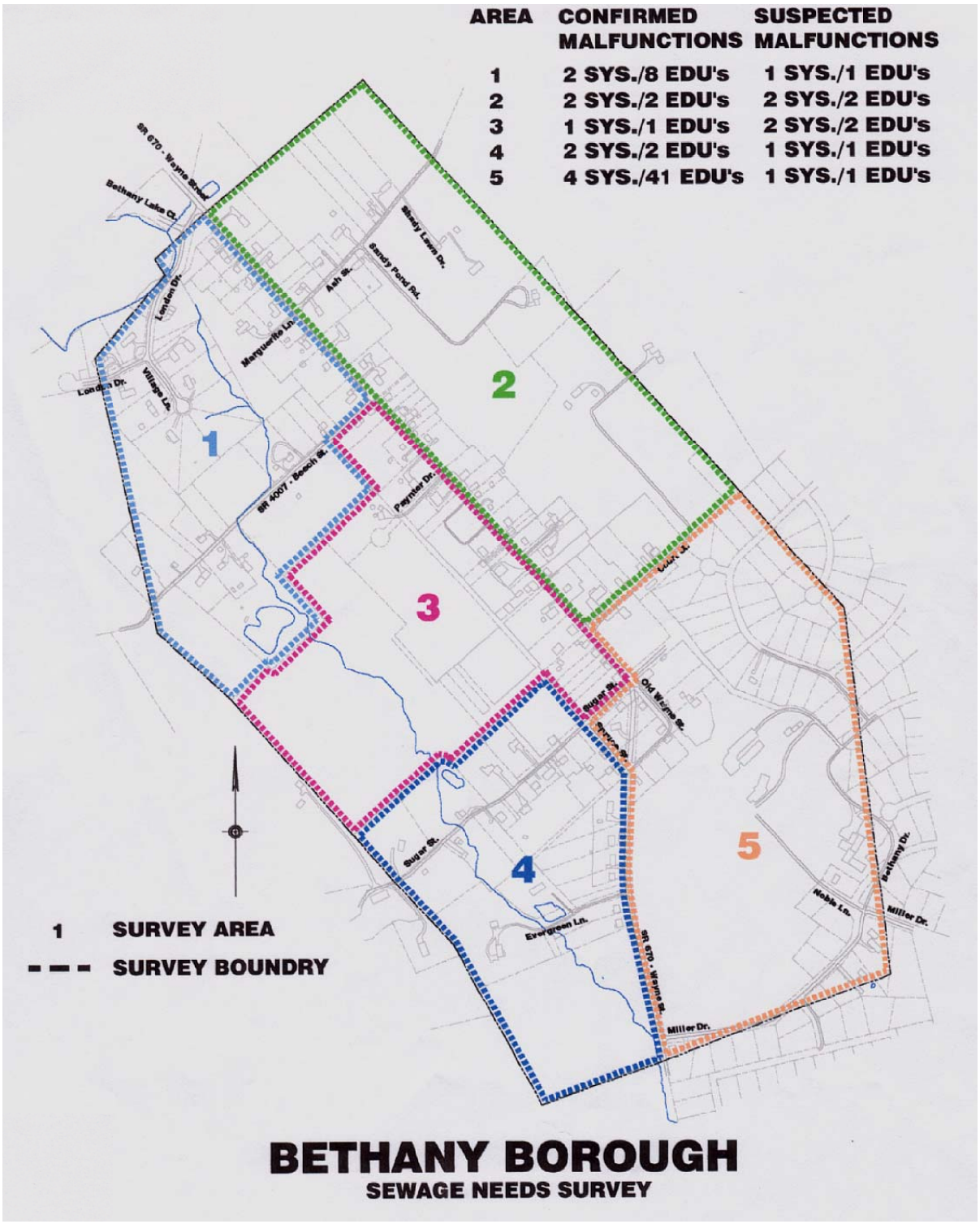
k. Some 9 systems, or 24%, had been repaired in last 10 years.

l. Although no one was asked to give an opinion on the need for a sewer system, three homeowners volunteered that they were in favor of such a system and three indicated they were opposed based on expected high costs.

m. Six homes (17% of those surveyed) piped their greywater discharges to ditches or the ground surface.

n. Two cesspool systems were identified, one by field observation and the other by homeowner comment.

There is sufficient evidence of sewage disposal needs to warrant consideration of a public collection and disposal system. The nature of soil conditions and lot configurations, combined with high rates of failure and repairs indicates further repairs or more intensive on-lot system management is unlikely to be successful in meeting these needs on a long-term basis. Affordability will be difficult to address, however, because of the large number of elderly individuals on fixed incomes who would have to bear the financial burden if the Borough built a public system.



BETHANY BOROUGH

SEWAGE NEEDS SURVEY

3. Comparison of On-Lot Systems with Soil Types

See Section III-B-2 above. The tables include soils data.

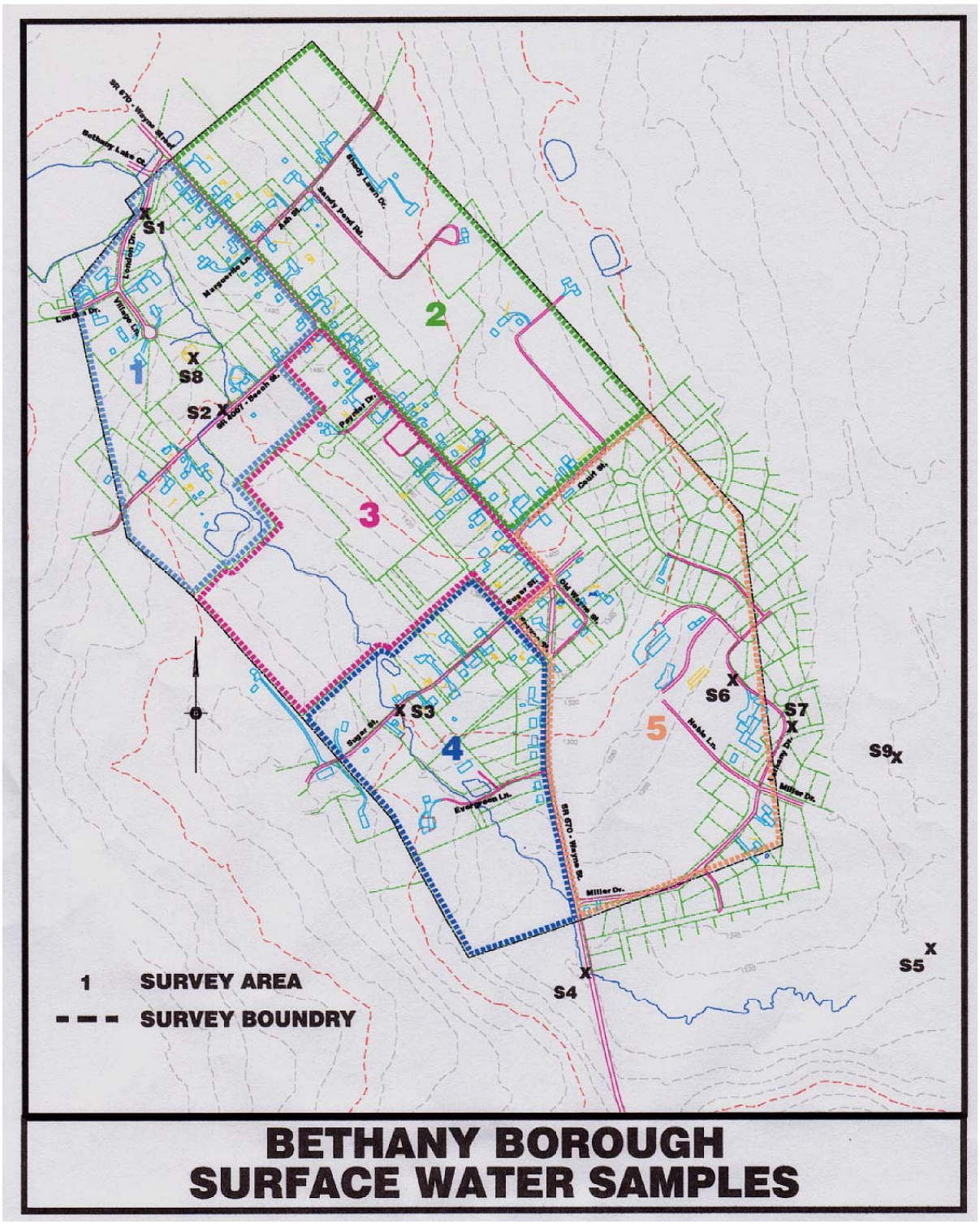
4. Water Supply Survey

An individual water supply survey was conducted in March and April, 2002 in the manner provided in the Act 537 Sewage Disposal Needs Identification Guidance manual from the Pennsylvania Department of Environmental Protection. That survey indicated that two of 36 tests or 6% of the total exceeded EPA recommended limits for fecal coliform.

Bethany Borough Water Sample Test Results

Area	Sample (1)	Total Coliform mg/L	Fecal Coliform mg/L (2)	Nitrate mg/L (3)	Nitrite mg/L (4)	Comments
1	W1	10	0	<0.02	<0.001	Does Not Exceed EPA
	W2	0	0	0.28	<0.001	Does Not Exceed EPA
	W4	0	0	0.83	<0.001	Does Not Exceed EPA
	W5	0	0	1.9	<0.001	Does Not Exceed EPA
	W6	0	0	1.4	<0.001	Does Not Exceed EPA
	W7	0	0	1.6	0.002	Does Not Exceed EPA
	S1	-	0	<0.02	<0.001	Does Not Exceed EPA
	S2	-	32	<0.02	0.001	**Exceeds Drinking Water Std. For Fecal Coliform (2)**
2	W3	0	0	0.06	<0.001	Does Not Exceed EPA
	W20	0	0	1.0	<0.001	Does Not Exceed EPA
	W21	0	0	0.78	<0.00	Does Not Exceed EPA
	W22	0	0	1.0	<0.001	Does Not Exceed EPA
	W23	0	0	1.0	<0.01	Does Not Exceed EPA
	W24	0	0	1.4	<0.001	Does Not Exceed EPA
	W25	0	0	0.62	<0.001	Does Not Exceed EPA
	W26	0	0	0.52	<0.001	Does Not Exceed EPA
	W27	0	0	1.5	<0.001	Does Not Exceed EPA
	W28	0	0	0.92	0.001	Does Not Exceed EPA
	W29	0	0	0.42	<0.001	Does Not Exceed EPA
	W30	0	0	0.46	<0.001	Does Not Exceed EPA
	W31	0	0	0.74	<0.001	Does Not Exceed EPA
3	W8	0	0	1.8	<0.001	Does Not Exceed EPA
	W9	0	0	1.6	<0.001	Does Not Exceed EPA
	W10	0	0	1.8	<0.001	Does Not Exceed EPA
	W11	0	0	1.3	<0.001	Does Not Exceed EPA
	W12	0	0	1.2	<0.001	Does Not Exceed EPA
4	W13	0	0	1.1	<0.001	Does Not Exceed EPA
	W14	0	0	0.74	<0.001	Does Not Exceed EPA
	W15	0	0	2.3	0.003	Does Not Exceed EPA
	W16	0	0	3.0	<0.001	Does Not Exceed EPA
	S3	-	0	0.21	0.001	Does Not Exceed EPA
	S4	-	2	0.43	0.001	**Exceeds Drinking Water Std. For Fecal Coliform (2)**
5	W17	0	0	2.7	<0.001	Does Not Exceed EPA
	W18	0	0	1.4	<0.001	Does Not Exceed EPA
	W19	0	0	1.3	<0.001	Does Not Exceed EPA
	S5	-	0	0.26	0.002	Does Not Exceed EPA

(1) - W for Well Sample, S for Stream Sample
(2) - EPA Maximum Contaminant Level Goal for Fecal Coliforms is 0mg/L
(3) - EPA Maximum Contaminant Level for Nitrate is 10 mg/L
(4) - EPA Maximum Contaminant Level for Nitrate is 1 mg/L



BETHANY BOROUGH
SURFACE WATER SAMPLES

C. Sludge and Septage Generation and Disposal

1. Sources of Wastewater Sludge

   There are no sewage treatment facilities in Bethany Borough that generate wastewater sludge. All systems are subsurface type that generate septage, however. The locations of those systems have been discussed and mapped above (see Section II-B-2). There are no known holding tanks in the Borough.

2. Quantities of Septage Generated

   Using the EPA guideline of 60 gallons of septage generated per capita on average, Bethany's 292 residents generate approximately 17,520 gallons per year.

3. Present Disposal Methods

   Septage is removed from Bethany systems by private contractors who dispose of it at approved facilities within the Commonwealth such as the Keystone Landfill in Dunmore, the Alliance landfill in Taylor or the Propst land application facility in Berlin Township, Wayne County.

IV. Future Growth and Land Development

A. Existing Development and Plotted Subdivisions

A research of Wayne County Planning Department records indicates there have been no new subdivisions or land developments in Bethany Borough of any consequence since the Bethany Colony subdivision was created in the early 1970's. Wayne County tax assessment records indicate that only three new housing units were added to the tax rolls from 1990 through 2001, one in 1990 and two more in 1992. The various maps offered previously (see Section II-A as an example) all include parcel boundaries. A review of these indicates there are 52 lots along Miller Drive and within this original subdivision that lie partly or wholly within Bethany Borough.

These lots and others within Dyberry Township were proposed to be served using a 30,000 gpd package sewage treatment plant, However, the permit has since expired and the only building activity that has taken place within the project has been on lots large enough to accommodate on-lot systems. Two of these have been in Bethany Borough. One has a malfunction.

The only other land development over the last three decades has been the Bethany Village Assisted Living Community project discussed above (see Section I-A-4). It has a licensed capacity for 100 beds and now has 60 residents. The facility will, at full capacity, represent a maximum of 38 equivalent dwelling units (EDU's). The present occupancy represents approximately 23 EDU's.

B. Land Use Compared to Sewage Planning

Bethany Borough's Zoning Ordinance and Map are discussed in Section I-B-1 above. The H-1 Historical District is already fully developed for the most part. It is also largely restricted in use to existing structures. Conversions of residences to high impact restaurants, for example, are not permitted. Therefore, it should generate no particular increases in sewage demand as a result of zoning classification.

The R-1 Residential District also allows for little more than what already exists. It is limited to single-family dwellings and most of the available land is already consumed in lots that are built upon. Again, zoning of these areas will not exacerbate sewage problems. This is because density is not increased and no

new areas are opened to development.

The S-1 District is the only place within the Borough where new higher density residential or commercial uses could develop as a result of zoning. The only obstacle to developing this area, in fact, is the lack of sewage treatment capacity. The assisted living facility could be expanded under zoning and a restaurant could reopen in the Mansion, for example, although no such plans have been offered by anyone at this point. Another possible use would be as an educational campus.

Therefore, it is reasonable to expect additional development or redevelopment will eventually take place on the 40.8 acres that are part of the Bethany Village Assisted Living Community and constitute most of the S-1 District. Such uses will, in turn, generate additional sewage treatment demand. It is extraordinarily difficult to project such demand in the absence of specific plans. Nonetheless, a planned unit development of this size could, based on experience with other comparable projects in the region, generate as many as 2-4 EDU's per acre or additional 100 EDU's in total above what now exists, depending on the availability of capacity (see Section III-A-3).

C. Demographic Analysis

Bethany Borough's 1985 Act 537 Plan projected a 1990 population of 292 persons and a 2000 population of 316 persons. The DEP projection was 300 persons for both years. The 1994 Wayne County Comprehensive Plan projected a 2000 population of 204 persons. The actual population dropped to 238 residents in 1990 and only reached 292 in 2000 as a result of the Bethany Village Assisted Living Community project (24 residents in 2000). However, the population of the project has since grown to 60 and, therefore, the Borough population has probably now exceeded 300 persons for the first time in its history.

Future growth is likely within the Bethany Village Assisted Living Community and S-1 District area, particularly if it is sewered. Conceivably, the 50 undeveloped lots within the Bethany Borough portion of the former Bethany Colony development could also be developed and additional assisted living units or other multifamily uses could be created. If so, the Borough population could even increase by as much as 80% over an extended period of time.

Considering the previous growth patterns of the Borough and the potential for

additional growth within the S-1 Districts of the Borough, the following projections have been developed for sewage planning purposes:

Bethany Borough Future Growth Projections

					Without Central Sewage		With Central Sewage	
	1970	1980	1990	2000	2010	2020	2010	2020
Housing Units	97	132	117	128	140	152	151	178
% Increase	N/A	36%	-11%	9%	9%	9%	18%	18%
Resident Population	267	282	238	268	292	318	316	373
Institutional Population	0	0	0	24	80	80	120	160
Total Population	267	282	238	292	372	398	436	533
% Increase	N/A	6%	-16%	23%	27%	7%	49%	22%
EDU's	**100**	**135**	**120**	**140**	**173**	**186**	**200**	**242**
% Increase	N/A	35%	-11%	17%	23%	7%	43%	21%

A note of caution regarding all projections is warranted because circumstances within an area such as Wayne County where growth results primarily from in-migration can change rapidly. Real estate recessions such as the prolonged one in the 1990's can slow growth dramatically. It can then suddenly rebound as a result of factors such as low interest rates or the impact of the September 11, 2001 attack on local real estate markets.

This is why the Commonwealth has consistently under-projected growth in the Poconos by wide margins over several decades. The Data Center has always attempted to apply formulas to the Poconos that only work well in the slower growing areas of the Commonwealth that are less impacted by in-migration.

Also, the 1980 to 1990 decline within the Borough is almost certainly a Census error. The 2000 Census indicated housing units climbed by 11 units while County tax data shows that only 3 new houses were constructed. The difference most likely reflects the lack of any real decline from 1980 to 1990 and simply a better counting in 2000.

Therefore, the above projections are thought to be on the high side. They

assume that housing and population growth will take place at the same average pace as the 1970 through 2000 period if central sewage is not provided. If it is provided, it is assumed the rate could double and that expansions would take place on the site of the Bethany Village Assisted Living Community through reuse of the Mansion or new construction, effectively doubling the size of that operation as well.

D. Land Use Regulations Protecting Land and Water Resources

Bethany Borough's major land use regulations are reviewed in Section I-B of this Plan. There are no other Borough ordinances or plans of any significance to sewage planning, water supplies, recreational water use, groundwater recharge, industrial water use or wetlands. The Borough also lacks a Comprehensive Plan under the Municipalities Planning Code.

The Wayne County Comprehensive Plan makes no recommendations with respect to sewage planning or water supplies in Bethany Borough, nor does it address recreational or industrial water use. The Community Facilities Study portion of the Plan does, however, identify seven areas of unmet County needs including; 1) extension and upgrading of sewage collection facilities peripheral to existing treatment plants and 2) upgrading of existing water systems to meet Safe Drinking Water Act requirements. The County Plan also speaks to the issue of protecting groundwater recharge areas and wetlands but only in a general way that does not specifically impact upon Bethany Borough. It includes no regulations or policies of any kind that would restrict wastewater planning for the Borough.

The Pennsylvania State Water Plan makes no observations or recommendations related to either Bethany Borough or any land and water resources connected with the Borough. The Comprehensive Water Quality Management Plan (COWAMP) for the region recommends investigating the extension of Honesdale Borough collection lines to Bethany Borough and other municipalities surrounding Honesdale. Section I-B-3 of this Plan addresses stream protection designations adopted by the Commonwealth. A study is now underway to examine whether the East Branch of the Dyberry Creek qualifies as an Exceptional Value stream but those tributaries of the Dyberry that drain Bethany enter the Creek below the section being studied.

E. Sewage Planning Based on Growth

There are no areas within or adjacent to Bethany Borough where community sewage systems are specifically planned to be available within a 5-year or a 10-year period. The Borough of Honesdale is planning to increase its capacity by solving its hydraulic overload situation and upgrading its systems but there are, presently, no specific plans to extend sewers into Bethany Borough or even Dyberry Township. There are, likewise, no specific plans to build or expand community sewer systems within any subdivisions or any other part of the Borough.

Notwithstanding the lack of any specific plans to sewer Bethany or parts of the Borough, the Borough of Honesdale's 1978 and 1987 Act 537 Plans both recommended that the latter "consider" extensions to serve the Bethany Borough (all of the Borough) and Route 670 area. No dates were attached to these recommendations. The 1987 Plan projected, however, that the sewage flows from the Bethany and Route 670 area would total an estimated 78,750 gallons per day in 1990 if sewers were to made available. There has been no progress in advancing these possibilities since 1987. The Borough of Honesdale has taken on some of the additional service areas that the 1987 Plan recommended it consider (e.g. portions of Cherry Ridge and Texas Townships), but not Bethany Borough.

V. Alternatives

A. Conventional Collection and Treatment Alternatives

Description: Extension of Honesdale Borough collection system to serve Bethany Borough. That system is now, effectively, a regional sewer system serving four different municipalities (Honesdale Borough plus parts of Berlin, Cherry Ridge and Texas Townships.

Technical Feasibility: There are no existing sewage treatment or collection lines within Bethany Borough that can be repaired, expanded upon or extended pursuant to §71.21.a.4.i or §71.21.a.4.ii of the Department regulations. Both existing systems are seriously malfunctioning and the soil types in the vicinity of each are such that effective long-term repairs are not possible (see Section III-B). Indeed, they have already been attempted a number of years ago and failed. The potential for a new community sewage system pursuant to §71.21.a.4.iii) is discussed below (see Section V-C), the Borough being of such a small size that a small-flow facility could serve it all.

Extension of the Honesdale system, assuming that it can eliminate the hydraulic overload that now exists and open up capacity to serve Bethany, is technically feasible, however. Schematic layouts of two alternatives for extending the Honesdale regional system to the Borough have been developed. One uses a combination of a gravity and pressure lines within the Borough and the other relies upon a pressure system connected to a force main to serve all of it. Both have been costed out and are technically feasible.

B. On-Lot Alternatives

Description: Reliance upon a combination of existing and new replacement on-lot systems.

Technical Feasibility: Soil types within the Borough, combined with relatively small lot sizes (see Section III-B), rule out both subsurface and other on-lot options. Where soils can accommodate land application, for example, there is simply not enough land area to serve the properties in question. Moreover, the poor soils and malfunctions are scattered about the entire Borough, making it impossible to group the malfunctions into clusters for purposes of installing new replacement on-lot systems. A DEP review of that agency's records indicates

there have been a total of 17 sewage permits issued since 1989 and 13 of these or 76% were for repairs. Many malfunctions, however, are going unrepaired because there is no lot area or good soil on which to install a more workable system.

C. Small Flow System Alternatives

Description: A package treatment collection system to serve Bethany Borough with discharge into one of the Dyberry Creek tributaries draining the Borough.

Technical Feasibility: This is the alternative recommended in the Borough's existing Act 537 Plan (see Section II-A-1). It was, however, rejected in the course of the Feasibility Study the Borough had completed by Milnes Engineering in September, 1990. It concluded that connection with the Honesdale Borough sewer system was a more feasible option than a small-flow facility for Bethany alone (see Section II-A-2) and suggested the latter was, in fact, no longer feasible.

This conclusion was based on the fact that Bethany Center (a now closed large-scope drug and alcohol rehabilitation project and residential community, some facilities of which are now being used by Bethany Village Assisted Living Community) appeared "unable to construct its own wastewater treatment plant..." It was noted that the "Borough's proposed facilities were to have been adjacent to this plant and were to have shared certain components, such as portions of the influent and effluent sewer lines and the laboratory/blower building." Today, those same conditions prevail.

A new stream discharge would also be difficult to justify particularly along the Dyberry Creek, the upper portions of which are presently being considered for Exceptional Value stream designation and the lower portions of which are a highly popular trout fishing stream.

D. Community Land Disposal Alternatives

Description: A package treatment collection system to serve Bethany Borough with land application or subsurface disposal of the effluent.

Technical Feasibility: Soil types within the Borough do not allow reliance upon community subsurface disposal systems. Indeed, both of the Borough's two existing community subsurface systems are seriously malfunctioning, as noted

above (see Section III-B). There is additional land area on which to relocate the Bethany Village Assisted Living Community, but the soil types are of the same general classification as those where the existing malfunctioning system is located. Additionally, such a solution would do nothing to resolve the problems of other malfunctioning systems scattered about the Borough without a package treatment plant and collection system and there is not adequate area on which to locate the number of subsurface disposal beds that would be required in that instance.

Land application of sewage effluent is theoretically possible but would, given the soil types found in the Borough and the extremely limited application rates necessitated by these soils, be almost certainly impossible from a practical perspective. The fact the Borough is already largely developed and such suitable soils as do exist are found on small parcels also makes spray irrigation options difficult to seriously consider. (See Section II-C for further details and mapping.) The amount of land area that would be required to dispose of the effluent from a Bethany Borough sewage treatment system would, at the rates permitted, be extensive and almost certainly exceed that available in the area (including land in Dyberry Township).

E. Retaining Tank Alternatives

Description: Use of retaining tanks to replace existing on-lot systems that can not be relocated or repaired.

Technical Feasibility: Retaining tanks are a temporary solution only. They would not be appropriate if other viable options exist on either a short-term or long-term basis and they do (e.g. connection to the Honesdale system). Moreover, the Borough has no retaining tank ordinance and is, given its small size, administratively unequipped to take responsibility for this type of solution. The volume of effluent from just those 54 EDU's associated with malfunctioning systems identified in the sewage needs survey would exceed 14,000 gallons per day, an unmanageable amount that would still go to the Honesdale system as soon as technically feasible. Therefore, retaining tanks are not a feasible alternative except as a last resort temporary measure in those instances where an immediate health hazard cannot be solved by any other means.

F. Sewage Management Program Alternatives

Description: Initiation of an aggressive Borough program to manage existing

on-lot systems through regular inspections, maintenance and repairs where necessary.

Technical Feasibility: Soil types within the Borough, combined with relatively small lot sizes (see Section III-B) limit the capacity to effectively pursue this alternative. Nonetheless, supervised regular maintenance could go far in reducing the scope of malfunctions. Regular inspections to identify feasible repairs, even where those repairs will not achieve full conformance with on-lot design standards can also control the magnitude of the problems resulting from malfunctions. A comprehensive Sewage Ordinance employing these features, requiring use of aerobic treatment to reduce flows and demanding financial guarantees to ensure maintenance of systems would be necessary. Retaining tanks could also be used as part of such a program where repairs or replacements are simply not possible.

It is not possible to eliminate all malfunctions with such a program, but they can be reduced to a manageable level. Health hazards cannot be eliminated, however, nor can growth be accommodated with such a program. It is technically feasible but has to be considered a back-up option that will only be suitable if more comprehensive solutions turn out to be not feasible on further investigation.

G. Nonstructural Planning Alternatives

Description: Use of land use regulations to limit the impacts of sewage disposal systems and meet future sewage disposal needs.

Technical Feasibility: Bethany Borough is mostly developed already. Its challenges relate, therefore, primarily to the problems with existing sewage disposal systems. There is little or no growth that can or will occur without a sewage disposal system. There are no changes to its existing Zoning Ordinance or in the way of subdivision regulations that will make any difference with respect to the problems that already exist with its sewage disposal systems or that will prevent any future problems. Most of the land within the Borough is already zoned for low impact, low density activity (see Section I-B-1) and where it is not, the property is already developed to some extent.

A Comprehensive Plan to serve as a legal foundation for the Borough Zoning Ordinance is warranted for that purpose but would create no additional authority to deal with either growth or sewage disposal needs. Any regulations in this

regard would still have to be in the form of municipal ordinances. A Zoning Ordinance already exists in this regard and a Sewage Disposal Ordinance has been previously recommended (see Section V-F above and Section I-A-2).

H. No Action Alternative

Description: Reliance upon the existing system of on-lot disposal with no changes.

Technical Feasibility: This alternative would do nothing to correct the serious malfunctions prevalent with respect to two-thirds of the sewage systems surveyed, malfunctions that threaten public health and water quality (see Section III-B-2).

While the Borough is not presently growing, all efforts to realize future potential for growth on underdeveloped properties such as the Bethany Village Assisted Living Community will be for naught without a sewage disposal system. The Borough is a low-income area and needs the economic development that a system would make possible.

Drinking water sources (and even dug wells) that lie within as few as 10-25 feet of malfunctioning sewage systems and cesspools are threatened. Tributaries of the renowned fishing creek and High Quality Dyberry Creek are also in danger. The other environmental problems associated with malfunctioning systems (e.g. strong odors) are also a disincentive to living in the Borough.

The no-action alternative is, for these various reasons, not technically feasible as a long-term solution to the Borough's sewage disposal needs.

VI. Evaluation of Alternatives

A. Evaluation of Technically Feasible Alternatives

The foregoing analysis indicates that two technically feasible alternatives exist to deal with Bethany Borough's sewage disposal needs; 1) collection and conveyance to the Honesdale Borough sewer system, and 2) a sewage management program to upgrade the condition of existing on-lot systems. The following is an evaluation of each with respect to §71.21.a.5.i.A of the Department's regulations:

Evaluation of Technically Feasible Alternatives

Criteria	Connection to Honesdale Alternative	Sewage Management Program
VI-A-1 Regional Water Quality Plans §71.21.a.5.I.A	**CONSISTENT:** COWAMP planning for the region recommends investigation of extending collection lines from Honesdale Borough to Bethany Borough and other adjoining communities.	**CONSISTENT:** On-lot sewage management is recommended in regional water quality planning as a technique for upgrading the quality of sewage disposal system performance in all communities.
VI-A-2 Municipal Wasteload Management Plans §71.21.a.5.I.B	**CONSISTENT:** Honesdale Borough's Chapter 94 Plan limits new connections to a fixed amount until additional capacity is created through system improvements. Those improvements are being made at present and should provide adequate nhew capacity for Honesdale to accept Bethany's sewage and meet its Plan obligations.	**CONSISTENT:** On-lot sewage management presents no conflicts with Honesdale Borough's Chapter 94 Plan.
VI-A-3 Title II Clean Water Act Plans §71.21.a.5.I.C	**CONSISTENT:** There are no known Title II Plans in effect that have a bearing on Bethany Borough's sewage planning.	**CONSISTENT:** There are no known Title II Plans in effect that have a bearing on Bethany Borough's sewage planning.
VI-A-4 Comprehensive Plans - Per MPC §71.21.a.5.I.D	**CONSISTENT:** Bethany Borough has no Comprehensive Plan. Its Zoning Ordinance, encourages development within the Bethany Village Assisted Living Community portion of the Borough where new sewers would have the most impact.	**CONSISTENT:** A sewage management program would help correct existing malfunctions but stimulate no new growth or conflicts with planning.
VI-A-5 Antidegradation Requirements §71.21.a.5.I.E	**CONSISTENT:** This alternative involves no new discharges and, because the capacity would be created by reducing Honesdale's hydraulic loads, the volume of effluent discharged from Honesdale's system will not increase.	**CONSISTENT:** This alternative involves no new discharges.

Evaluation of Technically Feasible Alternatives (Continued)

Criteria	Connection to Honesdale Alternative	Sewage Management Program
VI-A-6 State Water Plans §71.21.a.5.I.F	**CONSISTENT:** The Pennsylvania State Water Plan makes no oberservations or recommendations related to either Bethany Borough or any land and water resources connected with the Borough.	**CONSISTENT:** The Pennsylvania State Water Plan makes no oberservations or recommendations related to either Bethany Borough or any land and water resources connected with the Borough.
VI-A-7 Agricultural Land Policy §71.21.a.5.I.G	**CONSISTENT:** There are no active farms, significant areas of farmland, prime agricultural soils or locally protected agricultural soils within the Borough of Bethany.	**CONSISTENT:** There are no active farms, significant areas of farmland, prime agricultural soils or locally protected agricultural soils within the Borough of Bethany.
VI-A-8 Stormwater Management §71.21.a.5.I.H	**CONSISTENT:** The Borough is subject to the Lackawaxen River Watershed Stormwater Management Plan. THe Borough has adopted comprehensive standards for stormwater management but these have no particular impacts on sewage planning and there are no storm sewers.	**CONSISTENT:** The Borough is subject to the Lackawaxen River Watershed Stormwater Management Plan. THe Borough has adopted comprehensive standards for stormwater management but these have no particular impacts on sewage planning and there are no storm sewers.
VI-A-9 Wetlands Mapping	**CONSISTENT:** The very limited amount of wetalnds within the Borough and their locations relative to possible collection lines and other improvements indicate that it will be possible to site all lines and improvements without encroaching upon wetlands.	**CONSISTENT:** On-lot sewage management presents no conflicts with wetlands.
VI-A-10 Rare, Endangered or Threatened Species	**CONSISTENT:** There are no indications of the presence of rare, endangered or threatened species within bethany Borough. A search of the PNDI has been requested.	**CONSISTENT:** On-lot sewage management presents no conflicts with rare, endangered or threatened species.
VI-A-11 Historical and Archeological Resources	**CONSISTENT:** Bethany Borough possesses a number of historical resources. Installation of a sewage collection system should not impact upon these resources because only lines constructed within the streets or to the rear of properties should be involved and the value of historical properties will be enhanced, helping to ensure their preservation. A Cultural Resource Notice request has been submitted.	**CONSISTENT:** On-lot sewage management presents no conflicts with historical or archeological resources.

Neither of the technically feasible feasible alternatives presents any conflicts with other planning or any inconsistencies that need to be resolved, with the possible exception of the Honesdale Borough Chapter 94 Plan. This is less a conflict, however, than a reflection of the fact that Honesdale will have to make progress

on its Chapter 94 Plan implementation before it will be able to accept Bethany Borough's sewage. There will also have to be negotiation of connection and user fees that are acceptable to Honesdale Borough and economically feasible for Bethany Borough. Honesdale Borough has previously agreed to accept 124 Bethany connections with an anticipated connection fee of $3,000 (see attached copy of May, 1990 letter).

B. Resolution of Inconsistencies

There are, as stated above, no inconsistencies between the two technically feasible alternatives and other planning. Nonetheless, because the Honesdale connection alternative depends upon the ability of Honesdale Borough to implement its Chapter 94 Plan, reduce its hydraulic load and create capacity (as well as agree to accept Bethany's sewage), a copy of this Plan has been submitted to Honesdale Borough for review, comment and concurrence.

C. Compliance with Water Quality Standards

Neither of the two alternatives involves stream discharges or conflicts with water quality standards, effluent limitations or other technical, legislative or legal requirements, excepting with respect to the Chapter 94 Plan discussed above.

D. Cost Estimates and Present Worth Analysis

Only the Honesdale connection alternative involves significant new construction to meet the sewage needs of the Borough in the next five years. Two variations of the alternative are possible: 1) a combined gravity and pressure sewer system, and 2) a low pressure system linked to Honesdale through a force main. A cost analysis of each follows, demonstrating that there is no significant difference (about $81,000 or less than 4%) in the costs of these variations. The low pressure system is used for further analysis, due its slightly lower costs, and because it would not necessitate gravity sewer construction along the stream where minor wetlands would have to be avoided.

BETHANY BOROUGH
LOW PRESSURE SEWER SEWER COLLECTION COMBINED WITH GRAVITY
Revised Construction Costs Jul-01

	Description	Qty.			Unit Cost	Cost
1	8" dia. gravity sewer	5950 ft			$60.00 /ft	$357,000
2	4" dia. gravity sewer laterals	48 ea	at	6 ft	$45.00 /ft	$12,960
3	Bored highway crossings	17 ea	at	40 ft	$94.40 /ft	$64,192
4	Gravity sewer manholes	20 ea			$4,000.00 ea	$80,000
6	Pressure sewer, 2 - 6" dia.					
	6a In State ROWs	3600 ft			$40.17 /ft	$144,612
	6b In municipal ROWs	5200 ft			$36.06 /ft	$187,512
	6c In private ROWs	5060 ft			$20.26 /ft	$102,516
7	1 _" dia Pressure Sewer laterals					
	7a In State ROWs	16 ea	at	6 ft	$32.66 /ft	$3,135
	7b In municipal ROWs	29 ea	at	6 ft	$29.33 /ft	$5,103
	7c In municipal ROWs	9 ea	at	46 ft	$29.33 /ft	$12,143
	7d In private ROWs	12 ea	at	5 ft	$16.47 /ft	$988
8	Curb Stop with Box	64 ea			$405.00 ea	$25,920
9	Pressure Sewer manholes	24 ea			$1,300.00 ea	$31,200
10	Stream Crossings	3 ea			$6,450.00 ea	$19,350
11	Grinder Pumps					
	11a Simplex	62 ea			$3,200.00 ea	$198,400
	11b Duplex	2 ea			$5,520.00 ea	$11,040
12	6" dia. Force Main Interceptor	7900 ft			$53.22 /ft	$420,438
13	Pressure Sewer manholes	13 ea			$1,300.00 ea	$16,900
14	Stream Crossings	2 ea			$6,450.00 ea	$12,900
15	Pump Station (Duplex)	1 ea			$65,000.00 ea	$65,000
	Subtotal					$1,771,309
16	Mobilization			$30,000.00 ls		$30,000
17	Contingencies			$177,131.00 ls		$177,131
	Total					$1,978,440
18	Honesdale Borough Hook Up Fee 60,000 gpd @ $5.00/gal					$300,000
	Total					$2,278,440

BETHANY BOROUGH
LOW PRESSURE SEWER COLLECTION SYSTEM
Revised Construction Costs

	Description		Qty.			Unit Cost	Cost
1	Pressure sewer, 2 - 6" dia.						
	1a	In State ROWs	9550 ft			$40.17 /ft	$383,624
	1b	In municipal ROWs	5200 ft			$36.06 /ft	$187,512
	1c	In private ROWs	5060 ft			$20.26 /ft	$102,516
2	1 _" dia Pressure Sewer laterals						
	2a	In State ROWs	68 ea	at	6 ft	$32.66 /ft	$13,325
	2b	In municipal ROWs	29 ea	at	6 ft	$29.33 /ft	$5,103
	2c	In municipal ROWs	9 ea	at	46 ft	$29.33 /ft	$12,143
	2d	In private ROWs	12 ea	at	5 ft	$16.47 /ft	$988
3	Curb Stop with Box		114 ea			$405.00 ea	$46,170
4	Bored Highway Crossings		17 ea	at	40 ft	$94.40 /ft	$64,192
5	Grinder Pumps						
	5a	Simplex	112 ea			$3,200.00 ea	$358,400
	5b	Duplex	2 ea			$5,520.00 ea	$11,040
6	Pressure Sewer manholes		33 ea			$1,300.00 ea	$42,900
7	Stream Crossings		3 ea			$6,450.00 ea	$19,350
8	6" dia. Force Main Interceptor		7900 ft			$53.22 /ft	$420,438
9	Pressure Sewer manholes		13 ea			$1,300.00 ea	$16,900
10	Stream Crossings		2 ea			$6,450.00 ea	$12,900
	Subtotal						$1,697,501
11	Mobilization and Traffic Maintenance			$30,000.00 ls			$30,000
12	Contingencies			$169,750.00 ls			$169,750
	Total Construction Costs						$1,897,251
13	Honesdale Borough Hook Up Fee 60,000 gpd @ $5.00/gal						$300,000
	Total						$2,197,251

The costs of the low pressure system alternative have also been examined in the context of anticipated user fees that would result under various funding arrangements and at different connection fees. Bethany's connection fees might or might not be the same as the connection fees charged by Honesdale Borough to Bethany Borough. If Honesdale charged a $3,000 connection fee, for example, and Bethany Borough opted to impose a connection fee of only $2,000, the $1,000 difference would have to be capitalized as part of the cost of the project. The following tables summarize the different possibilities considered.

Bethany Borough
Low Pressure Sewer Collection System
20 Year PennVest Funding Option

Construction Costs	**$1,897,251**
Honesdale Borough Hook-Up Fees (60,000 gpd @ $5/gpd)	**$300,000**
Other Non-Construction Costs @ 20%	**$379,450**
TOTAL PROJECT COSTS	**$2,576,701**
PennVest Grant	**$500,000**
Local Share (150 EDU's at $2,500)	**$375,000**
SUB-TOTAL	**$875,000**
AMOUNT TO BE FINANCED	**$1,701,701**
Annual Debt Service (20 years @ 1%)	**$94,300**
Annual Operation & Maintenance @ 1.5% of Construction	**$28,459**
Honesdale Borough System Operation/Maintenance Charge	**$45,000**
Allowance for Uncollectible Amounts @5% of Annual Costs	**$8,829**
TOTAL ANNUAL EXPENSES	**$176,588**
Initial Capital Cost	**$2,576,701**
Present Worth of Initial Cost (P/F = 0.182573)	**$470,436**
Present Worth of O&M Cost (P/A = 9.2104)	**$262,117**
Present Worth of Salvage Value (P/F = 0.182573)	**$207,832**
TOTAL PRESENT WORTH	**$3,101,422**
NET PRESENT VALUE OF 20 YEARS OF ANNUAL EXPENSES AT 5% DISCOUNT RATE	**$2,200,683**
ANNUAL COST PER EDU @ $2,500 CONNECTION FEE	**$1,177**
MONTHLY COST PER EDU @ $2,500 CONNECTION FEE	**$98**
ANNUAL COST PER EDU @ $1,000 CONNECTION FEE	**$1,260**
MONTHLY COST PER EDU @ $1,000 CONNECTION FEE	**$105**

Bethany Borough
Low Pressure Sewer Collection System
30 Year PennVest Funding Option

Construction Costs	**$1,897,251**
Honesdale Borough Hook-Up Fees (60,000 gpd @ $5/gpd)	**$300,000**
Other Non-Construction Costs @ 20%	**$379,450**
TOTAL PROJECT COSTS	**$2,576,701**
PennVest Grant	**$500,000**
Local Share (150 EDU's at $2,500)	**$375,000**
SUB-TOTAL	**$875,000**
AMOUNT TO BE FINANCED	**$1,701,701**
Annual Debt Service (30 years @ 1%)	**$65,938**
Annual Operation & Maintenance @ 1.5% of Construction	**$28,459**
Honesdale Borough System Operation/Maintenance Charge	**$45,000**
Allowance for Uncollectible Amounts @5% of Annual Costs	**$7,337**
TOTAL ANNUAL EXPENSES	**$146,733**
Initial Capital Cost	**$2,576,701**
Present Worth of Initial Cost (P/F = 0.182573)	**$470,436**
Present Worth of O&M Cost (P/A = 9.2104)	**$262,117**
Present Worth of Salvage Value (P/F = 0.182573)	**$207,832**
TOTAL PRESENT WORTH	**$3,101,422**
NET PRESENT VALUE OF 20 YEARS OF ANNUAL EXPENSES AT 5% DISCOUNT RATE	**$1,828,619**
ANNUAL COST PER EDU @ $2,500 CONNECTION FEE	**$978**
MONTHLY COST PER EDU @ $2,500 CONNECTION FEE	**$82**
ANNUAL COST PER EDU @ $1,000 CONNECTION FEE	**$1,036**
MONTHLY COST PER EDU @ $1,000 CONNECTION FEE	**$86**

Bethany Borough
Low Pressure Sewer Collection System
75% Grant/30 Year Loan USDA Funding Option

Construction Costs	**$1,897,251**
Honesdale Borough Hook-Up Fees (60,000 gpd @ $5/gpd)	**$300,000**
Other Non-Construction Costs @ 20%	**$379,450**
TOTAL PROJECT COSTS	**$2,576,701**
Rural Development Grant @ 75%	**$1,932,526**
Local Share (150 EDU's at $2,500)	**$375,000**
SUB-TOTAL	**$2,307,526**
AMOUNT TO BE FINANCED	**$269,175**
Annual Debt Service (30 years @ 4.5%)	**$16,525**
Annual Operation & Maintenance @ 1.5% of Construction	**$28,459**
Honesdale Borough System Operation/Maintenance Charge	**$45,000**
Allowance for Uncollectible Amounts @5% of Annual Costs	**$4,736**
TOTAL ANNUAL EXPENSES	**$94,720**
Initial Capital Cost	**$2,576,701**
Present Worth of Initial Cost (P/F = 0.182573)	**$470,436**
Present Worth of O&M Cost (P/A = 9.2104)	**$262,117**
Present Worth of Salvage Value (P/F = 0.182573)	**$207,832**
TOTAL PRESENT WORTH	**$3,101,422**
NET PRESENT VALUE OF 20 YEARS OF ANNUAL EXPENSES AT 5% DISCOUNT RATE	**$1,180,419**
ANNUAL COST PER EDU @ $2,500 CONNECTION FEE	**$631**
MONTHLY COST PER EDU @ $2,500 CONNECTION FEE	**$53**
ANNUAL COST PER EDU @ $1,000 CONNECTION FEE	**$724**
MONTHLY COST PER EDU @ $1,000 CONNECTION FEE	**$60**

Bethany Borough
Low Pressure Sewer Collection System
75% Grant/40 Year Loan USDA Funding Option

Construction Costs	**$1,897,251**
Honesdale Borough Hook-Up Fees (60,000 gpd @ $5/gpd)	**$300,000**
Other Non-Construction Costs @ 20%	**$379,450**
TOTAL PROJECT COSTS	**$2,576,701**
Rural Development Grant @ 75%	**$1,932,526**
Local Share (150 EDU's at $2,500)	**$375,000**
SUB-TOTAL	**$2,307,526**
AMOUNT TO BE FINANCED	**$269,175**
Annual Debt Service (40 years @ 4.5%)	**$14,628**
Annual Operation & Maintenance @ 1.5% of Construction	**$28,459**
Honesdale Borough System Operation/Maintenance Charge	**$45,000**
Allowance for Uncollectible Amounts @5% of Annual Costs	**$4,636**
TOTAL ANNUAL EXPENSES	**$92,723**
Initial Capital Cost	**$2,576,701**
Present Worth of Initial Cost (P/F = 0.182573)	**$470,436**
Present Worth of O&M Cost (P/A = 9.2104)	**$262,117**
Present Worth of Salvage Value (P/F = 0.182573)	**$207,832**
TOTAL PRESENT WORTH	**$3,101,422**
NET PRESENT VALUE OF 20 YEARS OF ANNUAL EXPENSES AT 5% DISCOUNT RATE	**$1,155,530**
ANNUAL COST PER EDU @ $2,500 CONNECTION FEE	**$618**
MONTHLY COST PER EDU @ $2,500 CONNECTION FEE	**$52**
ANNUAL COST PER EDU @ $1,000 CONNECTION FEE	**$700**
MONTHLY COST PER EDU @ $1,000 CONNECTION FEE	**$58**

Bethany Borough
Low Pressure Sewer Collection System
45% Grant/30 Year Loan USDA Funding Option

Construction Costs	**$1,897,251**
Honesdale Borough Hook-Up Fees (60,000 gpd @ $5/gpd)	**$300,000**
Other Non-Construction Costs @ 20%	**$379,450**
TOTAL PROJECT COSTS	**$2,576,701**
Rural Development Grant @ 45%	**$1,159,516**
Local Share (150 EDU's at $2,500)	**$375,000**
SUB-TOTAL	**$1,534,516**
AMOUNT TO BE FINANCED	**$1,042,186**
Annual Debt Service (30 years @ 4.5%)	**$63,981**
Annual Operation & Maintenance @ 1.5% of Construction	**$28,459**
Honesdale Borough System Operation/Maintenance Charge	**$45,000**
Allowance for Uncollectible Amounts @5% of Annual Costs	**$7,234**
TOTAL ANNUAL EXPENSES	**$144,674**
Initial Capital Cost	**$2,576,701**
Present Worth of Initial Cost (P/F = 0.182573)	**$470,436**
Present Worth of O&M Cost (P/A = 9.2104)	**$262,117**
Present Worth of Salvage Value (P/F = 0.182573)	**$207,832**
TOTAL PRESENT WORTH	**$3,101,422**
NET PRESENT VALUE OF 20 YEARS OF ANNUAL EXPENSES AT 5% DISCOUNT RATE	**$1,802,956**
ANNUAL COST PER EDU @ $2,500 CONNECTION FEE	**$964**
MONTHLY COST PER EDU @ $2,500 CONNECTION FEE	**$80**
ANNUAL COST PER EDU @ $1,000 CONNECTION FEE	**$1,057**
MONTHLY COST PER EDU @ $1,000 CONNECTION FEE	**$88**

Bethany Borough
Low Pressure Sewer Collection System
45% Grant/40 Year Loan USDA Funding Option

Construction Costs	**$1,897,251**
Honesdale Borough Hook-Up Fees (60,000 gpd @ $5/gpd)	**$300,000**
Other Non-Construction Costs @ 20%	**$379,450**
TOTAL PROJECT COSTS	**$2,576,701**
Rural Development Grant @ 45%	**$1,159,516**
Local Share (150 EDU's at $2,500)	**$375,000**
SUB-TOTAL	**$1,534,516**
AMOUNT TO BE FINANCED	**$1,042,186**
Annual Debt Service (40 years @ 4.5%)	**$56,636**
Annual Operation & Maintenance @ 1.5% of Construction	**$28,459**
Honesdale Borough System Operation/Maintenance Charge	**$45,000**
Allowance for Uncollectible Amounts @5% of Annual Costs	**$6,847**
TOTAL ANNUAL EXPENSES	**$136,941**
Initial Capital Cost	**$2,576,701**
Present Worth of Initial Cost (P/F = 0.182573)	**$470,436**
Present Worth of O&M Cost (P/A = 9.2104)	**$262,117**
Present Worth of Salvage Value (P/F = 0.182573)	**$207,832**
TOTAL PRESENT WORTH	**$3,101,422**
NET PRESENT VALUE OF 20 YEARS OF ANNUAL EXPENSES AT 5% DISCOUNT RATE	**$1,706,594**
ANNUAL COST PER EDU @ $2,500 CONNECTION FEE	**$913**
MONTHLY COST PER EDU @ $2,500 CONNECTION FEE	**$76**
ANNUAL COST PER EDU @ $1,000 CONNECTION FEE	**$1,023**
MONTHLY COST PER EDU @ $1,000 CONNECTION FEE	**$85**

E. Analysis of Funding Methods

A summary of the annual user fees that will result from employment of the six different funding arrangements analyzed in the above section follows.

Bethany Borough
Low Pressure Sewer Collection System

Funding Option	Annual Costs Per EDU	Monthly Costs Per EDU	Feasibility
20 Year PennVest/$1,000 Connection Fee	$1,260	$105	**Not Feasible**
20 Year PennVest/$2,500 Connection Fee	$1,177	$98	**Not Feasible**
30 Year PennVest/$1,000 Connection Fee	$1,036	$86	**Not Feasible**
30 Year PennVest/$2,500 Connection Fee	$978	$82	**Not Feasible**
45% Grant/30 Year USDA Loan/$1,000 Connection Fee	$1,057	$88	**Not Feasible**
45% Grant/30 Year USDA Loan/$2,500 Connection Fee	$964	$80	**Not Feasible**
45% Grant/40 Year USDA Loan/$1,000 Connection Fee	$1,023	$85	**Not Feasible**
45% Grant/40 Year USDA Loan/$2,500 Connection Fee	$913	$76	**Not Feasible**
75% Grant/30 Year USDA Loan/$1,000 Connection Fee	$724	$60	**Feasible**
75% Grant/30 Year USDA Loan/$2,500 Connection Fee	$631	$53	**Feasible**
75% Grant/40 Year USDA Loan/$1,000 Connection Fee	$700	$58	**Feasible**
75% Grant/40 Year USDA Loan/$2,500 Connection Fee	$618	$52	**Feasible**

Only USDA grant and loan funding will make the Honesdale connection alternative financially feasible for Bethany Borough's residents. The projected user fees under all other arrangements are excessive for the Borough's generally modest income residents. A 75% grant will produce acceptable user fees.

However, it will be essential to obtain additional grant funding from the Community Development Block Grant program or comparable sources to assist senior and low-income residents with the costs associated with connection to the system. The contingency plan if such grant assistance cannot be secured has to rely upon the Sewage Management Program alternative.

F. Need for Phased Implementation

The scope of Bethany Borough's sewage disposal needs indicates that phasing is not necessary or appropriate with respect to the Honesdale connection alternative. However, it would be appropriate under a Sewage Management Program, to place the initial focus on larger malfunctions of public health concern. These would include the two community subsurface systems (Bethany Lake Village and Bethany Village Assisted Living Community), malfunctioning systems adjacent to the stream along the western side of the Borough and systems near homes relying upon dug wells for water supply. These areas should, under such a program, be addressed in the first one to two years of the program, followed by regular inspections, maintenance and repairs, as needed, for all on-lot systems in the Borough.

G. Administrative Needs and Legal Authority

The Honesdale connection alternative would require an administrative authority to finance and build the system, collect connection and user fees and manage the operation and maintenance of the collection lines and pumps. This could be a separate municipal authority in the pattern of Cherry Ridge and Texas Townships or the Borough itself (which is how Honesdale Borough operates). An ordinance mandating connection to the system would also be required. The separate municipal authority is desirable given the borrowing and grant administration involved.

A Sewage Management Program would also require the enactment of a municipal ordinance to mandate pumping, regular inspections, financial guarantees and other aspects of the program but it could be implemented directly by the Borough and its Sewage Enforcement Officer with financial support from the Department and application and inspection fees.

VII. Institutional Evaluation

A. Analysis of Existing Authorities

Bethany Borough has no existing wastewater treatment authorities.

B. Institutional Alternatives

See Section VI-G above for discussion of alternatives. The cost of administering the municipal authority recommended with respect to the Honesdale connection alternative would be minimal - no more than $25 per year per EDU based on the experience of Cherry Ridge and Texas Townships. This cost is included in the operation and maintenance costs analyzed above. The costs are minimal because the billing is typically managed by part-time local officials and this instance the number of billings is quite limited.

C. Administrative and Legal Actions Required

The following administrative and legal actions will be required to implement the recommended alternative of connecting to the Honesdale system:

Action	Target Date
Incorporate Bethany Municipal Authority	Jan-2003 to Feb-2003
Negotiate final arrangements with Honesdale Borough	Jan-2003 to Mar-2003
Arrange financing	Jan-2003 to Jun-2003
Design and bid	Mar-2003 to Sep-2003
Secure right-of-ways	Jul-2003 to Sep-2003
Enact connection ordinance	Jul-2003 to Aug-2003
Construction	Oct-2003 to Jun-2004

No other legal documents or sewage facility planning is required.

D. Chosen Institutional Alternative

See Section VI-G above. A Bethany Borough Municipal Authority enacted under the authority of the Pennsylvania Municipal Authorities Act is recommended. The Borough Council is composed of part-time local officials who serve on a voluntary basis and cannot be expected to take on this additional responsibility on their own. A Municipal Authority composed of volunteers with specific interests and talents in this subject area is needed to give sufficient attention to the issue.

VIII. Justification for Selected Alternatives

A. Technical Alternative

The recommended technical alternative for addressing Bethany Borough's sewage disposal needs is collection and conveyance to the Honesdale Borough sewage treatment system. It addresses the serious malfunctions that exist within the Borough, does not depend upon the Borough's very poor quality soils and is economically sound. A Sewage Management Program is the recommended back-up alternative in the event financing cannot be obtained to achieve the user and connection fees set forth in this Plan. This back-up alternative will not, however, solve all of the Borough's sewage problems. Some, in fact, may be unsolvable except by use of retaining tanks.

B. Capital Financing Plan

The analysis found in Section VI-E above clearly indicates that only one financing option is feasible, that being a USDA grant of 75% of the cost, combined with a 30 or 40 year loan at a discounted rate. This is the recommended capital financing plan. A Bethany Borough connection fee of $1,000 to $2,500 is also recommended (not to be confused with the connection fee charged by Honesdale Borough which is expected to be $5/gpd of capcity used). Finally, application for a Community Development Block Grant is recommended to offer financial assistance to low and moderate seniors and others who cannot afford the costs of initially connecting to the system.

C. Cost Effectiveness Analysis

Section VI-E indicates that the Honesdale connection alternative is cost-effective with a 75% USDA grant but no other methods. User fees ranging from $618/year to $631/year are projected, depending upon the terms of financing. The $618 figure is within the range of affordability and is cost-effective as a means of permanently addressing the sewage disposal needs of the Borough. There is no other technically feasible alternative that can provide a permanent solution. Therefore, along as it meets the affordability test (a maximum of $625/year) and assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others, the Honesdale connection alternative is cost-effective.

IX. Environmental Impact Analysis

Because PennVest funding would not be financially feasible and is not proposed for this project, an environmental impact analysis is not required under DEP guidelines.

X. Comments and Responses

Bethany Borough Council published a draft version of this Plan in both hard cover and on a special Internet website established for this purpose (see cover for address). It published the availability of the document for review, held a public hearing on July 1, 2002, and accepted written comments until August 31, 2002. Copies of the public notice and all responses received are attached as Plan Appendices. The following Represents a summary of the comments and responses:

A. Wayne County Department of Planning

The Department offered a number of technical corrections and editorial comments (Comment No.'s 1, 2 and 6), all which have been addressed.

It also suggested (Comment 3) that the majority of the problems with malfunctioning sewage systems rested with two systems. This is correct if one looks only at EDU's because 45 out of 80 EDU's surveyed were associated with these two systems and they represent 30% of all EDU's in the Borough. Nonetheless, if these two systems are not considered, then the survey results still indicate that 9 out of 35 systems (26%) were malfunctioning and another 7 or 20% were suspected of malfunctioning. The 35 individual systems surveyed represented one-third of all such individual systems. Therefore, they offer a good representation of the problems that exist independent of the two malfunctioning community subsurface systems. Also, the soils data strongly supports the evidence of malfunctions in that no individual systems are located on soils normally found to be suitable for such systems.

The Department's Comment No. 4 suggested that four additional alternatives be considered. These included;

- **Use of individual on-lot systems to replace the community subsurface system serving Bethany Lake Village.** This alternative is not feasible as a long term solution given the MxB and WoD soils that prevail. Seasonal high water tables and steep slopes make it impractical to recommend any individual on-lot systems. Experience with the existing malfunctioning community system, located within the WoD soil area and already repaired at least once, indicates other subsurface options will not solve the problem.

- **Use of a vacant lot within the development to relocate and replace the**

community subsurface system serving Bethany Lake Village. This alternative is not feasible. The vacant lots within the subdivision are the location of the existing malfunctioning system or represent immediately adjacent areas with the same soil conditions. There are no areas of suitable soils for a replacement community subsurface system on any of the vacant lots.

- **Use of an alternative absorption area to replace the community subsurface system serving Bethany Village Assisted Living Community.** This alternative is not feasible. Two backup absorption areas were identified when the existing malfunctioning system was approved in 1998. However, one is located immediately adjacent to the present absorption area and is part of the same MoB soil type. The other is located in a MoC soil (same as MoB but with a steeper slope). Both areas would have to be used to replace the existing malfunctioning system. Getting both to work properly given the bad experience with the existing system in the same soil type is highly improbable. Moreover, this solution, even if feasible, would not allow for enough expansion in capacity to service future development of the remainder of the property.

- **Use of spray irrigation on undeveloped portions of Bethany Village Assisted Living Community to serve that project.** This alternative is not feasible because the land area that would be required exceeds that which is available. There are approximately 20 acres of land within the Bethany Village Assisted Living Community that could be suitable for spray irrigation. However, the soil type involved (MoC) permits only minimal spray rates. It is characterized by seasonal high water tables of 6" to 18" from the surface and slopes of 8% to 15%. Depending on whether the slope is below or above 12% and the seasonal high water table is below or above 10", a range of 20,000 to 40,000 square feet of land is required for each EDU on MoC soils, if permitted at all. This would demand as much as 35 acres of land just to dispose of the sewage produced by the existing assisted living facility, to say nothing of serving the Mansion or other future development of the property.

Finally, the Department suggested, in its Comment No. 5, that addition of the Wayne County Fairgrounds to the system might improve financial feasibility. This was investigated. It would require connection to a Fair Avenue, Honesdale collection line of insufficient capacity to take the additional flow from Bethany. Therefore, major additional costs would be incurred for an upgrading if this

option were pursued. Moreover, the Fairgrounds would be a relatively small user compared to other potential Dyberry Township hookups along the proposed Route 670 connection (which have not been considered in estimating revenue).

B. Bethany Borough Planning Commission

The Plan was submitted to the Bethany Borough Planning Commission simultaneously with the submission to the Wayne County Planning Department. The Commission met on August 12, 2002 and voted to recommend the project, based on the lack of suitable soils for on-site sewage disposal. The Borough Council appreciates this support. No further response is required.

C. Laurie Alabovitz

Ms. Alabovitz supports a sewer project. The Borough Council appreciates this support. No further response is required.

D. Clifford Ammerman

Mr. Ammerman supports a sewer project. The Borough Council appreciates this support. No further response is required.

E. Ruth Bairstow

Mrs. Bairstow is opposed to a sewer project based on proposed fees. However, the Honesdale connection fee will probably be less than the $3,000 estimated (their current policy yields a fee of approximately $2,000) and this expense will be capitalized rather than passed on to individual homeowners, yielding a total connection cost of $1,000 to $2,500 rather than $5,500 she suggests. Also, Bethany Village Assisted Living Community represents an estimated 38 EDU's and will be assessed accordingly. Financial assistance for low and moderate income seniors is also proposed.

F. Thomas Beahan (Bethany Village Assisted Living Community)

Mr. Beahan supports a sewer project. The Borough Council appreciates this support. No further response is required.

G. Donna Bluff

Mrs. Bluff supports a sewer project. The Borough Council appreciates this support. No further response is required.

H. Beverly Buckland

Mrs. Buckland opposes a sewer project. She feels the project is only being pursued to correct a few situations and individual repairs are preferable. Such repairs have been considered as an alternative (see Sections VI-A and VIII-A). However, it was not chosen as the preferred alternative because it could not address all of the malfunctions satisfactorily given the Borough's poor soils. Also, see response to Wayne County Department of Planning comments.

I. Chris Curtis

Mr. Curtis opposes a sewer project based on its dependence on the Bethany Village Assisted Living Community project. He also feels more detail is needed on costs and finances and that the impacts on low and moderate income seniors will be negative. However, financial assistance for low and moderate income seniors is proposed as part of the project and the estimated costs are based on engineering analyses. The Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C).

Finally, while the closure of the Bethany Village Assisted Living Community project would cause a negative financial impact on the project, it is clear there are at least that many more EDU's that could be created from development of now vacant and unusable Bethany Colony lots and other properties in Dyberry Township along the route of the line to Honesdale, that have not been considered in the analysis. Moreover, if the sewer project does go forward it would almost certainly lead to further development of the Bethany Village Assisted Living Community with additional user fees that would make the sewer project much more affordable than suggested going forward. Therefore, the potential for upside gain more than balances the downside risk.

J. Katie and Bob Brosky

Mr. and Mrs. Brosky oppose a sewer project based on its dependence on the

Bethany Village Assisted Living Community project. They also feel the project is only being pursued to remedy that particular problem. However, there are numerous other sewage problems in the Borough (see response to Wayne County Department of Planning comments). Also, see response to Chris Curtis comments immediately above in regard to impacts of Bethany Village Assisted Living Community on the sewer project.

K. Jan Cheripko

Mr. Cheripko supports a sewer project, provided help for low and moderate income households is pursued and zoning is employed to protect the integrity of the Borough. The Borough Council appreciates this support. Also, financial assistance for low and moderate income seniors is proposed as part of the project and the Borough has a zoning ordinance in place already.

L. Delores C. Dunham

Ms. Dunham opposes a sewer project. She cites no particular reason for this opposition and, therefore, no specific response is possible.

M. Paul Edwards

Mr. Edwards supports a sewer project and indicates he has occasional problems with his own relatively new system(classified as "no malfunction" in sewage survey). The Borough Council appreciates this support. No further response is required.

N. John A. Fobes, Jr.

Mr. Fobes resides several miles away and used the Bethany Borough comment period as an opportunity to comment on sewage problems he believes exist and are being ignored by DEP and local officials in Clinton Township. He offers no comments on Bethany Borough itself. No further response is, therefore, required.

O. Margaret Freeman

Mrs. Freeman supports a sewer project. The Borough Council appreciates this support. No further response is required.

P. Ruth Gilbert

Ms. Gilbert is opposed to a sewer project based on proposed fees and their impact on seniors. However, financial assistance for low and moderate income seniors is proposed. The Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C).

Q. Charles and Shirley Gillow

Mr. and Mrs. Gillow oppose a sewer project based on its dependence on the Bethany Village Assisted Living Community project. They also feel more detail is needed on costs and finances and that the impacts on low and moderate income seniors will be negative. However, financial assistance for low and moderate income seniors is proposed as part of the project and the estimated costs are based on engineering analyses. The Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C).

Finally, while the closure of the Bethany Village Assisted Living Community project would cause a negative financial impact on the project, it is clear there are at least that many more EDU's that could be created from development of now vacant and unusable Bethany Colony lots and other properties in Dyberry Township along the route of the line to Honesdale, that have not been considered in the analysis. Moreover, if the sewer project does go forward it would almost certainly lead to further development of the Bethany Village Assisted Living Community with additional user fees that would make the sewer project much more affordable than suggested going forward. Therefore, the potential for upside gain more than balances the downside risk.

R. Karen and Roeb Gravel and Their Children

The Gravel family supports a sewer project. The Borough Council appreciates this support. No further response is required.

S. James E. and Mary Ann Hart

Mr. and Mrs. Hart oppose a sewer project. They feel the project is only being pursued to correct a few situations and will be too costly. However, there are numerous other sewage problems in the Borough (see response to Wayne County Department of Planning comments). Also, the Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C).

T. James Highhouse and Marilyn Highhouse

Mr. and Mrs. Highhouse oppose a sewer project based on the financial burden and environmental impacts. They cite several specific concerns and questions which are addressed below:

- **The cost is too high, can increase and requires grants not yet approved.** The proposed costs are reasonable compared to other projects. Also, the Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C). If these conditions cannot be met, the Borough will proceed with its backup option of a sewage management program.

- **The project is based largely on the contributions/success of Bethany Village Assisted Living Community.** There are numerous other sewage problems in the Borough (see response to Wayne County Department of Planning comments). Also, while the closure of the Bethany Village Assisted Living Community project would cause a negative financial impact on the project, it is clear there are at least that many more EDU's that could be created from development of now vacant and unusable Bethany Colony lots and other properties in Dyberry Township along the route of the line to Honesdale, that have not been considered in the analysis. Moreover, if the sewer project does go forward it would almost certainly lead to further development of the Bethany Village Assisted Living Community with additional user fees that would make the sewer project much more affordable than suggested going forward. Therefore, the potential for upside gain more than balances the downside risk.

- **The cost may increase due to Honesdale's needs to expand and upgrade.** The project will not proceed, as noted above, unless financially feasible. Bethany and Honesdale will have a contract protecting each party. Also, the addition of Bethany to the Honesdale system improves the financial viability of that operation by spreading overhead costs. Regionalized sewage collection and treatment is more economical for all parties involved than individual projects.
- **Residents may be forced to sell their properties.** Sewer systems increase property values. Moreover, as noted above, financial help for low and moderate income households is part of the proposed project.

- **Large developments will negatively impact the environment and historic character will be lost.** There is no basis for this statement. Also, the Borough has a zoning ordinance controlling development and has relatively little developable land remaining except for the Bethany Village Assisted Living Community, the expansion and reuse of which has been a Borough goal for some time.

U. Joseph C. and Margaret Hook

Mr. and Mrs. Hook oppose a sewer project based on its dependence on the Bethany Village Assisted Living Community project. They also feel more detail is needed on costs and finances and that the impacts on low and moderate income seniors will be negative. However, financial assistance for low and moderate income seniors is proposed as part of the project and the estimated costs are based on engineering analyses. The Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C).

Finally, while the closure of the Bethany Village Assisted Living Community project would cause a negative financial impact on the project, it is clear there are at least that many more EDU's that could be created from development of now vacant and unusable Bethany Colony lots and other properties in Dyberry Township along the route of the line to Honesdale, that have not been considered in the analysis. Mr. and Mrs. Hook suggest that the timing of replacement development could be a problem, but the Borough can address this problem through some innovative connection and user fees that encourage

upfront payments from large users and charge new users much more than existing residents. Cherry Ridge Township, for example, has done both. Moreover, if the sewer project does go forward it would almost certainly lead to further development of the Bethany Village Assisted Living Community with additional user fees that would make the sewer project much more affordable than suggested going forward. Therefore, the potential for upside gain more than balances the downside risk.

V. Doris Knickerbocker

Mrs. Knickerbocker is opposed to a sewer project based on proposed fees and their impact on seniors. She also says she was not visited by the project consultants and would have informed them her sewage system is working fine Financial assistance for low and moderate income seniors is proposed. The Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C). Also, Mrs. Knickerbocker was, in fact, visited. She said exactly the same thing in person as in her letter. Her system was inspected and no problems were observed, which is not surprising given the fact she lives alone.

W. Paul K. Kuhn and Johnna E. Kuhn

The Kuhn family supports a sewer project. The Borough Council appreciates this support. No further response is required.

X. Daniel A. Liptak

Mr. Liptak posed several questions regarding the proposed project, the answers for which follow:

- **Can the system be expanded into Dyberry Township to pick up customers?** Yes.

- **Who will need and pay for grinder pumps?** Grinder pumps will be required wherever low pressure lines are used because gravity flow lines will not work. One pump can serve multiple homes but individual pumps are proposed in most cases. The costs for these pumps will be capitalized as part of the overall system cost. Maintenance costs are quite low but would

typically be a landowner responsibility.

- **How would Bethany Village Assisted Living Community fees be determined.** These fees would be established on an Equivalent Dwelling Unit (EDU) basis so that this business paid the same equivalent rate as others except for any early payment discounts or other incentives the Borough might enact to encourage further development. However, new development , generally, should be assessed higher connection fees as a way of recovering capital expense and reducing costs for existing homeowners.

- **Where will the homeowner's responsibility begin?** The homeowner will be responsible for the costs of connection from the public sewer line (or grinder pump) to their house. Each existing home will be provided with a lateral connection from which to extend the line.

- **What will the homeowner's total typical costs include?** The homeowner will be responsible for the Borough's connection fee ($1,000 to $2,500) plus the costs of the lateral connection to their home (variable depending on distance).

Y. Beatrice London

Ms. London supports a sewer project. The Borough Council appreciates this support. No further response is required.

Z. William and Donna Ludwig

Mr. and Mrs. Ludwig oppose a sewer project. They feel the project is only being pursued to correct the Bethany Village assisted Living Community problem and are concerned about dependence on that business. However, there are numerous other sewage problems in the Borough (see response to Wayne County Department of Planning comments). Also, while the closure of the Bethany Village Assisted Living Community project would cause a negative financial impact on the project, it is clear there are at least that many more EDU's that could be created from development of now vacant and unusable Bethany Colony lots and other properties in Dyberry Township along the route of the line to Honesdale, that have not been considered in the analysis. Moreover, if the sewer project does go forward it would almost certainly lead to further development of the Bethany Village Assisted Living Community with additional

user fees that would make the sewer project much more affordable than suggested going forward. Therefore, the potential for upside gain more than balances the downside risk.

AA. Leslie J. Mang and Sally R. Mang

Mr. and Mrs. Mang oppose a sewer project. They feel the project is only being pursued to correct the Bethany Village assisted Living Community problem. However, there are numerous other sewage problems in the Borough (see response to Wayne County Department of Planning comments).

BB. Bob and Alice Mullen

Mr. and Mrs. Mullen oppose a sewer project. They feel the project is only being pursued to correct the Bethany Village Assisted Living Community problem, will cost too much and will stimulate unwanted development such as mobile home parks. They also feel that Bethany Lake Village and other malfunctions can be addressed with repairs However, there are numerous other sewage problems in the Borough (see response to Wayne County Department of Planning comments). Additionally, the Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C).

The Borough also has a zoning ordinance controlling development and has relatively little developable land remaining except for the Bethany Village Assisted Living Community, the expansion and reuse of which will be a positive development even if it isn't reason enough to do the sewer project. There is very little likelihood that Borough would become attractive as a mobile home park site precisely because developable land is limited and has several other higher and better uses economically. Even if it did, the Borough Council has standards for this type of development which can be upgraded.

Finally, use of individual on-lot systems to replace the community subsurface system serving Bethany Lake Village is not feasible as a long term solution given the MxB and WoD soils that prevail. Seasonal high water tables and steep slopes make it impractical to recommend any individual on-lot systems. Experience with the existing malfunctioning community system, located within the WoD soil area and already repaired at least once, indicates other subsurface options will not solve the problem.

CC. Thomas and Debra Robinson

Mr. and Mrs. Robinson's are opposed to a sewer project due to the financial burden. However, financial assistance for low and moderate income households is proposed. The Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C).

DD. David B. Soete

Mr. Soete is opposed to a sewer project due to the financial burden and likely development impacts. He feels the Bethany Village Assisted Living Community is the only reason for the project and that Honesdale is looking for someone else to pick up their costs. However, financial assistance for low and moderate income seniors is proposed. The Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C). Also, the Borough has a zoning ordinance to control development and Dyberry Township (Mr. Soete's residence) has the capacity to enact such an ordinance as well. Moreover, there are numerous other sewage problems in the Borough (see response to Wayne County Department of Planning comments).

A repair program has been considered as an alternative (see Sections VI-A and VIII-A). However, it was not chosen as the preferred alternative because it could not address all of the malfunctions satisfactorily given the Borough's poor soils.

Finally, the addition of Bethany to the Honesdale system improves the financial viability of that operation by spreading overhead costs. Regionalized sewage collection and treatment is more economical for all parties involved than individual projects.

EE. Lisa A. Zielinski

Mrs. Zielinski questions the sewer project based upon its dependence upon the Bethany Village Assisted Living Community, likely development impacts and potential financial burden. However, there are numerous other sewage problems in the Borough (see response to Wayne County Department of Planning comments).

Moreover, the Borough also has a zoning ordinance controlling development and has relatively little developable land remaining except for the Bethany Village Assisted Living Community, the expansion and reuse of which will be a positive development even if it isn't reason enough to do the sewer project. There is very little likelihood that Borough would become attractive as a mobile home park site precisely because developable land is limited and has several other higher and better uses economically. Even if it did, the Borough Council has standards for this type of development which can be upgraded.

Finally, financial assistance for low and moderate income seniors is proposed. The Borough Council will only proceed with the preferred alternative if; 1) the fees meet the affordability test (a maximum of $625/year); and 2) assistance can be obtained to lower the financial burden of connection for low and moderate income seniors and others (see Section VIII-C).

Appendix A
Public Notice

Appendix B
Public Comments

Appendix C
Adoption Resolution

Appendix D
Act 537 Plan Content Checklist