

**WASTEWATER
FACILITIES PLAN**

PENNSYLVANIA ACT 537

**EAST ROCKHILL TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA**

SEPTEMBER 17, 1996

**WASTEWATER FACILITIES PLAN
FOR
EAST ROCKHILL TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA**

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Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

JUL 25 1997

Southeast Regional Office

610-832-6130
Fax 610-832-6133

Mr. John Cornell
Manager
East Rockhill Township
1622 Ridge Road
Perkasie, PA 18944

Re: Act 537 Plan Update
East Rockhill Township
Bucks County

Dear Mr. Cornell:

We have completed our review of your municipality's updated official sewage facilities plan entitled Wastewater Facilities Plan for East Rockhill Township as prepared by C. Robert Wynn Associates, Inc., dated September 17, 1996, and Addendum I dated April 21, 1997. The review was conducted in accordance with the provisions of the Pennsylvania Sewage Facilities Act.

Approval of the Plan is hereby granted.

The Plan provides for the:

1. Construction of a new .113 mgd sewage treatment facility with a stream discharge to the East Branch of Perkiomen Creek as shown in Exhibit I-10 of the April 21, 1997 Addendum.
2. The construction of a collection and conveyance system to divert flows of .012 mgd from study area B, currently being treated at the Pennridge Wastewater Treatment Facility (PWTF), to the new East Rockhill Township wastewater treatment plant as shown on Figure 7-6.
3. The continued reliance on the PWTF to provide public sewer service to study area A as shown on Table 7.4.
4. The extension of the public sewer collection and conveyance system to serve the development study area designated as "Schwenk Mill", to eliminate eleven malfunctioning on-site sewage disposal systems.



JUL 25 1997

Mr. John Cornell

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5. Increased municipal involvement in wastewater facilities planning and maintenance of on-lot disposal systems through the implementation of a public education program.
6. Continued monitoring of on-site sewage disposal systems within the Keelersville/Butler Lane study areas, and the remaining on-site sewage disposal systems within the Schwenk Mill Road Area.
7. Implementation of a wastewater alternative selection process for all new developments to ensure utilization of cost effective and environmentally sensitive sewage disposal/treatment facilities.

This approval is conditioned as follows:

1. While we recognize the short term unavailability of capacity at the existing Pennridge Wastewater Treatment Authorities Regional Treatment plant and East Rockhill's need to proceed with a Comprehensive Regional Solution is preferred by the Department. As such this approval is conditioned upon East Rockhill fully participating in Sewage Facilities Planning in conjunction with the other municipalities currently tributary to the Pennridge System so as to further evaluate the potential for the East Rockhill meeting it's sewage capacity needs at the Regional Treatment facility and elimination of the separate discharge.
2. The submission of yearly reports to the Department on the implementation of Item 5 (Public Education) and Item 6 (Continued Monitoring of Existing System) as steps to eliminate the existing and future malfunctioning systems. The report submissions shall commence one year from the date of this approval.

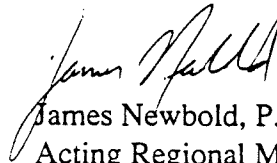
JUL 25 1997

Mr. John Cornell

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If you have any questions regarding this matter, please feel free to contact Mr. Sam Jones
610-832-6077 at the above number.

Sincerely,



James Newbold, P.E.
Acting Regional Manager
Water Management

cc: Bucks County Health Department
Bucks County Planning Commission
C. Robert Wynn Associates
Planning Section
Mr. Jones
Ms. Moore
Division of Municipal Facilities and Grants
Re 30 (RN)142-25



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
October 5, 1994

Southeast Regional Office

(610) 832-6130
FAX: (610) 832-6259

John Cornell
East Rockhill Township
1622 Ridge Road
Perkasie, PA 18944

Re: Act 537 - Plan of Study
East Rockhill Township
Bucks County

Dear Mr. Cornell:

We have completed our review of your municipality's proposed plan of study, as prepared by C. Robert Wynn Associates, Inc. dated September 21, 1994.

The Official Plan update will evaluate the collection, conveyance and existing/proposed treatment systems and also management programs (on-lot systems).

Please note that your municipality's Act 537 Official Plan Update should be formatted as suggested under Appendix H of the "A Guide for Preparing Act 537 Update Revisions" including the necessary items under Appendix I - "Act 537 Plan Content Checklist".

Approval of the proposed plan of study is hereby granted.

Please note, however, that this does not constitute a final action by the Department until you submit the completed plan to us and we have acted upon it consistent with PA Code Title 25, Chapter 71.

If you have any further questions, please feel free to contact me at the above number.

Sincerely,

Susan L. Kishbaugh
Water Quality Specialist
Water Management Program

cc: Bucks County Health Department
Bucks County Planning Commission
C. Robert Wynn
Ms. Moore
Planning Section
Re 30 (GJC)272.13

PUBLIC NOTICE

Public Notice of the East Rockhill Township Board of Supervisors to consider adoption of the proposed Wastewater Facilities Plan.

In accordance with Chapter 71, Administration of Sewage Facilities, Rules and Regulations, Section 71.31(c), East Rockhill Township, Bucks County, Pennsylvania, is accepting comments over a thirty (30) day period commencing on August 2, 1996, on the proposed adoption of the Official Township Wastewater Facilities Plan. The Plan includes the entire Township and will replace the 1987 East Rockhill Township Wastewater Facilities Plan.

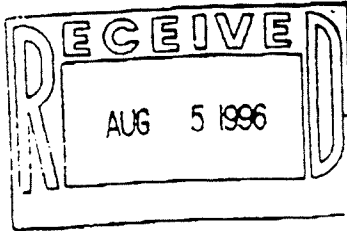
The proposed plan offers the following recommendations:

1. Implementation of a collection and conveyance system and construction of treatment facility to serve the portion of the development study area (identified as sub-area "B" which includes the Schwenk Mill Zoning District and a portion of the Residential Zoning District) in the vicinity of Branch Road.
2. Continued reliance on treatment facilities Penridge Wastewater Treatment Authority to provide public sewer service to the development study area, sub-area "A" which includes Great Hill Township Zoned Suburban Commercial, Office, Industrial, Residential, Cultural-Educational.
3. Extension of public collection and conveyance system to serve the

dated development study area "C" in the vicinity of Ridge Road and Old Bethlehem Pike to correct malfunctioning of the sewage disposal system. Treatment of effluent will be at the facilities of the Penridge Wastewater Treatment Authority.

4. Increased Municipal involvement in wastewater facility planning and maintenance through implementation of a public education program.
5. Continued monitoring of on-site sewage disposal systems within the Schwenk Mill Road and Keslerville/Butler study areas. Primary long term goal of providing public sewer service to the Schwenk Mill Road area.
6. Implementation of a wastewater alternative selection process for all new development to ensure utilization of cost effective and environmentally sensitive disposal/treatment alternatives.

All comments must be submitted to the Township in writing by September 5, 1996. Copies of the proposed plan are available for review at the Township Building, 1622 Ridge Road, Perkasie, PA 18944, during normal business hours.



PROOF OF PUBLICATION

News-Herald
Perkasie, Pa.

County of Bucks
 State of Pennsylvania ss
 On the 1st day of August A.D., 1996 personally appeared before me, the subscriber, a Notary Public in and for the said county Charles W. Baum who being duly sworn according to Law, deposes and says that he is the Publisher of the News-Herald, a newspaper of general circulation, published in the Borough of Perkasie, County of Bucks, State of Pennsylvania, which said newspaper was established on the 9th day of June, A.D., 1881, since which date the News-Herald has been regularly published every week in said county, and that the printed notice for publication attached hereto, is exactly the same as was printed and published in the regular edition and issue of the said News-Herald, Wednesday, July 31, A.D., 1996

Affiant further deposes that he is not interested in the subject matter of the aforesaid notice or advertisement and that all allegations in the foregoing statement as to the time, place and character of publication are true.

Signed *Charles W. Baum* Publisher

Sworn and subscribed to before me at Perkasie, Penna, this 1st day of August A.D., 1996. *Doreen G. Moyer* Notary Public

My Commission expires

Notary Seal
Doreen G. Moyer, Notary Public
Perkasie Boro, Bucks County
My Commission Expires Dec. 24, 1998
Member, Pennsylvania Association of Notaries

PUBLIC NOTICE

Public notice of the East Rockhill Township Board of Supervisors to consider adoption of the proposed Wastewater Facilities Plan.

In accordance with Chapter 71, Administration of Sewage Facilities, Rules and Regulations, Section 71.31(c), East Rockhill Township Board of Supervisors will consider adoption of the proposed Official Township Wastewater Facilities Plan at 8:00 PM on September 17, 1996, at the Township Building, 1622 Ridge Road, Perkasia, PA, 18944. The Plan includes the entire Township and will replace the 1987 East Rockhill Township Wastewater Facilities Plan.

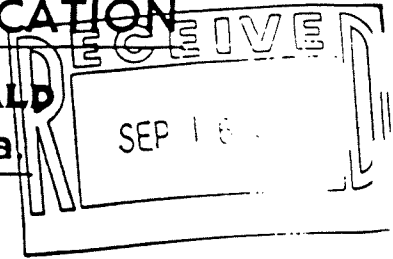
The proposed plan offers the following recommendations:

1. Implementation of a collection and conveyance system and construction of a treatment facility to serve the portion of the development study area (identified as sub-area "B" which includes the Suburban Zoning District and a portion of the Residential-1 Zoning District) in the vicinity of Branch Road.
2. Continued reliance on treatment facilities of the Pennridge Wastewater Treatment Authority to provide public sewer service in the development study area, sub-area "A" (which includes areas of the Township Zoned Suburban, Commercial Office, Industrial, Residential 1 and Cultural-Educational).
3. Extension of public sewer collection and conveyance system to serve the designated development study sub-area "C" in the vicinity of Ridge Road and Old Bethlehem Pike to correct malfunctioning on-site sewage disposal systems. Treatment of effluent will be at the facilities of the Pennridge Wastewater Treatment Authority.
4. Increased Municipal involvement in wastewater facility planning and maintenance through implementation of a public education program.
5. Continued monitoring of on-site sewage disposal systems within the Schwenk Mill Road and Keelersville/Butler Lane study areas. Pursue long-term goal of providing public sewer service to the Schwenk Mill Road study area.
6. Implementation of a wastewater alternative selection process for all new development to ensure utilization of cost effective and environmentally sensitive sewage disposal/treatment facilities.

Copies of the proposed plan are available for review at the Township Building, 1622 Ridge Road, Perkasia, PA, during normal business hours.

PROOF OF PUBLICATION

NEWS-HERALD
Perkasie, Pa.



County of Bucks

State of Pennsylvania ss

On the 12th day of September 96 A.D., 1996 personally

appeared before me, the subscriber, a Notary Public in and for the said county Charles W. Baum

who being duly sworn according to Law, deposes and says that he is the Publisher

of the News-Herald, a newspaper of general circulation, published in the Borough of Perkasia, County of Bucks, State of Pennsylvania,

which said newspaper was established on the 9th day of June, A.D., 1881, since which date the News-Herald has been regularly published every week in said county, and that the printed notice for publication attached hereto, is exactly the same as was printed and published in the regular edition and issue of the said News-Herald,

Wednesday, September 11, A.D., 1996

Affiant further deposes that he is not interested in the subject matter of the aforesaid notice or advertisement and that all allegations in the foregoing statement as to the time, place and character of publication are true.

Signed Charles W. Baum Publisher

Sworn and subscribed to before me at Perkasia, Penna., this 12th day of September 96 A.D., 1996

Doreen G. Loyer Notary Public

My Commission expires Doreen G. Loyer, Notary Public, Perkasia Boro, Bucks County, My Commission Expires Dec. 24, 1998, Member, Pennsylvania Association of Notaries

RESOLUTION 96-15

A RESOLUTION FOR 537 WASTEWATER FACILITIES PLAN REVISION

WHEREAS Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as Amended, and the Rules and Regulations of the Pennsylvania Department of Environmental Protection, The Department adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, requiring East Rockhill Township to adopt an Official Sewage Facilities Plan for the provision of adequate sewage systems and to revise said plan from time to time as may be necessary, and

WHEREAS East Rockhill Township has prepared the said plan and has found it adequate for the wastewater disposal and management needs of the entire Township.

NOW, THEREFORE, BE IT RESOLVED that East Rockhill Township hereby adopts the plan known as the East Rockhill Township Wastewater Facilities Plan for the wastewater and management needs as the Official Plan of the municipality. The Township hereby assures the Department of the proper and timely implementation of the said plan as set forth therein:

The alternatives of choice to be implemented for the six study areas in the Township are as follows:

1. Implementation of a collection and conveyance system and construction of a treatment facility to serve the portion of the development study area (identified as sub-area "B") which includes the Suburban Zoning District and a portion of the Residential-1 Zoning District in the vicinity of Branch Road.
2. Continued reliance on treatment facilities of the Pennridge Wastewater Treatment Authority to provide public sewer service in the development study area sub-area "A" (which includes areas of the Township zoned Suburban, Commercial-Office, Industrial, Residential-1, and Cultural-Educational).
3. Extension of public sewer collection and conveyance system to serve the designated development study sub-area "C" in the vicinity of Ridge Road and Old Bethlehem Pike to correct malfunctioning on-site sewage disposal systems. Treatment of effluent will be at the facilities of the Pennridge Wastewater Treatment Authority.
4. Increased Municipal involvement in wastewater facility planning and maintenance through implementation of a public education program.
5. Continued monitoring of on-site sewage disposal systems within the Schwenk Mill Road and Keelersville/Butler Lane study areas. Pursue long-term goal of providing public sewer service to the Schwenk Mill Road study area.

6. Implementation of a wastewater alternative selection process for all new development to ensure utilization of cost effective and environmentally sensitive sewage disposal/treatment facilities.

SO RESOLVED this 17 day of ~~September~~ A.D., 1996, by the Board of Supervisors of East Rockhill Township, Bucks County, PA.

ATTEST:

EAST ROCKHILL TOWNSHIP
BOARD OF SUPERVISORS

John V. Conall

John R. Wynn
Chairman

John R. Lussman
Vice Chairman

Raymond J. Volante
Supervisor

PLAN SUMMARY

RECOMMENDED PLAN:

The recommended plan for wastewater facilities within East Rockhill Township includes the following key elements:

1. Implementation of a collection and conveyance system and construction of a treatment facility to serve the portion of the development study area (identified as sub-area "B" which includes the Suburban Zoning District and a portion of the Residential-1 Zoning District) in the vicinity of Branch Road.
2. Continued reliance on treatment facilities of the Pennridge Wastewater Treatment Authority to provide public sewer service in the development study area sub-area "A" (which includes areas of the Township Zoned Suburban, Commercial-Office, Industrial, Residential-1, and Cultural-Educational).
3. Extension of public sewer collection and conveyance system to serve the designated development study sub-area "C" in the vicinity of Ridge Road and Old Bethlehem Pike to correct malfunctioning on-site sewage disposal systems. Treatment of effluent will be at the facilities of the Pennridge Wastewater Treatment Authority.
4. Increased Municipal involvement in wastewater facility planning and maintenance through implementation of a public education program.
5. Continued monitoring of on-site sewage disposal systems within the Schwenk Mill Road and Keelersville/Butler Lane study areas. Pursue long-term goal of providing public sewer service to the Schwenk Mill Road study area.
6. Implementation of a wastewater alternative selection process for all new development to ensure utilization of cost effective and environmentally sensitive sewage disposal/treatment facilities.

DEVELOPMENT STUDY AREA SUB-AREA "A":

Selected Alternative

Wastewater disposal needs within the development area identified as sub-area "A" (not including sub-area "B" will be serviced through allocation capacity at the Pennridge Wastewater Treatment Authority based on adopted PWTA policy). Long-term goals include resolution of available capacity based on capacity purchased in the original 1975 agreement and actual utilization; and/or cooperation with PWTA to provide additional capacity during plant renovation/upgrades. East Rockhill Township will continue to own, operate, and maintain the collection and conveyance system within the area with treatment of effluent at the Pennridge Wastewater Treatment Authority treatment facility.

DEVELOPMENT STUDY AREA SUB-AREA "B":

Selected Alternative

Installation of collection and conveyance system and new treatment facility to provide service to existing dwellings within the sub-area as well as development proposals on the Fenley

PLAN SUMMARY

Tract (Phases II and III) and Weidner Farm. Total estimated required capacity is approximately 411 EDU's. The collection system will connect to existing sewer line serving the Fenley Subdivision (currently under phased construction) and existing sewer lines serving portions of the Suburban District. A new sewer line will be constructed along the south side of Branch Creek to convey sewage to the treatment facility to be constructed on lands currently owned by East Rockhill Township along Branch Road.

Implementation Schedule

<u>Task</u>	<u>Estimated Completion Date</u>
1. Public meeting/resident input.	September 1996
2. Act 537 Plan adoption.	September 1996
3. Submit Act 537 Plan to DEP.	September 1996
4. Act 537 approval.	February 1997
5. Detailed topographic survey/site investigation.	March 1997
6. Prepare detailed preliminary design/cost estimate.	May 1997
7. Develop financing plan.	June 1997
8. Prepare final design/construction estimate.	July 1997
9. Design approval by DEP.	January 1998
10. Advertise for bids/award.	February 1998
11. Commence construction.	March 1998
12. Complete construction.	December 1998
13. New connections.	January 1999

East Rockhill Township will own, operate, and manage the collection system as well as the treatment facility. The wastewater facility will provide sewer service to 44 existing connections, 181 connections from approved subdivision (Fenley Tract), 125 proposed connections (Weidner Farm), and 61 "in fill" lots.

Project Cost/Financing

This alternative will provide sewer service for a total of 411 connections at an estimated cost of \$1,565,000.00. The estimated cost per connection is \$3,808.00 with a yearly operation and maintenance cost of approximately \$250.00. Project will be completely user financed with

PLAN SUMMARY

the bulk of the costs paid by the two (2) major developments (Fenley Subdivision and Weidner Farm Subdivision). It is anticipated that East Rockhill Township will assume a loan for construction financing.

DEVELOPMENT AREA SUB-AREA "C":

Selected Alternative

Installation of collection and conveyance system to serve approximately 33 connections within the Old Bethlehem Pike/Ridge Road area of East Rockhill Township and a small portion of West Rockhill Township in accordance with Option C-7. The collection system will connect to the existing East Rockhill Township facilities located on Park Avenue. Treatment will be provided by the Pennridge Wastewater Treatment Authority treatment plant.

Implementation Schedule

<u>Task</u>	<u>Estimated Completion Date</u>
1. Request planning module exemption from East Rockhill Township, PWTA, and PADEP.	August, 1996
2. Detailed topographic survey/site investigation.	August, 1996
3. Prepare detailed preliminary design/cost estimate.	August, 1996
4. PADEP exemption approval.	September, 1996
5. Develop financing plan.	September, 1996
6. Public meeting/resident input estimate.	September, 1996
7. Prepare final design/construction estimate.	October, 1996
8. Advertise for bids/award.	November, 1996
9. Commence construction.	January, 1997
10. Complete construction.	March, 1997
11. New connections.	April, 1997

East Rockhill Township will own, operate, and manage the collection system. Effluent will be treated at the Pennridge Wastewater Treatment Authority treatment plant. The collection system will provide sewer service to approximately 33 existing dwellings/businesses. Project will be completely user financed.

PLAN SUMMARY

SCHWENK MILL ROAD STUDY AREA:

Selected Alternative

The selected alternative for the Schwenk Mill Road study area is public education and technical assistance program (Alternate #2). Due to the limited number of failed systems within the study area and excessive costs of a community system/public sewer alternative, the Township will implement a program to educate residents regarding on-lot disposal system maintenance, water conservation fixtures, and other methods to reduce septic system failures and potential impact from same.

Implementation Schedule

	Estimated Completion Date
1. Public meeting/resident input.	September 1996
2. Act 537 Plan adoption.	September 1996
3. Submit Act 537 Plan to DEP.	September 1996
4. Act 537 Plan approval.	February 1997
5. Prepare educational material for distribution.	March 1997
6. Distribute educational material.	April 1997
7. Assist homeowners experiencing problems with wastewater disposal systems.	On-going

Private ownership/private operation and maintenance of the on-lot sewage disposal systems will continue with any costs associated with the maintenance and operation of the systems to be the responsibility of the individual property owner. Costs associated with the public education program will be born by East Rockhill Township.

KEELERSVILLE/BUTLER LANE STUDY AREA:

Selected Alternative

The selected alternative for the Keelersville/Butler Lane study area is public education and technical assistance program (Alternate #2). Due to the limited number of failed systems within the study area and excessive costs of a community system/public sewer alternative, the Township will implement a program to educate residents regarding on-lot sewage disposal system maintenance, water conservation fixtures, and other methods to reduce septic system failures and potential impact from same.

PLAN SUMMARY

Implementation Schedule

	Estimated Completion Date
1. Public meeting/resident input.	September 1996
2. Act 537 Plan adoption.	September 1996
3. Submit Act 537 Plan to DEP.	September 1996
4. Act 537 Plan approval.	February 1997
5. Prepare educational material for distribution.	March 1997
6. Distribute educational material.	April 1997
7. Assist homeowners experiencing problems with wastewater disposal systems.	On-going

Private ownership/private operation and maintenance of the on-lot disposal systems will continue with any costs associated with the maintenance and operation of the systems to be the responsibility of the individual property owner. Costs associated with public education shall be born by East Rockhill Township.

OUTLYING STUDY AREA:

Selected Alternative

The selected alternative for the Outlying study area is public education and technical assistance program (Alternate #2). Due to the limited number of failed systems within the study area and excessive costs of a community system/public sewer alternative, the Township will implement a program to educate residents regarding on-lot septic system disposal maintenance, water conservation fixtures, and other methods to reduce septic system failures and potential impact from same.

Implementation Schedule

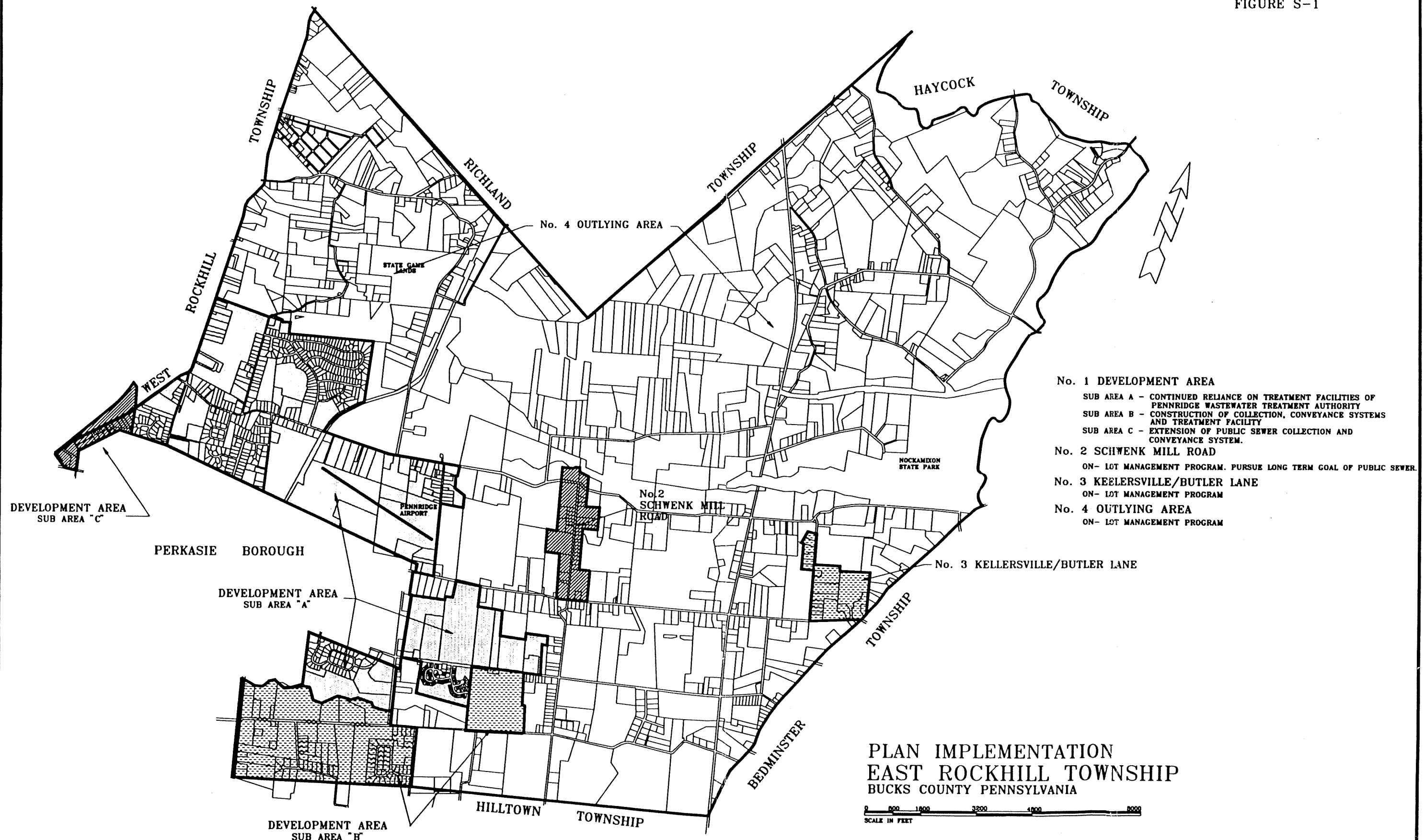
	Estimated Completion Date
1. Public meeting/resident input.	September 1996
2. Act 537 Plan adoption.	September 1996
3. Submit Act 537 Plan to DEP.	September 1996
4. Act 537 Plan approval.	February 1997
5. Prepare educational material for distribution.	March 1997

PLAN SUMMARY

- | | | |
|----|---|------------|
| 6. | Distribute educational material. | April 1997 |
| 7. | Assist homeowners experiencing problems with wastewater disposal systems. | On-going |

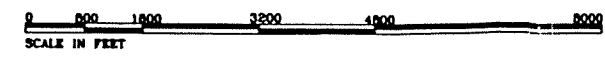
Private ownership/private operation and maintenance of the on-lot disposal systems will continue with any costs associated with the maintenance and operation of the systems to be the responsibility of the individual property owner. Costs associated with public education will be born by East Rockhill Township.

FIGURE S-1



- No. 1 DEVELOPMENT AREA**
 SUB AREA A - CONTINUED RELIANCE ON TREATMENT FACILITIES OF PENNRIDGE WASTEWATER TREATMENT AUTHORITY
 SUB AREA B - CONSTRUCTION OF COLLECTION, CONVEYANCE SYSTEMS AND TREATMENT FACILITY
 SUB AREA C - EXTENSION OF PUBLIC SEWER COLLECTION AND CONVEYANCE SYSTEM.
- No. 2 SCHWENK MILL ROAD**
 ON- LOT MANAGEMENT PROGRAM. PURSUE LONG TERM GOAL OF PUBLIC SEWER.
- No. 3 KEELERSVILLE/BUTLER LANE**
 ON- LOT MANAGEMENT PROGRAM
- No. 4 OUTLYING AREA**
 ON- LOT MANAGEMENT PROGRAM

**PLAN IMPLEMENTATION
 EAST ROCKHILL TOWNSHIP
 BUCKS COUNTY PENNSYLVANIA**



CHAPTER 1 INTRODUCTION

STUDY PURPOSE AND SCOPE:

This Wastewater Facilities Plan has been prepared in accordance with requirements promulgated under the Pennsylvania Sewage Facilities Act of 1966 as amended (PA Act 537) which was enacted to provide for planning the regulation of sewage systems within the Commonwealth. Under Act 537, Pennsylvania Municipalities are required to develop, adopt, and revise (when necessary) a wastewater facilities plan. The Act also authorizes grants for preparation of these plans.

The primary purpose of the Wastewater Facilities Plan is to protect the health, safety, and welfare of people within the planning area. The Wastewater Facilities Plan provides a comprehensive sewage planning mechanism to identify and resolve existing sewage disposal problems, avoid potential sewage problems resulting from new land development, and to provide for future sewage disposal needs within the community. The plan also serves as a means for coordination with other related local, county, and state programs which regulate development and the impact of development on the environment.

The current update of the East Rockhill Township Wastewater Facilities Plan was undertaken to meet State requirements under Act 537 and to address changes which have taken place since 1987. These changes include DEP prohibition of the Pennridge Wastewater Treatment Facility; adoption of allocation policies by the Pennridge Wastewater Treatment Authority; re-zoning of a portion of East Rockhill Township; significant development within the portion of the Township adjacent to the Perkasio Borough; and expansion of the public sewer collection and conveyance system. These changes require a review and update of the East Rockhill Township Wastewater Facilities Plan to provide adequate facilities for existing and future development, and to support the Township Comprehensive Plan Zoning Ordinance.

PREVIOUS WASTEWATER FACILITIES PLANNING:

Currently, East Rockhill Township wastewater facilities planning is included within the Pennridge Area Wastewater Facilities Plan prepared by the Bucks County Planning Commission and approved by the Department of Environmental Resources on November 16, 1988. The Pennridge Act 537 Plan, prepared in 1987, is a regional plan which outlines specific wastewater needs and alternatives for each Municipality within the region. The plan was developed in concert with a steering committee consisting of two (2) representatives from each municipality within the study area and two (2) representatives from the Pennridge Wastewater Treatment Authority. The Wastewater Facilities Plan consisted of three (3) separate documents. Volume I: Policy Document contained the regional goals and objectives of wastewater facilities planning and is divided into municipal subsections which "stand alone" as official plans for the respective municipalities. The second document, Volume II: Technical Supplement, contains all the technical papers prepared during the study. The Technical Supplement is intended to provide technical information including wastewater facilities needs and alternative analysis for each municipality, which supports the policies outlined in Volume I. A separate Volume III: Graphics Supplement, contains a series of maps for each municipality prepared during the study to facilitate the needs and alternatives identification process. The 1987 Pennridge Area Wastewater Facilities Plan updated a 1970 Sewerage Facilities Plan for the region. The 1987 plan differed in area from the 1970 plan, in that the 1970 plan followed the natural watershed limits, whereas, in the 1987 plan, the plan area delineation followed municipal boundaries.

Within the 1987 plan, the Township was divided into sewage management study areas to facilitate analysis of alternative wastewater options. The study areas were designated based on

CHAPTER 1

locations of concentrated on-lot sewage disposal systems and failures. All the identified areas of on-lot sewage disposal problems have been corrected via connection to public sewer, with the exception of the following: Schwenk Mill Road area, Keelersville/Butler Lane area, and Township wide study area (remainder of on-site systems located within East Rockhill Township). The Alternatives Analysis prepared in 1987 proposed a public education/technical assistance program as a short term recommended alternative for these study areas. That portion of the Township proposed for more intense development based on the Zoning Ordinance and Comprehensive Plan, was proposed to be serviced through a progression of public sewer extensions with treatment at the Pennridge Wastewater Treatment Plant. Since 1987, several sanitary sewer line extensions have been approved and constructed (through official plan revisions) within the development area. Major sanitary sewer line extensions include the following:

<u>Development</u>	<u>Dwelling Units</u>
Cheryl Crest.....	15
Glenwood.....	33
Ridge Run.....	196
Stoney Hill.....	37
Hilldale.....	19
Bridgeview.....	36
Pines at Pennridge.....	136
Chadds Place.....	14
Weidner.....	16
Fenley (Phase I).....	85

Additionally, public sewer service was extended to Meadow Lane in 1990 to provide service to 23 dwelling units (8 located within Perkasio Borough) with failing septic systems.

CHAPTER 2 TECHNICAL SUMMARY

The first step in the formation of the wastewater facilities plan for East Rockhill Township was to update the inventory and analysis of the various physical and man-made features, characteristics, and components of East Rockhill Township which influence wastewater facility planning. An examination of regional influences, natural features, population, land use regulations, water supply, and sewage treatment facilities is conducted in this chapter to provide a basis for establishing study areas and identifying appropriate alternatives for evaluation.

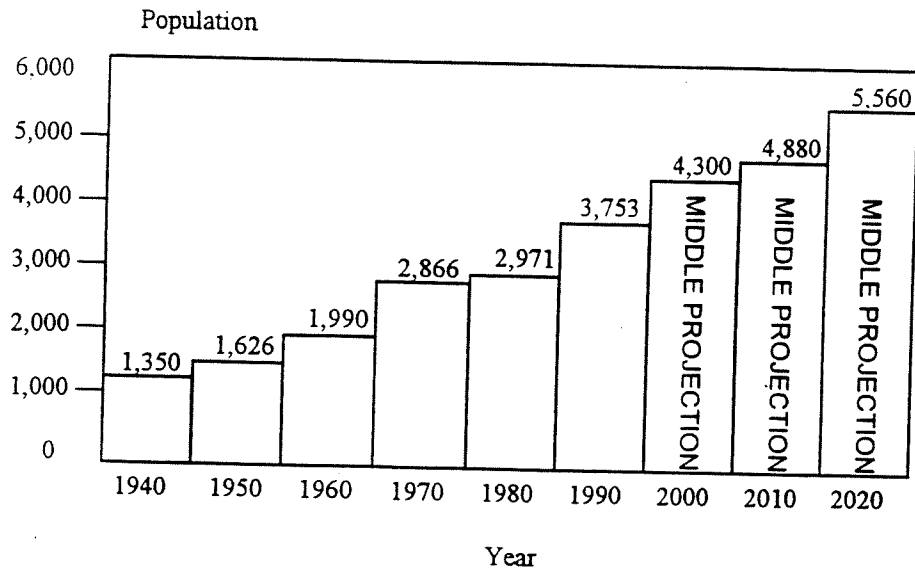
POPULATION AND HOUSING:

Essential to the plan for wastewater facility needs is the examination of past population trends and projected increases in population, especially as they affect the need for housing.

Population Trends

Between 1940 and 1990, East Rockhill Township population increased from 1350 to 3753 persons, which was an increase of 178 percent. The greatest growth in population occurred during the 1960's with a 44 percent increase, totalling 876 persons. Population growth during the 1970's was an uncharacteristic rate of 3.7 percent. During the 1980's, population growth rebounded to more historical level of 26 percent. Much of the population and growth is concentrated around Perkasio Borough and serviced by public sewers.

Figure 2-1
East Rockhill Township Population Trends
Census Figures and Projections 1930-2020
Source: Bucks County Planning Commission 1994



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Population Projections

All plans require an indication of anticipated population change and its impact on housing to determine anticipated needs, in terms of timing and location of future development activity. Population projections have been developed by the Bucks County Planning Commission (BCPC) through the year 2020.

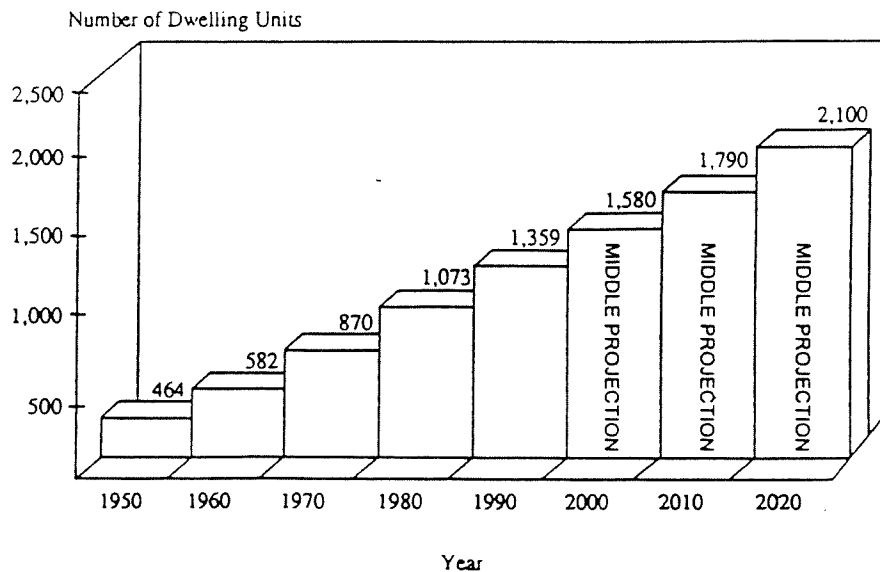
Because population change is difficult to predict, the County provides a range on which to base future planning decisions. The middle range projected for East Rockhill Township is indicated on Figure 2-1. Based upon the projections of the BCPC, a 14.6 percent increase in population could be expected by the year 2000.

Housing Trends

A national trend over the last 20 years has been a decline in household size (persons per household). Declining birth rates, smaller family sizes, more people living alone, and people living longer are all factors which have contributed to this trend resulting in an increase in the number of housing units required to serve the same size population.

By 1990, the average household size in East Rockhill Township declined to 2.92 persons per household. Due to the decrease in household size, the rate of growth in the housing stock over the last two decades has been slightly greater than the growth rate in population. (The period from 1970 to 1980 is an exception to the slightly greater growth rate of housing stock. During this period, the number of dwelling units increased 23.3%, while the population grew at a rate of 3.7%.) Figure 2-2 displays the dwelling unit figures for East Rockhill Township since 1950.

Figure 2-2
East Rockhill Township Dwelling Unit Trends
Census Figures and Projections 1950-2020
Source: Bucks County Planning Commission 1994

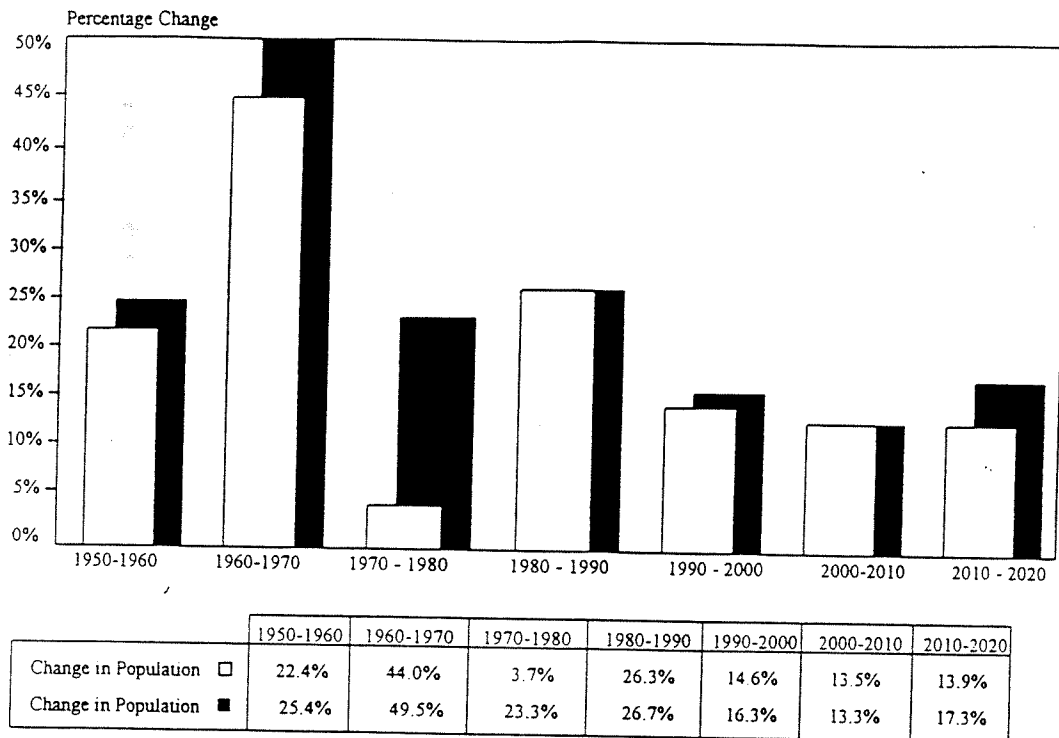


Housing Projections

Figure 2-3 illustrates the growth rate of population versus household size dwelling units. As household size decreases, the number of dwelling units required to serve a population size increase.

Figure 2-3
Comparison Dwelling Unit and Population Trends
For the years 1950-2020

Source: Bucks County Planning Commission



Increases in the number of dwelling units are significant to wastewater planning since each new dwelling must be provided with wastewater disposal. The projected increases must be considered when identifying the future wastewater needs in the Township.

SOILS:

There are numerous restrictive soils in East Rockhill Township that limit development because of their drainage characteristics or their erodible nature. Restrictive soils in terms of suitability for sewage disposal systems are identified on Figure 2-4 and 2-5. Proper site engineering and construction practices can reduce many of the hazards associated with these soils. However, limits to the suitability for on-lot sewage disposal systems are not so easily overcome.

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Wet Soils

Wet soils exhibit poor drainage and a seasonal high water table of 0 to 18 inches from the surface with moderate to slow permeability and run-off. For regulatory purposes, wet soils may be defined as poorly drained soils, where the depth to mottling is less than ten inches. Mottling results from prolonged saturation of the soil, leaving irregular markings and spots of different colors within the soil horizon. These conditions predominate in the watershed of East Branch Perkiomen Creek (particularly east of the creek) and in scattered bands throughout the Brunswick and Lockatong lithofacies. The following soils series found on slopes of 8 percent or less represent wet soil conditions in East Rockhill Township:

Abbottstown	- AbA, AbB
Bowmansville	- Bo
Doylestown	- DoA
Hatboro	- Ha
Towhee	- ToA, ToB

Wet soils pose basic limitations for development due to the low permeability of the soil, the low run-off rates, and the subsurface saturation conditions. Low permeability affects the functioning of on-lot septic systems, leading to the well water contamination, exposed effluent, foul odors and improperly functioning toilets. These conditions are generally unsuitable for subsurface sewage disposal and will not be permitted by the Bucks County Department of Health in accordance with the Pennsylvania Sewage Facilities Act (Act 537 of 1966, as amended).

Erodible Soils

Erodible soils exhibit a low resistance to the movement of water. In East Rockhill Township, erodible soils that would limit development include the following soil series and slope conditions:

Abbottstown	- AbC
Lehigh	- LhC, LID
Mount Lucas	- MoD
Penn-Klinesville	- PkC ₃
Readington	- RdC

These highly erodible soils can be found in the Brunswick formation and predominate on both sides of the Three Mile Run floodplain. They are frequently coincident with steeply sloped areas on the western side of the creek.

Shallow Soils

Shallow soils are characterized by shallow depth to bedrock, low moisture holding capacity and density of bedrock. For regulatory purposes, shallow soils may be defined as the presence of bedrock less than twenty inches from the surface. These conditions are frequently found in the following soil series and slopes:

Klinesville	- KIB, KIC, KID
Penn	- PeA, PeB
Penn-Klinesville	- PhB ₃
Penn-Lansdale	- PnB
Reaville	- ReA, ReB, ReC, ReD
Weikert	- WeD

CHAPTER 2

Shallow soil conditions exist principally in the Brunswick formations of East Rockhill Township between Three Mile Run Road and Ridge Road and below Ridge Road east to the East Branch Perkiomen Creek floodplain.

The major development limitation of these soils is the short distance to bedrock, which does not provide a sufficient medium for renovation of sewage effluent from conventional on-lot septic systems. Sand mounds are required unless public sewer service is available. Under current PADEP regulations, no on-site systems are permitted when the shallow soils also exhibit rapid permeability.

Soil Suitability for Sewage Disposal Systems

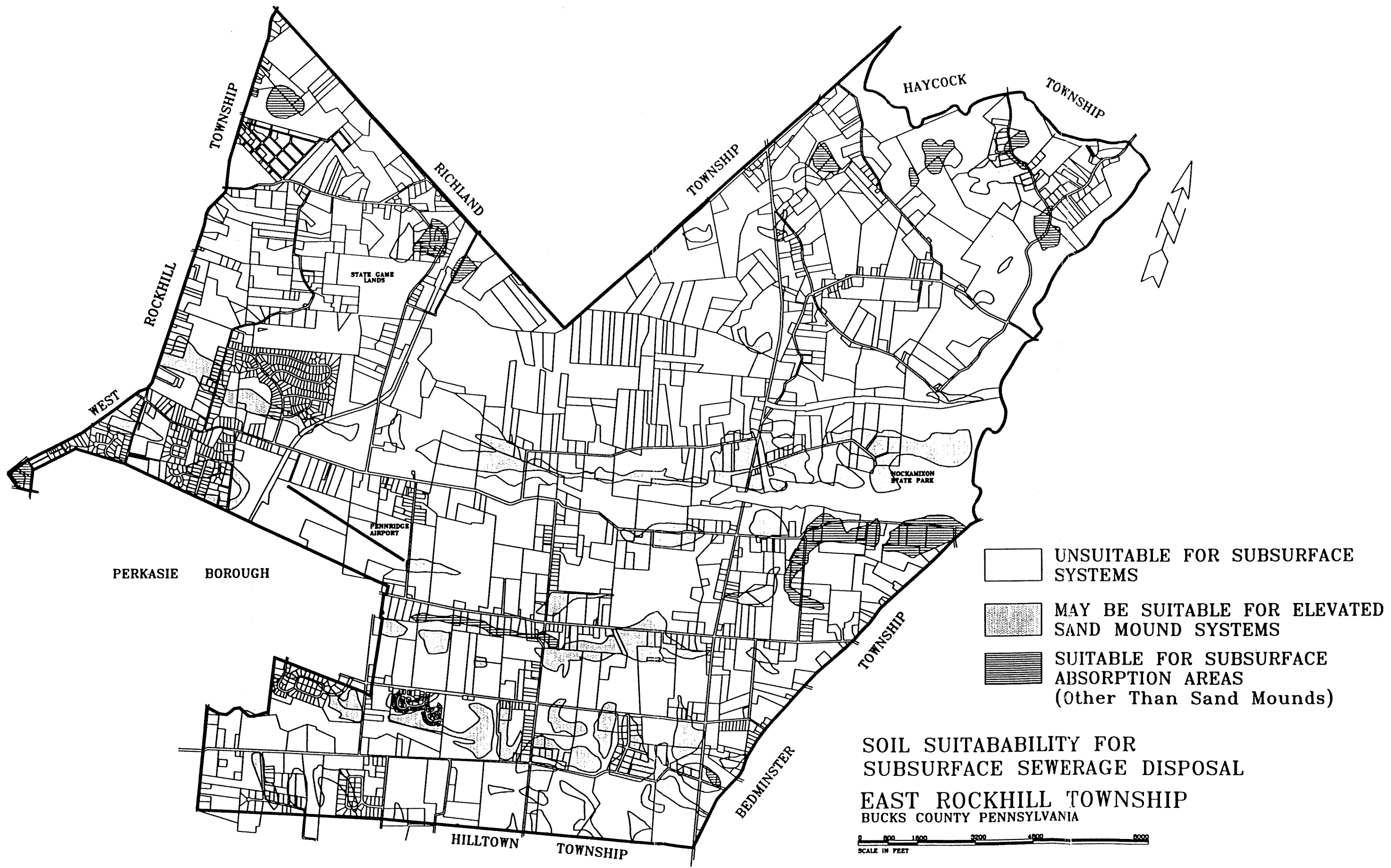
The availability of adequate sewage disposal systems is a major factor limiting development in East Rockhill Township. In the absence of public sewer service, the soil's suitability for subsurface disposal systems or for spray applications becomes critical. Adequate surface and subsurface disposal depends upon the capacity of the soil to absorb and filter (or renovate) effluent. Any soil condition that hinders the filtering process contributes to system failures and causes health hazards, such as contaminated drinking water, exposed effluent, and foul odors. The soil's filtering ability is limited by permeability, stoniness, depth to bedrock, and seasonal high water table, as well as by steep slope and flooding conditions. Based on these factors, soils have been rated for their suitability for subsurface and spray irrigation systems by PADEP and SCS. Figure 2-4 and 2-5 identify suitability of soils in East Rockhill Township for the two types of sewage disposal.

In Figure 2-4, suitability for subsurface absorption systems is generally indicated. The darkest hatched areas are suitable for subsurface absorption areas including standard trenches, seepage beds, and sand filters. The medium grey areas are those soils which may be suitable for elevated sand mounds. Figure 2-4 provides only a general indication of soil suitability, on-site testing of percolation rates and depth to limiting zone are the final determinant of soil suitability as required by the Bucks County Department of Health for permitting of all systems.

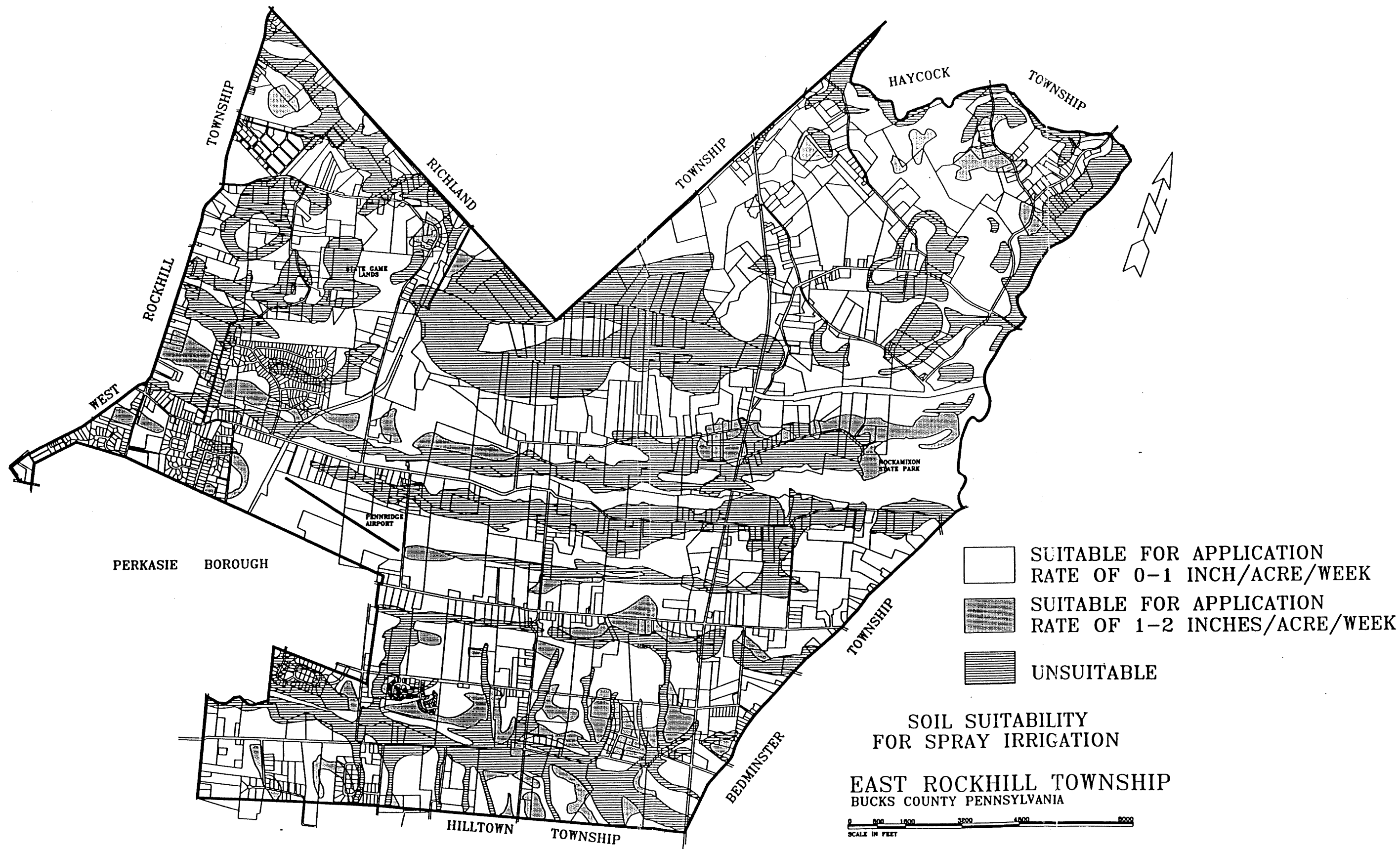
Figure 2-5 presents the soil suitability for spray irrigation. Three rates of application are mapped indicating the various allowable amounts of effluent that can be sprayed per acre per week. The lower application rate (0 to 1 inch) is permitted for more limiting soils. Areas suitable for higher rates could handle larger amounts of effluent and may be suitable for larger systems, such as a community system serving several residences.

Table 2-6 lists the major soil types found in East Rockhill Township and their characteristics relative to on-lot sewage disposal.

FIGURE 2-4



SOURCE: 1987 PENNRIDGE AREA WASTEWATER FACILITIES PLAN
PREPARED BY THE BUCKS COUNTY PLANNING COMMISSION



SOURCE: 1987 PENNRIDGE AREA WASTEWATER FACILITIES PLAN
PREPARED BY THE BUCKS COUNTY PLANNING COMMISSION

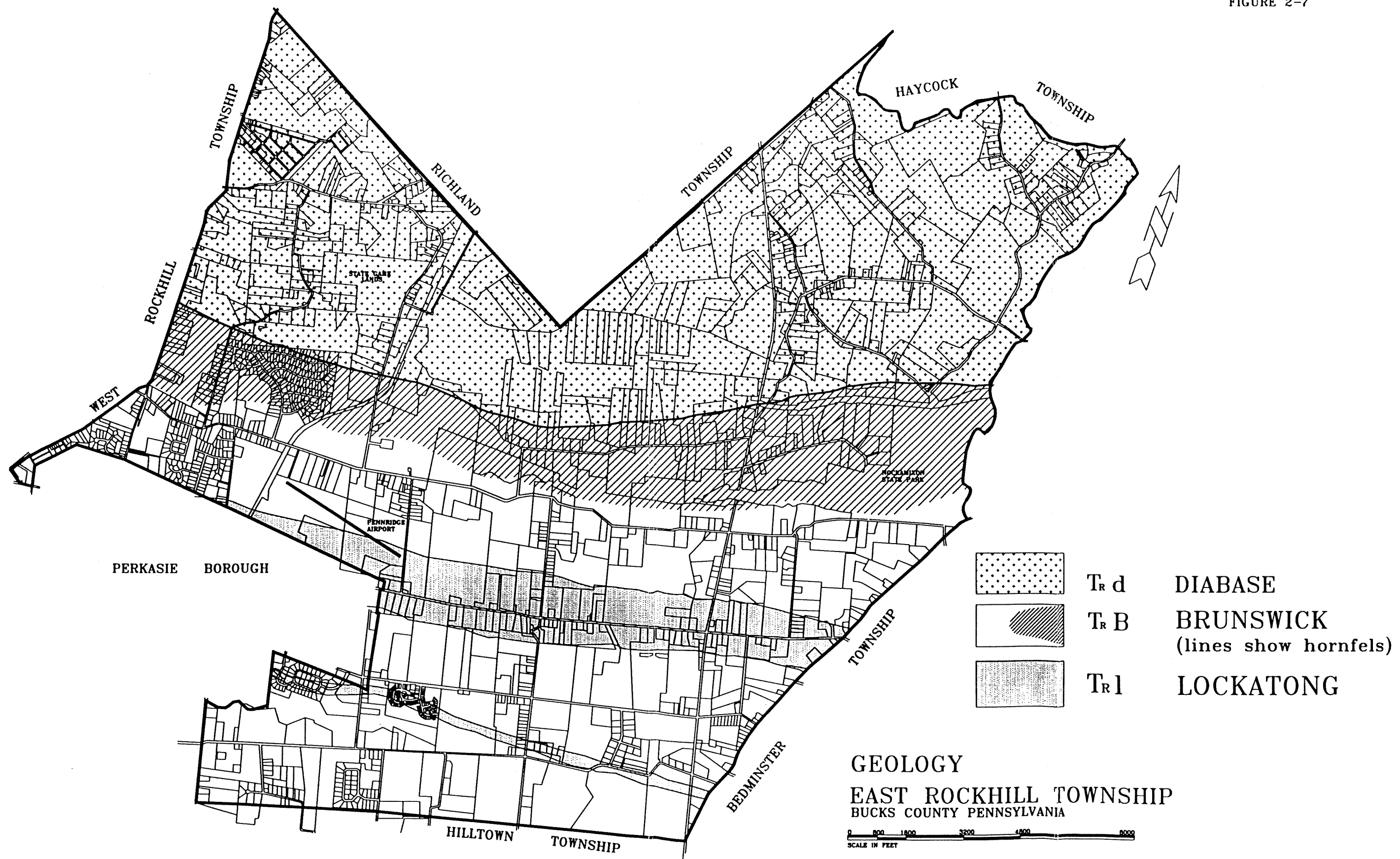
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**TABLE 2-6
MAJOR SOILS TYPES IN EAST ROCKHILL TOWNSHIP
AND THEIR CHARACTERISTICS**

Soil Type	Suitability For Septic Disposal	Suitability For Sand Mounds	Suitability For Spray Irrigation	Wetland Soil	Alluvial Soil
AbA Abbottstown	No				
AbB Abbottstown	No				
AbC Abbottstown	No				
Ae Alluvial Land	No				Yes
BeC Bedington	Moderate				
Bo Bowmansville	No			Yes	Yes
CwB Culleoka-Weikert	No				
DoA Doylestown	No			Yes	
DoB Doylestown	No			Yes	
Ha Hatboro	No			Yes	Yes
KIB Klinesville	No	Yes			
KIC Klinesville	No	Yes			
KID Klinesville	No				
LdB Lansdale	No				
LdD Lansdale	No				
LhB Lehigh Silt	No	Yes			
LhC Lehigh Silt	No				
LID Lehigh Stony	No				
MIA Mt. Lucas Silt	No		Yes		
MIB Mt. Lucas Silt	No		Yes		
MoB Mount Lucas Stony	No				
MoD Mount Lucas Stony	No				
NeB Neshaminy Silt	Moderate				
NhB Neshaminy Stony	No				
NhD Neshaminy Stony	No				
PeA Penn	No				
PeB Penn	No				
PeC Penn	No				
PhB3 Penn-Klinesville	No				
PhC3 Penn-Klinesville	No	Yes			
PhB Penn-Lansdale	No				
RdA Readington	No	Yes	Yes		
RdB Readington	No	Yes	Yes		
RdC Readington	No	Yes	Yes		
ReB Reaville	No				
ReC Reaville	No				
Ro Rowland	No				Yes
ToA Towhee Silt	No			Yes	
ToB Towhee Silt	No			Yes	
TwB Towhee Stony	No			Yes	
Uc Urban Land	No				
UIB Urban Land - Lansdale	Yes				
UIC Urban Land - Lansdale	Yes				
WcD Weikert-Culleoka	No				

Source: Soil Survey of Bucks and Philadelphia Counties prepared by the United States Department of Agriculture Soil Conservation Service.

FIGURE 2-7



SOURCE: 1987 PENNRIDGE AREA WASTEWATER FACILITIES PLAN
PREPARED BY THE BUCKS COUNTY PLANNING COMMISSION

CHAPTER 2

GEOLOGIC FEATURES/GROUNDWATER:

The underlying geology of an area can affect the suitability of a site for subsurface system operations. The primary consideration of geology regarding wastewater disposal is potential contamination of the water supply contained within the various rock formations. In East Rockhill Township, three major formations occur, all formed during the Triassic Period: diabase (igneous intrusions), Brunswick (sedimentary shale and sandstone), and Lockatong (sedimentary argillite). Figure 2-7 locates these geologic formations.

Diabase Formation

This formation covers more than one third of East Rockhill Township, stretching across the extreme northern and western portions of the Township. Diabase-- or traprock-- is a very dense, dark, crystalline rock that is relatively impervious to water and highly resistant to erosion and weathering. Diabase produces the poorest, least reliable aquifers in Bucks County since its capacity to store and transmit water is extremely low. This formation yields little water within 100 feet of the surface, and unlike other formations in the county, higher yielding aquifers in diabase are rarely found below that depth. Much of the area underlain by diabase is wooded rather than cultivated because of stony, rough terrain.

Brunswick Formation

The Brunswick formation, interlaced with bands of Lockatong, comprises the majority of the eastern and southern portions of the Township. A sedimentary rock composed of relatively soft red shales and sandstones, the Brunswick formation is less resistant to weathering and is generally more porous than Lockatong, enabling greater storage of water. Although they are considered the thickest formation in Bucks County, Brunswick rocks are more permeable than diabase, transmitting recharge water along bedding planes and fractures. Well yields increase significantly at depths of 200 feet.

Adjacent to the diabase intrusion, the shale has been baked to a hard, dark-colored hornfels. This metamorphic rock (averaging one half of a mile in width as it crosses the Township) may yield a significant source of groundwater where natural recharge is sufficient.

Lockatong Formation

More resistant to weathering than the Brunswick, the Lockatong formation defines two distinctive ridges in East Rockhill, one along Ridge Road (up 2,000 feet wide at its widest part) and a smaller band north of, and parallel to, East Branch Perkiomen Creek. Composed of finely grained, tightly cemented sediment, Lockatong is characterized by a gray to black argillite. Recharge occurs only where the formation has been faulted or exposed to weathering. Its non-porous nature provides very limited storage capacity, generally resulting in low-yielding aquifers. However, some wells drilled along fault lines or fractures can yield reliable amounts of water. There is also the potential for higher yielding wells below the northern dip of the Lockatong homocline where it is interbedded with the Brunswick.

TOPOGRAPHY:

Topography is another important consideration which requires analysis to determine site suitability for wastewater disposal as well as a controlling factor when evaluating wastewater collection and conveyance systems to serve a given area.

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Topography of East Rockhill Township may be characterized by two major systems: the hilly terrain of the diabase intrusion and the alternating ridges and valleys that express the parallel Lockatong and Brunswick formations. Elevations in the Township range from 310 feet above mean sea level at the westernmost edge of East Branch Perkiomen Creek to the top of Rock Hill at 840 feet, where the steepest terrain may be found.

Slopes are expressed as a percentage indicating that height of the vertical rise relative to a constant horizontal distance of 100 feet. A 15 percent slope, for example, is equivalent to a rise of fifteen feet over a distance of 100 feet. Areas with 0 to 8 percent slopes are defined as slight, 8 to 15 percent as moderate, 15 to 25 percent as steep, and 25 percent and greater as very steep. Major areas of steep and very steep slopes exist within East Rockhill Township on the eastern rise of Rock Hill, along the western shoreline of Lake Nockamixon, and in the area south of Ridge Road defining the southeastern boundary of the Tohickon Creek watershed.

Although building on sloped land is more difficult and expensive than on flatter terrain, hillside development offers attractive opportunities for site layout, solar access on south facing slopes, and architectural design using cantilevered and stilt construction. However, these benefits can be realized only within the limitations that slopes present to development.

The topography of a site is an important consideration which must be evaluated with respect to the particular wastewater disposal or conveyance application. Slope requirements of Chapter 73 of DEP's Rules and Regulations are based upon the type of system. Slopes exceeding 15 percent present serious constraints to the successful operation of subsurface soil absorption systems. DEP requires modified system design on slopes between 15-25 percent. In areas where the slope exceeds 25 percent, the typical subsurface absorption systems may not be used. Areas in excess of 25% may be used as a disposal area for spray irrigation type systems in some instances depending on other site characteristics such as vegetation, soils, and geology.

In level areas, Chapter 73 standards require that there be a minimum of 48" of suitable soil beneath the system to properly dispose of the pollutants. Where slope is encountered, this standard may need to be increased. If slope is encountered, the use of a pressure dosed trench system or some other form of absorption technology may perform better than the trench.

WATER SUPPLIES:

Private wells are the only source of water supply for the majority of property owners within the Township. Groundwater, and use of individual on-lot wells, will continue to be the primary source of water outside of the Development District.

Public water supply is available and serves a significant portion of the Development District located adjacent to Perkasio Borough. Perkasio Borough Authority (PBA) operates five (5) wells within the Township and supplies water to several developments (Pines at Pennridge, Bridgeview, Weidner, Stoneycree, Fenley Tract) and many individual parcels. In addition, PBA provides public water to the Pennridge School District complex located on Fifth Street, and several non-residential properties. PBA has not presented a master plan to the Township of where it intends to extend services in the future.

North Penn Water Authority (NPWA) operates two (2) wells within the Township and provides public water service to approximately 196 single family dwellings located in the Ridge Run Development (Tohickon Watershed). NPWA has not presented a master plan to the Township of when it intends to extend services in the future.

In 1986, East Rockhill Township adopted Ordinance 103, which established a Water Department and authorized studies to identify potential sources of water supply and locations for

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distribution lines to accomplish the objective of providing exclusive water services to residents of the Township. The Ordinance authorized the officers of the Township to enter into agreements to acquire by purchase, lease, or otherwise, such real property as necessary to install a system of water distribution, to contract with any private company, municipality, or Authority owning a waterworks system for a supply of water within the Township, and to purchase or acquire any privately owned waterworks system. As of this date, the Township does not own or operate any water system.

FLOODPLAINS AND FLOODPLAIN SOILS:

The floodplains and floodplain soils of East Rockhill Township border streams and tributaries of the Tohickon and East Branch Perkiomen watersheds. The major floodplains adjoining East Branch Perkiomen Creek, Three Mile Run, and Tohickon Creek are designated on the official Flood Boundary and Floodway Map prepared in 1977 by the Federal Emergency Management Agency (FEMA). The floodplain or alluvial soils bordering the smaller creeks and tributaries are mapped on the Soil Survey for Bucks and Philadelphia Counties by the Soil Conservation Service. These soils include Alluvial land, Bowmansville silt loam, Hatboro silt loam, and Rowland silt loam. Both designated floodplains and floodplain soils are delineated on Figure 2-8.

For the purposes of the National Flood Insurance Program (NFIP), a floodplain is defined by the 100 year or base flood, which has a 1-percent chance of being equalled or exceeded in a given year. A floodplain is further delineated into floodway and flood fringe areas as follows:

Floodway -- the watercourse channel and adjacent land areas which must be reserved to carry the base flood without cumulatively increasing the base-flood elevation more than a designated height. One foot is the maximum increase allowed by the NFIP.

Flood Fringe -- the part of the base floodplain outside of the floodway.

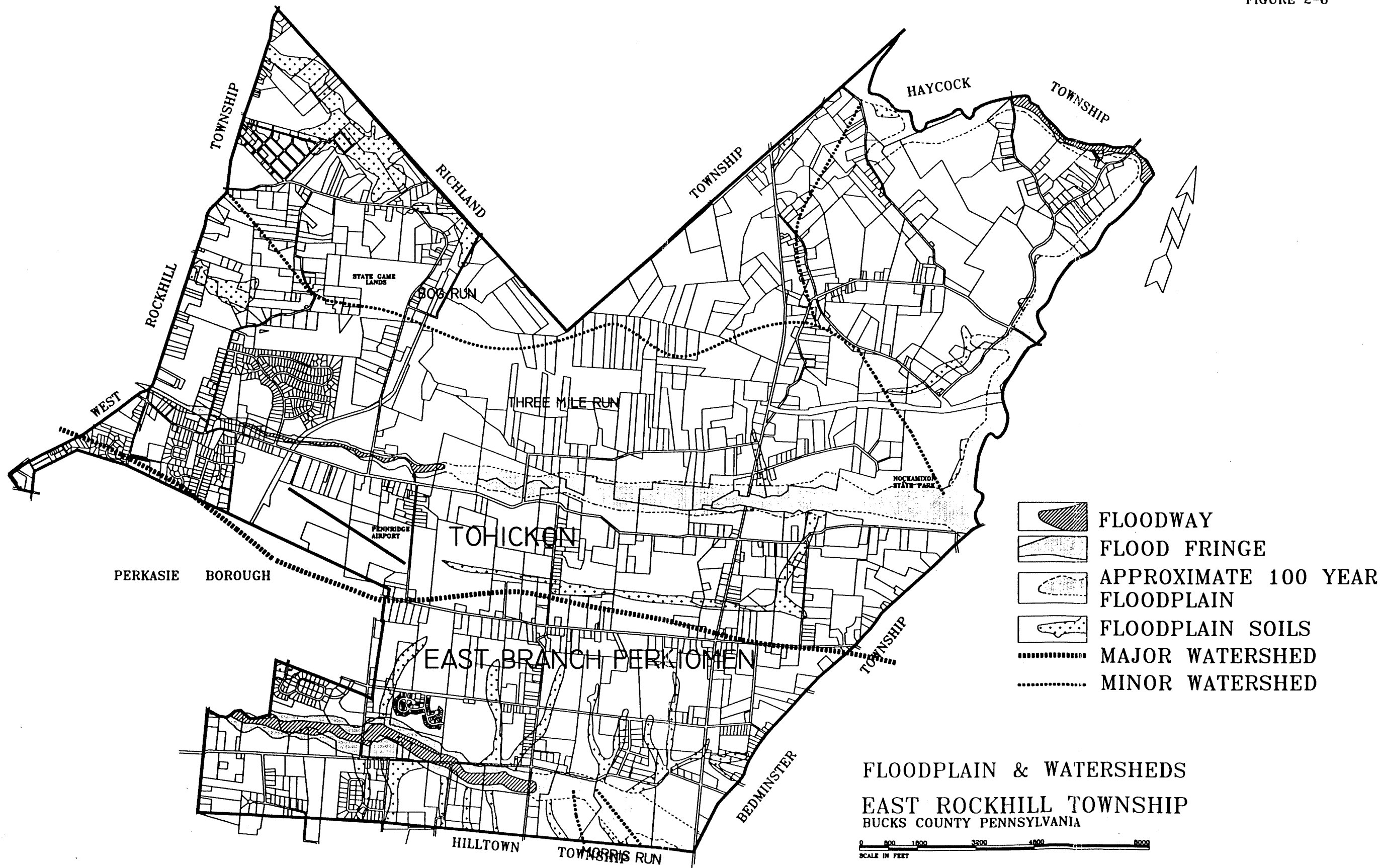
As noted on Figure 2-8, there are also approximate 100-year flood fringes where FEMA has not determined the extent of the floodplain through a detailed study and mapping.

The floodways and flood fringes are both parts of the floodplain. The floodway is derived from a calculation which assumes complete obstruction of the flood fringe; it theoretically shrinks the floodplain limits until a 1-foot rise in the base-flood elevation is produced. In this reserved area, obstructions causing any rise in the base flood elevations are prohibited by the NFIP. The flood fringe, on the other hand, may be developed under NFIP regulations; however, structures must be elevated or flood-proofed up to the base-flood elevation.

Floodplain soils are important in areas where FEMA has not identified and calculated the floodway or flood fringe. In these unmapped areas, the floodplain soils indicate where flooding has occurred in the past. Unless a hydrological study is undertaken to prove that flooding has not occurred in recent times, these floodplain soils should be considered part of the floodplain and regulated as a floodway.

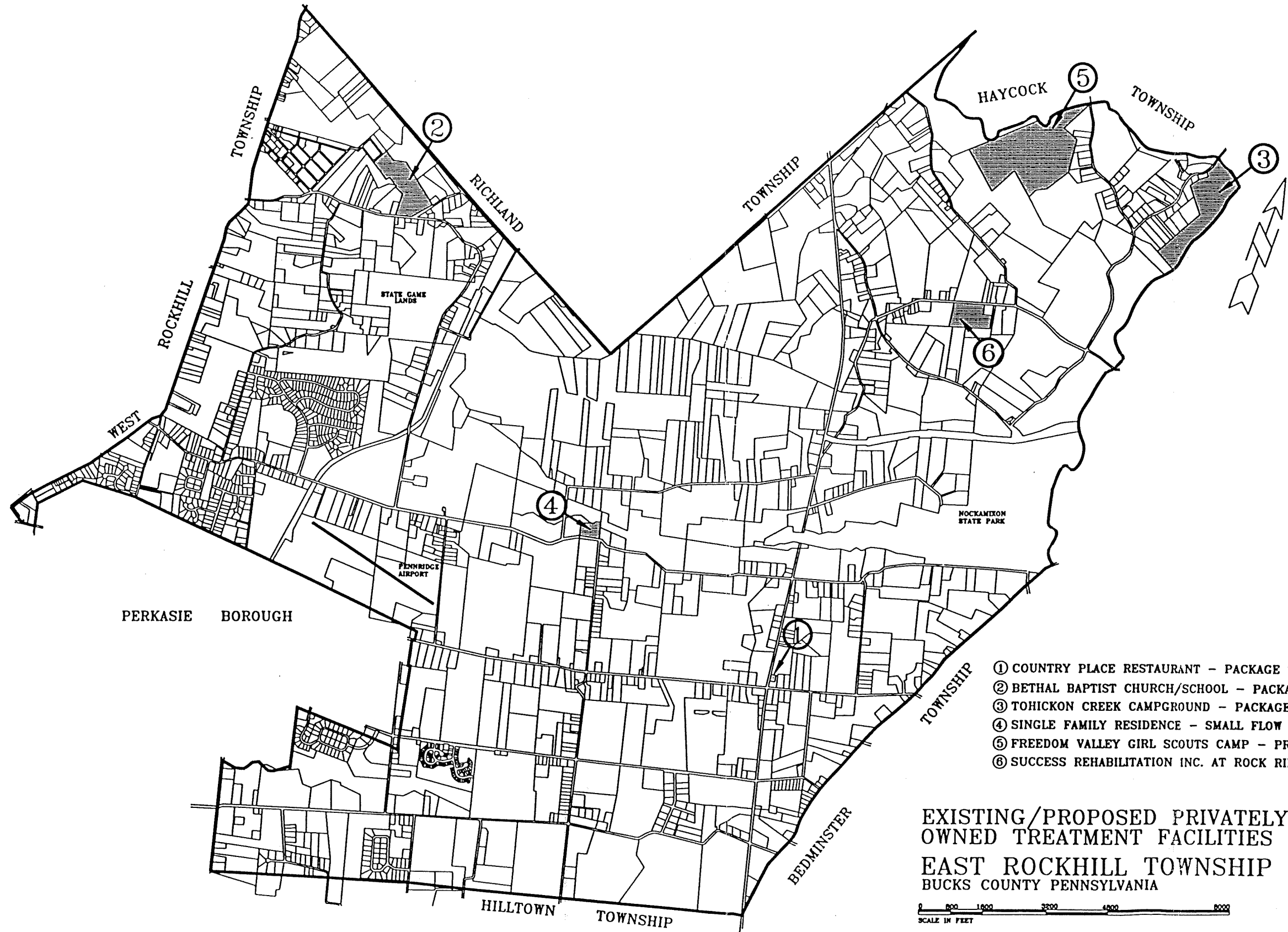
The primary function of floodplains is to accommodate floodwater. Some floodplain areas absorb and store large amounts of water, later becoming source of aquifer recharge. The natural vegetation supported by moist floodplains helps trap sediment from upland surface run-off, stabilize stream banks (thereby reducing soil erosion), and provide shelter for wildlife and proper stream conditions for aquatic life.

FIGURE 2-8



FLOODPLAIN & WATERSHEDS
EAST ROCKHILL TOWNSHIP
BUCKS COUNTY PENNSYLVANIA

SOURCE: 1987 PENNRIDGE AREA WASTEWATER FACILITIES PLAN
PREPARED BY THE BUCKS COUNTY PLANNING COMMISSION



- ① COUNTRY PLACE RESTAURANT - PACKAGE TREATMENT PLANT
- ② BETHAL BAPTIST CHURCH/SCHOOL - PACKAGE TREATMENT PLANT
- ③ TOHICKON CREEK CAMPGROUND - PACKAGE TREATMENT PLANT
- ④ SINGLE FAMILY RESIDENCE - SMALL FLOW TREATMENT PLANT
- ⑤ FREEDOM VALLEY GIRL SCOUTS CAMP - PROPOSED PACKAGE TREATMENT PLANT
- ⑥ SUCCESS REHABILITATION INC. AT ROCK RIDGE - PACKAGE TREATMENT PLANT

**EXISTING/PROPOSED PRIVATELY OWNED TREATMENT FACILITIES
EAST ROCKHILL TOWNSHIP
BUCKS COUNTY PENNSYLVANIA**

0 500 1000 2000 4000 8000
SCALE IN FEET

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The major objective of floodplain regulation is to reduce flood hazards. Structures built in the floodplain not only face direct risks of flood damage but also create obstructions in the floodplain that raise flood levels and increase water velocities. This is especially true in the floodway portion of the 100-year floodplain, where high velocity flows occur.

Even development within the flood fringe, while permitted by the NFIP, is discouraged by FEMA. Filling in of the fringe areas can cause the loss of major areas that store floodwaters, increasing flood levels; changing drainage patterns; and increasing the rate and amount of run-off. Such flood-fringe development can also increase the magnitude and frequency of normally minor floods, increasing damage to existing structures.

These floodplain limitations do not preclude development of all kinds, however. Agricultural uses, private and public recreational uses (e.g., golf courses, ball fields, driving ranges, picnic grounds, wildlife and nature preserves, swimming areas, hunting and fishing areas, hiking trails), and uses incidental to residential structures (e.g., lawns, gardens, and play areas) should be encouraged.

WETLANDS:

Wetland areas are important local resource areas since they reduce potential flood damage, provide stormwater runoff controls, are important vegetation and wildlife habitats, protect surface water quality by purifying overland flows of water, and are areas where recharge of the groundwater reservoirs occur. For these reasons, and because the loss of wetlands has become an important environmental concern, these areas are protected by federal and state regulations. Proposed development activity which will impact these areas must be reviewed and approved by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the State Department of Environmental Protection.

Wetlands within East Rockhill Township are delineated on maps titled, National Wildlife Inventory Maps, published by the U.S. Fish and Wildlife Service and available from the Bucks County Planning Commission. The identified wetlands from these maps are shown on Suitability For On-Site Sewage Disposal System soil overlays, in conjunction with other site characteristics. These maps are not absolute indicators of wetland areas, however, since the locations of the identified wetlands are based on high altitude aerial photography and some field checking. Verification of wetlands and their boundaries requires site specific analysis of hydric soils and vegetation by a registered engineer or soil scientist, and review by the Army Corps of Engineers and/or Pennsylvania Department of Environmental Protection. A permit is required for all development activity in a wetland area through the federal and state agencies, as well as East Rockhill Township.

In terms of wastewater planning, it is essential that treatment systems in or near wetlands do not contaminate or interfere with the natural functions of these resources. Wetlands should be buffered from potential contamination sources, such as conventional on-site treatment system components. While it is important to protect wetlands from potential wastewater system problems, wetlands have been used as components of some innovative on-site treatment systems. This technology uses the wetland as a final purification component and supplies nutrients and water to support these local resource areas. This type of technology can be quite successful if designed and maintained correctly, thereby achieving retention of local groundwater supplies.

CENTRALIZED WASTEWATER FACILITIES:

There are four areas of East Rockhill that are served by public sewers. All these are connected to the PWTa treatment plant in Sellersville via the South-side Interceptor that runs along

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East Branch Perkiomen Creek. The oldest sewer line serves Deibler Elementary School on Schwenk Mill Road and the senior and junior high schools on Fifth Street. This line is maintained by the Pennridge School District. A second sewer line runs eastward along Three Mile Run Road from Old Bethlehem Pike to a pumping station at Schoolhouse Road. This line also serves the properties fronting on Schoolhouse Road before it gets to the pumping station. The third area of the Township with public sewer service is the watershed of East Branch Perkiomen Creek west of Blooming Glen Road. Properties on Blooming Glen, Branch, and Seven Corner roads are connected to the lines in this area. The fourth area is a small section at the western end of the Township between Perkasio and Sellersville boroughs. These latter three sewer lines are maintained by East Rockhill Township which is allocated a flow capacity of 371,000 gallons per day (gpd) at the Pennridge Wastewater Treatment Authority treatment plant. The sewer lines are maintained by East Rockhill Township. Existing sanitary sewer lines located within the Township are shown on Figure 2-8.

The sewer line on Three Mile Run Road presents a situation that deserves special attention. As with most of the lines in the Pennridge Area, the sewer line transports sewage to the treatment plant in Sellersville, where the treated effluent is released into East Branch Perkiomen Creek. However, the properties served by the line obtain their water supply through groundwater withdrawals from Three Mile Run watershed, which the Delaware River Basin Commission is monitoring for excessive withdrawals. Thus, water is not returned to the watershed of original withdrawal, where it could recharge the aquifer.

East Rockhill is allocated a flow capacity of 371,000 gallons per day in the PWTAs treatment plant. Of this capacity, 15,000 gallons are currently used by institutions and 171,175 gallons are used by residences and other connections. The remaining 186,175 gallons per day allocated to East Rockhill Township were purchased. However, only 100,000 gallons per day are available for use based upon PWTAs calculations. (This matter is currently being litigated in Bucks County Court of Common Pleas)

While there are no known community sewer systems or spray irrigation systems within the Township, holding tanks are located at the following properties:

1. Emil's Restaurant
2. Kellersville Club
3. Roher - 1004 Old Bethlehem Pike
4. St. Peters
5. Seiger (TMP #12-13-10-1)
6. Bernies Enterprises (TMP #12-8-21-3)
7. Old Wagon Wheel Inn
8. Effrig, Jr. - 2513 Old Bethlehem Pike
9. Chant - 2525 Old Bethlehem Pike
10. General Crushed Stone

Additionally, a number of existing alternative systems serving individual residential and non-residential uses exist in the Township. These systems are displayed on Figure 2-9 and described in Table 2-10 below.

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**Table 2-10
Existing Wastewater Treatment Facilities**

<u>Location / Owner's Name</u>	<u>Use / System Description</u>
TMP #12-009-259 (Country Place Restaurant)	Commercial - Treatment Plant
TMP #12-005-001-001 (Bethel Baptist Church/School) Institutional	Industrial - Treatment Plant
TMP #12-006-089 (Tohickon Creek Campground)	Recreational - Treatment Plant
TMP #12-009-124 (Single Family Residence)	Single Family - SFTF
TMP #12-6-37 (Success Rehabilitation, Inc. at Rock Ridge)	Commercial - Treatment Plant

Additionally, Nockamixon State Park has a wastewater treatment plant. The plant is located outside East Rockhill Township, but a sewer line is within the Township, although the line does not extend beyond the park boundary. The plant has capacity in excess of the projected needs of the park, but it is unlikely that this capacity will be made available to serve properties in East Rockhill Township. The Pennsylvania Department of Parks and Recreation has a firm policy of reserving the plant solely for use within Nockamixon State Park and for use by the Upper Bucks Vocational School.

There are presently two (2) innovative/alternative systems proposed in the Township. Both innovative/alternative systems have received Township Planning Module approval. These systems are displayed on Figure 2-9 and described in Table 2-11 below.

**Table 2-11
Proposed Wastewater Treatment Facilities**

<u>Location / Owner's Name</u>	<u>Use / System Description</u>
TMP #12-6-41 (Freedom Valley Girl Scout Camp)	Recreational - Treatment Plant

SYSTEM MALFUNCTIONS:

One of the primary functions of a wastewater planning program is to address problems associated with the inadequate operation of sewage treatment systems. Ideally, wastewater treatment systems are designed to collect, treat, and recycle wastewater in a safe and environmentally sensitive manner. Unfortunately, many systems operate satisfactorily for a while and then, for a variety of reasons, begin to malfunction, either periodically, on a continuous basis. If systems do fail, no matter what the cause, system failure is a nuisance and health hazard which needs to be identified and corrected. Many older systems have inadequately sized septic tanks with capacities of 250 to 500 gallons. These small tanks provide inadequate treatment and allow solids to enter the drain field. Inadequate septic tank capacity and hydraulic overload are primary causes of failure in older systems.

Septic system failure may result from problems with the design, construction, operation or maintenance of the system. Design, review, permitting and construction inspection of septic systems is administered by the Bucks County Health Department in accordance with the regulations of the Department of Environmental Protection (DEP). The Township is involved in the permitting of sewage systems by preparing wastewater plans which define where various types of systems may be utilized and by participating in the development review process.

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Proper operation and maintenance of a system is essential if the system is to continue to operate as designed and built. With individual on-site systems this is primarily the responsibility of the individual homeowner. Many problems occur as a result of improper system operation and maintenance, since many homeowners are not aware of, or neglect, basic system requirements. To address this situation, municipalities are required by Act 537 to adopt sewage management programs. With community systems, the responsibility may rest with a homeowners association, or be the responsibility of the municipality (as agreed upon in the development review process). Whichever form the ownership takes with community systems, it is important to have a management plan that deals with all responsibilities regarding normal system operation and maintenance, plus what will happen in the event of system failure.

The following conditions are the most common conditions experienced in the failure of a wastewater system:

Hydraulic overload is the most frequent condition resulting in the failure of a system. This condition is the result of the delivery of too much wastewater to treat in the soil absorption system. If this occurs, the saturated soil cuts off the oxygen, further aggravating the problem. Hydraulic overload can result from a change in water using habits of the system operators, if water use exceeds the design capacity of the system, or if the drain field is inundated with excessive surface or groundwater.

Physical damage can occur if heavy equipment or construction activity occurs over the system crushing collection lines or compacting the soil in the absorption area. Damage can also result due to freezing during a cold winter if there is no insulating snow, or if the system is seldom used.

Improper design of the soil absorption system can result if the test performed to identify the site conditions, which are used to determine the system design, do not show all potential problems. The soil percolation test is used to determine the absorption rate of the soil, the soil profile evaluation determines the depth to bedrock or other limiting factors, such as the seasonal high groundwater table.

Established procedures, as defined by Act 537, for performing percolation tests, may not show overall absorption rates for the entire drainage areas since they are performed in small, somewhat shallow ditches. Often there is an underlying soil which had poor drainage capabilities, which can limit drainage capabilities, that may not be detected through normal testing procedures. If the percolation test does not pick up potential limits, the system may be undersized, leading to eventual hydraulic overload and failure.

If a seasonal soil profile evaluation does not accurately predict the potential height of the groundwater table, seasonal failures will occur as the water saturates the absorption area.

Improper installation of the wastewater treatment systems can result in failure for a number of reasons. In the construction of a collection system it is important to ensure that all of the components are either level or have the proper slope to allow correct flows. If a collection line is too steep or the distribution system is not level, the wastewater will be confined to certain portions of the system, overloading those areas.

During the construction of the site and the wastewater system, heavy equipment can cause soil compaction. Also, the installation and excavation of a system in wet period can result in excessive soil compaction. Soil compaction will impede the absorption of wastewater and result in system failure.

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Uneven distribution of the system components can occur if excessive settling occurs after installation or as a result of freezing/thawing action shifting the components. This can result in the overloading of portions of the system, resulting in the system failure.

Solids clogging of the absorption system can occur if the septic tank does not remove the solids from the wastewater, as it was designed to do. If the septic tank fills up the solids, grease and scum can flow through the system into the soil absorption area clogging the system, resulting in failure. It is necessary to pump out systems periodically to avoid this condition.

To identify the problems, assessment surveys were conducted as part of previous plan updates. Surveys were conducted in the following areas: Meadow Lane, Schwenk Mill Road, Keelersville/Butler Lane Area, Three Mile Run and Hill Road, Dublin Way and Seven Corner Road, Blooming Glen Road and Branch Road. The results of these surveys contained in the 1987 Wastewater Facilities Plan is included in Table 2-12 with an update of the status of the study area thru 1994. Additional surveys were not prepared as part of the 1995 plan update.

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**Table 2-12
Results of On-lot Sewage System Surveys
Bucks County 1986**

CODE	ON-LOT STUDY AREA (LOCATION)	FAILURE RATE ¹	STATUS/RECOMMENDED Alternatives ²
		# failures=% # Units	
E-1	Meadow Lane (8 DU's in Perkasio Borough)	$\frac{15}{23} = 65\%$	Connected to Public Sewers
E-2	Schwenk Mill Road Area Gravity Sewer with Connection	$\frac{11}{27} = 41\%$	Short Term: OLDS Management Long Term: Small Diameter to Deibler Elementary School System ³
E-3	Keelersville/Butler Lane/Area	$\frac{11}{26} = 42\%$	Short Term: OLDS Management Long Term: Small Diameter Gravity Sewers with Connection to Community Sub-surface Disposal Systems
E-4	Three Mile Run and Hill Road	$\frac{34}{69} = 49\%$	CONNECTED TO PUBLIC SEWERS
E-5	Three Mile Run and Schoolhouse Lane	$\frac{8}{29} = 28\%$	CONNECTED TO PUBLIC SEWERS
E-6	Dublin Way and Seven Corner Road	$\frac{7}{25} = 28\%$	CONNECTED TO PUBLIC SEWERS
E-7	Blooming Glen Road and Branch Road	$\frac{5}{11} = 45\%$	CONNECTED TO PUBLIC SEWERS
E-8	Township-wide (remain- der of on-site systems)	$\frac{46}{768} = 6\%$	OLDS Management (public education/technical assistance)

¹ Based on Remote Sensing Consultants (RSC) aerial photography/photo interpretation.

² Included in 1987 Wastewater Facilities Plan.

³ Long term connection to Deibler Elementary School system conditional upon reducing capital costs to an affordable level (i.e. via grants).

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PLANNING IMPLICATIONS:

Various existing conditions that characterize East Rockhill Township are presented within Chapter 2. These features and influences affect the policy and planning activities of the Township.

1. The Plan must focus on wastewater disposal needs for proposed development and to accommodate anticipated growth.
2. Existing wastewater disposal problems must be addressed.
3. The Township must adopt policies which identify preferred wastewater disposal systems and the municipal role in the operation and maintenance of alternative systems.
4. A strategy for on-lot sewage system management must be developed.

CHAPTER 3 WASTEWATER FACILITIES PROGRAM

In addition to meeting the requirements of Act 537, the East Rockhill Township wastewater management plan must be consistent with land use planning, environmental protection goals, and wastewater needs described in other municipal planning documents. Specific goals and objectives identified in the 1987 Wastewater Facilities Plan are as follows:

GOALS AND OBJECTIVES:

Goal 1: To ensure protection of public health from the effects of improper wastewater disposal.

The need to maintain sanitary conditions is the principal motive behind the planning of wastewater facilities. Although no reported public health problems resulting from improper wastewater disposal have been documented in East Rockhill Township, there have been isolated complaints of seepage overflow and odors associated with malfunctioning residential septic systems.

Objectives:

- A. Correct the problems of failing septic systems using the most applicable method for each area.
- B. Stress proper maintenance requirements of on-site sewage disposal systems through a public education and information program.
- C. Encourage long-term water conservation measures to reduce hydraulic loading on both on-site wastewater disposal systems and centralized wastewater treatment facilities.
- D. Provide proper operation and maintenance of municipal, non-municipal and industrial wastewater treatment facilities.

Goal 2: To assure protection of natural resources of the Township from the effects of improper wastewater disposal.

Protecting the natural resources of the area is a major consideration in preparing a wastewater management plan. Inadequate treatment of sewage and improper disposal of wastewater effluent can drastically degrade land and water resources. Water pollution can reduce the usefulness of streams and lakes for recreational purposes, and can affect public water supply sources, involving both groundwater and surface water.

Objectives:

- A. Discourage the use of point discharge wastewater effluent into streams unless treatment capabilities of the system conform to minimum water quality standards of the PA Department of Environmental Protection.
- B. Utilize environmentally sound and cost-effective technologies to prevent degradation of streams and achieve established stream standards.

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- C. Provide for public ownership of all sanitary sewage facilities (except for individual on-lot systems) serving residents of the Township.
- D. Encourage municipal management or other forms of Township guarantee to ensure long-term reliability of all alternate wastewater treatment/disposal systems.

Goal 3: To provide adequate wastewater facilities to meet existing and future development needs of the area.

For housing to be constructed to meet requirements of anticipated population growth, availability of wastewater facilities is a decisive factor. The type of facilities available can also determine the location and concentration of housing units. For example, the presence of a centralized sewage collection system and treatment facility permits development of high density housing. Large lots with individual on-lot systems are usually developed in unsewered areas.

Objectives:

- A. Provide for a diversity of wastewater facilities to accommodate all types of development while encouraging, where feasible, non-sewered approaches to wastewater facilities. For example:
 - Limited expansion and upgrading of existing municipal facilities to service present and future needs;
 - Continued reliance on individual on-site systems with some degree of on-lot disposal systems (OLDS) education.
 - Continuation of existing non-municipal and industrial systems, utilizing land application of effluent where feasible.
- B. Ensure that sufficient capacity is allocated in the Pennridge Regional Wastewater Treatment Plant (PWTA) or other centralized public treatment facility, and that allocated capacities at PWTA are modified only upon agreement by the municipalities involved and the PWTA.

Goal 4: To provide the type of wastewater facilities in each zoning district which complements the type of land use planned for that district.

It is important that the wastewater facilities plan be related to the Township Comprehensive Plan and Zoning Ordinance and any changes in one should be reflected in the other. Section 301(4) of the Pennsylvania Municipalities Planning Code (Act 247 of 1968, as amended by Act 170 of 1988) and Section 5(d)(2) and (4) of the Pennsylvania Sewage Facilities Act (Act 537) provide for this coordination.

Through the Comprehensive Plan and Zoning Ordinance, East Rockhill Township attempts to direct land use and development to those portions of the Township where natural features and infrastructure are most compatible with development needs. Wastewater facility availability can exert a major influence over the location of development. Thus, land use and zoning should be the primary factors in choosing the most appropriate type of facilities for specific areas in the Township.

The concept of concentrating the majority of future development within a designated development area has been formulated in the Comprehensive Plan. Through public sewer

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service, higher density zoning, and proximity to other services, the development area provides the support for higher density development. At the same time, less dense development and agriculture can continue in the rural areas.

Since public sewer service is an essential element of the development district concept, extension of sewers outside of the district creates two problems. First, it makes it possible for larger scale developments to take place outside of the development district, increasing the cost of providing public facilities for the development and impacting natural resources. Second, it reduces the capacity available in the treatment facility for development within the designated development area.

In addition, capital costs for extensions of public sewer collection systems are extremely high. By concentrating development, wastewater collection facilities are less costly to construct. Expansive sewage collection systems also present the increased potential for problems resulting from the infiltration of groundwater into the systems thereby increasing treatment costs.

Objectives:

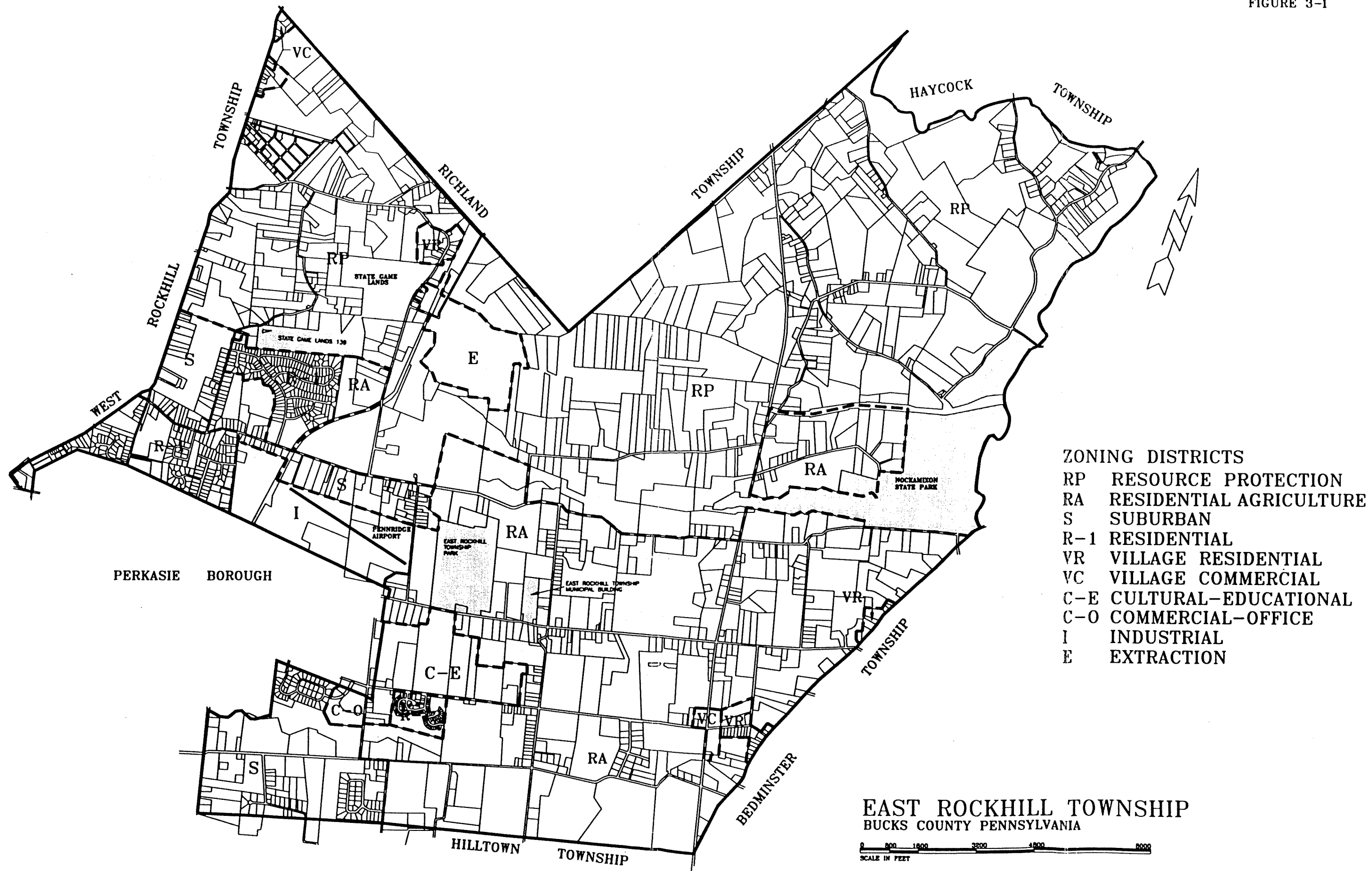
- A. Limit the centralized sewer system to the development area in order to guide higher density development to the urbanized area and away from rural areas.
- B. Rely upon the use of small community sewage systems to serve cluster subdivisions outside of the designated development area.
- C. Rely upon individual on-site sewage disposal systems for "conventional" single family dwelling development outside of the designated development area.
- D. Require an analysis of wastewater facilities alternatives for all revisions to the Wastewater Facilities Plan as part of the preliminary subdivision or land development submission.

WASTEWATER PLANNING POLICIES:

Development is directly influenced by the availability of wastewater facilities. Therefore, the Township's wastewater planning policies must be closely coordinated with its Comprehensive Plan and Zoning Ordinance. To facilitate this coordination and to ensure that the wastewater facilities needs of future development are met, each district created in the East Rockhill Township Comprehensive Plan was evaluated and suitable wastewater facilities were identified. The 1987 Zoning Ordinance, as amended, (Ordinance 142, 148, and 150. Refer appendix). was evaluated and specific wastewater facilities policies for each district were developed. (Refer Figure 3-1, Zoning Map)

Existing wastewater facilities serving East Rockhill Township range from a public sewage collection system serving the southwest portion of the Township adjacent to Perkasio Borough, to on-site subsurface disposal systems throughout the Township. The following narrative discusses the sewered and unsewered portions of the Township separately and presents policies for the management of the existing facilities.

FIGURE 3-1



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Centralized Wastewater Collection System

There are four areas of East Rockhill Township that are served by public sewer. The oldest sewer line serves Deibler Elementary School on Schwenk Mill Road and the senior and junior high schools on Fifth Street. This line is maintained by the Pennridge School District and is connected to the Perkasio Borough Authority (PBA) system. A second sewer line owned and maintained by East Rockhill Township runs eastward along Three Mile Run Road from Old Bethlehem Pike to a pumping station at Schoolhouse Road. This line also serves the Residential (R-1), Suburban (S), and Industrial (I) Zoning Districts located in the Tohickon Watershed.

The third area of the Township with public sewer service is the watershed of the East Branch Perkiomen Creek west of Blooming Glen Road. Properties located within the Residential (R-1), Suburban (S), and Commercial Office (C-O) Zoning Districts are connected to Township owned sewer lines. This area also includes the Weidner Subdivision (currently under construction) consisting of sixteen (16) single family dwelling building lots and located adjacent to Perkasio Borough. These lots are serviced by public sewer facilities by PBA. The fourth area is a small section at the western end of the Township between Perkasio and Sellersville Boroughs served by sewer lines maintained by East Rockhill Township. The latter three sewer lines are maintained by East Rockhill Township. The Township is allocated a flow capacity of 371,000 gallons per day (gpd) in the Pennridge Wastewater Treatment Authority treatment plant. Of this capacity, approximately 186,175 gpd is used by existing connections served by Township facilities. (This figure is disputed by PWTAA and is the subject of litigation)

Figure 3-2 identifies areas currently served by public sewer within East Rockhill Township. The policies which follow are for specific zoning districts where appropriate, and are based upon the concept of orderly progression of public sewer service within the designated development area.

Development Area

The planning term "Development Area" denotes districts to which a community is able to direct anticipated growth for a specific time period and where a full range of coordinated services can be reasonably provided.

The Development Area as designated in the East Rockhill Township Comprehensive Plan and described in the East Rockhill Township Zoning Ordinance borders Perkasio Borough and a small portion of Sellersville Borough. Four zoning districts, the Residential (R-1) District; Cultural Educational (C-E) District; Commercial Office (C-0) District; and Industrial (I) District are entirely within the Development Area (as shown in Figure 3-1).

The Development Area is located where development has occurred and public facilities (i.e. sewers) have been provided. In this area, the municipality, school district, and other authorities provide required facilities to support and be supported by future development. The adverse effects of scattered development is reduced by intensifying development in this district. Thus, the Development Area concept represents a pro-active philosophy by determining where intensive development and urban services will be located, rather than simply reacting to random proposals by developers. Providing the appropriate environment in the Development Area for anticipated growth has historically absorbed a substantial amount of new development pressure from less appropriate areas of the Township which should be preserved.

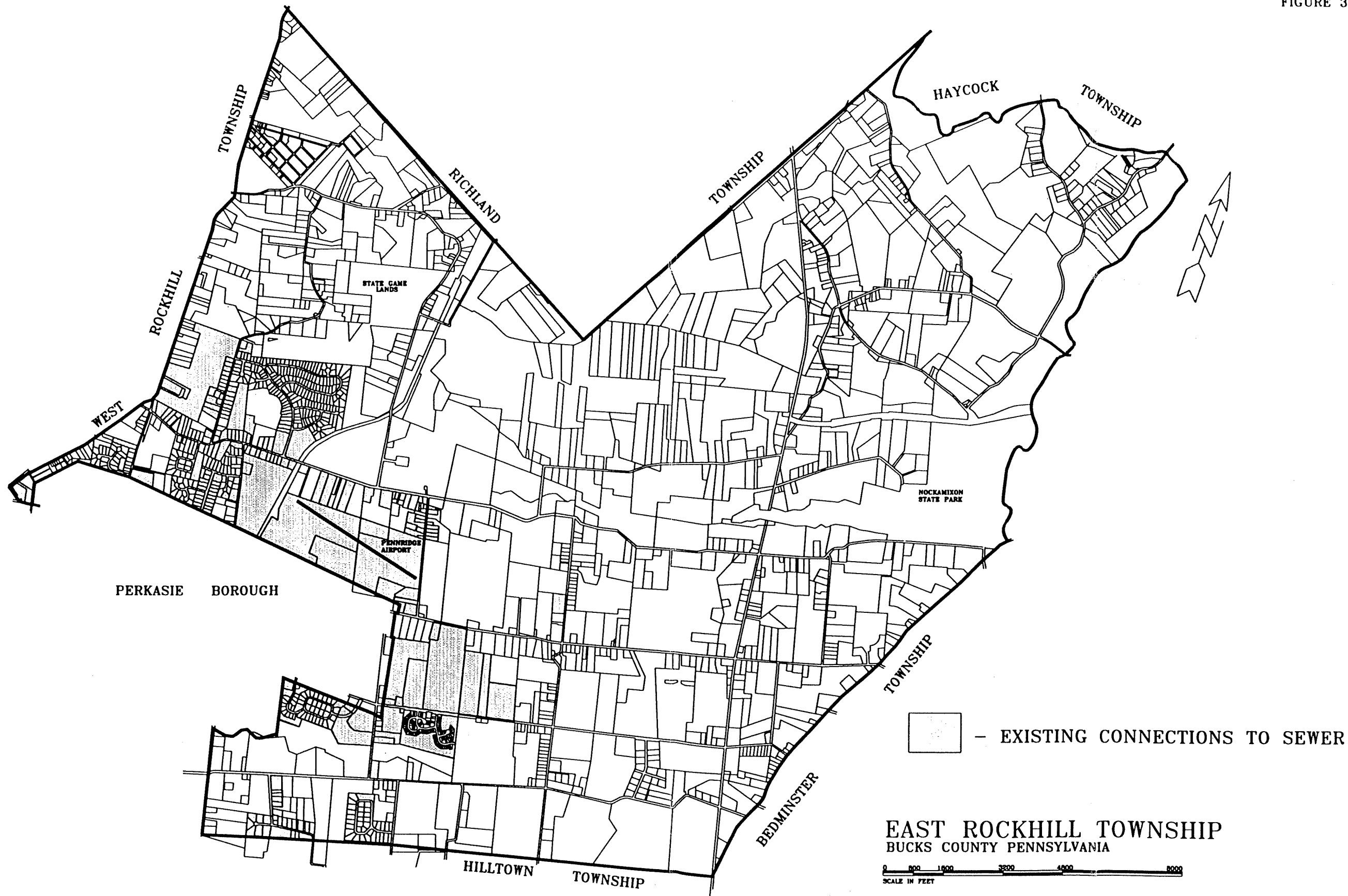
The purpose of the zoning districts in the Development Area is to accommodate the more intensive residential, commercial, office, and industrial uses in the most appropriate locations. Since the highest density housing in the Township is permitted within the Development Area,

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public sewer service is essential. The availability of public sewer presents an added stimulus for development to locate in this district because of the limited wastewater facility alternatives in other areas of the Township.

Significant extensions of the sewer system outside of the Development Area would lessen this incentive and also reduce the capacity in the system available for the Development Area. There are also technical and economic advantages to concentrating sewage collection systems. These include reducing capital and maintenance costs and minimizing the risk of excessive infiltration of groundwater into the system. These problems are intensified when there is an excessive amount of main sewer lines installed between house connections.

FIGURE 3-2



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East Rockhill Township's policies concerning wastewater facilities in the Development Area (as identified in the Township's Comprehensive Plan and Zoning Ordinance) shall be as follows:

- 1. The public sewer system shall be concentrated within the Development Area.**
- 2. Other methods of wastewater disposal shall be considered a plan revision and, as such, a complete evaluation of wastewater facility alternatives will be required as detailed in the section of this plan on Act 537 planning requirements.**
- 3. Land application via spray irrigation is not an acceptable form of wastewater disposal within the Development Area because of the large land requirements and the general incompatibility of such treatment with more intensive development.**

Some areas outside of the Development Area may require extension of public sewers to remedy existing on-lot failures. The Township Supervisors, after an assessment of all sewage disposal alternatives developed in feasibility studies, may determine that extension of sewers is the only economically and environmentally sound alternative to serve on-site problem areas.

Because of the high incidence of on-site sewage system malfunctions, the Schwenk Mill Road area may be sewerred in the future if it is determined financially and administratively feasible. There is no intention of allowing any further public sewer extensions from this area (within the Rural Agricultural (RA) and Resource Protection (RP) zoning districts) and any future public sewers serving the Schwenk Mill Road area should be designed to reduce potential for further sewer extension.

Suburban (S) District

The Suburban District is located in two western portions of the Township; one area is located directly south and east of Perkasio Borough (in the vicinity of Branch Road), and the other is located north of Perkasio Borough (along Three Mile Run Road). Due to characteristics of existing development and proximity to Perkasio Borough and the R-1 Zoning District; these areas are intended for residential development. The presence of sewers, which were constructed in this area to alleviate malfunctioning on-site sewage disposal systems, and zoning which permits moderate density makes development in these areas more likely than in other rural, agricultural and resource protection areas of the Township.

The Township intends to permit connections to the existing sewer lines to provide additional support to the facilities. Zoning requirements (minimum lot areas of 22,000 square feet for detached dwellings) and the soil limitations of this district make individual on-site systems generally infeasible to service potential development.

The East Rockhill Township policies concerning wastewater facilities in the Suburban (S) zoning district shall be the following:

- 1. Areas of the Suburban District shall utilize public sewer service whenever feasible.**
- 2. Where soils are suitable and public sewer service is not readily available, individual sub-surface disposal systems will be an acceptable method of wastewater disposal on large lots (1 acre or more).**

**TABLE 3-3
INDIVIDUAL RESIDENCE SPRAY IRRIGATION SYSTEMS
DESIGN GUIDELINES**

(Pa. Department of Environmental Resources, 1981)

The following guidelines have been developed for a sewage treatment system for a single residence involving a biological treatment process followed by spray irrigation.

Soils: Spray irrigation is not suitable on:

1. Severely and moderately eroded phases of shallow/well-drained soils.
2. Severely eroded phases of moderately well-drained soils.
3. Poorly drained soils.
4. Floodplain soils as mapped by Flood Insurance Study for the municipality.
5. Slopes over 25%.
6. Disturbed or fill soils.

Slopes:

1. Opened grassed areas - maximum 12%
2. Wooded areas - maximum 25%
3. Agricultural areas and somewhat poorly drained soils - limited to 4% slope.

Groundwater Table:

1. Depth to seasonal high water table - 10 inches or more.
2. Depth to bedrock or rock formation - 16 inches or more.

Application Rates:

<u>Soil Type</u>	<u>Maximum Permissible Application Rate⁽¹⁾</u>
1. Deep, somewhat poorly drained	0.2 in/week (0.5 Ac)
2. Shallow (i.e., soil with a depth between 15 & 20 inches) well drained soils	
3. Deep, moderately well drained soils ⁽²⁾	0.4 in/week (0.25 Ac)
4. Moderately deep, well drained soils ⁽²⁾	0.4 in/week (0.25 Ac)
5. Moderately deep, moderately well drained soils ⁽²⁾	0.4 in/week (0.25 Ac)
6. Deep, well drained soils ⁽³⁾	0.4 in/week (0.25 Ac) 0.5 in/week (0.25 Ac)

(1) Based on a conservative residential flow of 400 gpd, the minimum required land area is noted in (Ac).

(2) Suitable for an elevated sand mound.

(3) Suitable for standard on-lot system provided an isolation distance of 4 feet from the bottom of the seepage area to the limiting zone is attained.

Minimum Property Size:

Will depend upon required spray area, buffer zones, lot configuration, location of house, well, etc. In most cases it can be expected that the required property size will be a minimum of 2 acres.

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Future Development

The wastewater disposal needs of future development outside of the Development Area and the Suburban District will have to be met primarily by individual on-lot disposal systems (OLDS).

Wastewater facilities policies for future development in zoning districts outside of the Development Area and the Suburban District are presented below on a district-by-district basis.

Residential Agricultural (RA) and Resource Protection (RP) Districts

The zoning requirements for the "RA" and "RP" Districts have been designed to promote preservation of agriculture as a primary use of undeveloped land outside the Development Area and protect areas containing sensitive natural features and areas of natural scenic beauty. Limited residential uses are permitted as well as agricultural uses. The standards and densities of these districts are intended to provide a positive incentive for the preservation of large amounts of open space, agricultural areas, and natural resources, as well as the retention of the rural character of the Township. Public services such as water and sewer facilities are not to be provided according to the East Rockhill Township Comprehensive Plan. Since it is intended that the "RA" and "RP" Districts be used to promote rural residential development and agricultural uses, the East Rockhill Township Zoning Ordinance specifies minimum lot area requirements of sufficient size (1.8 acres in the "RA" District and 4.0 acres in the "RP" District) which could support on-site sub-surface wastewater disposal systems where soils are suitable.

Individual on-lot systems, while limited by the soils in the Township, can be expected to meet the wastewater disposal needs of new development in the "RA" and "RP" Districts. This includes all types of on-lot systems permitted by the Bucks County Department of Health and the PADEP.

Since limited development is expected to take place in the "RA" and "RP" Districts, cluster development is also permitted to allow limited concentrated residential development while preserving significant open space area and natural resources. Cluster development will most likely require community wastewater disposal systems rather than individual on-lot systems. It is not the Township's intent to exclude community wastewater systems from this area, but to ensure that the best possible system, compatible with the development objectives for the zoning district, is installed.

To achieve this goal, a site-by-site detailed evaluation of all available alternatives will be required. Use of the Act 537 revision process for all community wastewater systems proposed in this area will be the best practical tool to identify the most environmentally sound and cost-effective alternative.

The East Rockhill Township policies concerning wastewater facilities in the Rural Agricultural (RA) and Resource Protection (RP) Zoning Districts shall be the following:

- 1. Where soils are suitable, individual sub-surface disposal systems will be the most acceptable method of wastewater disposal, on large lots, in the Residential Agricultural (RA) and Resource Protection (RP) Districts.**
- 2. Any wastewater disposal systems proposed within the Residential Agricultural (RA) or Resource Protection (RP) Districts other than individual sub-surface on-lot systems will be considered a plan revision and, as such, require a complete evaluation of wastewater facility alternatives.**

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3. For any community wastewater collection/disposal system (i.e., serving a cluster subdivision) to be approved as a plan revision, the facilities must be offered for dedication to East Rockhill Township (or an agency approved by the Township). The facilities must meet the following criteria before the Township will consider acceptance of the facilities:
 - a. The system must be designed for long-term economic feasibility so that the Township or its designated agency may operate and maintain the system without burden to other Township residents.
 - b. The system must be constructed to standards acceptable to the Township or its designated operating agency.
 - c. When surface or sub-surface disposal of wastewater effluent is proposed, a detailed soils analysis will be required and installation must be done according to PADEP and Bucks County Department of Health guidelines.
 - d. A method to financially guarantee performance shall be established that is acceptable to the Township and its designated operating agency (if any).
 - e. The area on the land development plan designated as open space shall not be used for wastewater disposal. This includes, but is not limited to, sand mounds, disposal fields, lagoons, areas of spray application, pumping stations, treatment plants, etc.
4. Individual residence spray irrigation systems (IRSIS) will, as a minimum, be designed in accordance with PADEP Design Guidelines (refer Table 3-3). The Township will consider initiating further steps such as the formulation and adoption of a spray irrigation ordinance which formalizes the recommendations in the DEP guidelines (i.e., fencing, planting to reduce wind drift, operation and maintenance manual, service contract, monitoring, minimum lot size, and time of application). Permits for IRSIS are issued by the Bucks County Health Department.
5. The Township will continue requiring execution of operation and maintenance agreements, evidence of service contracts, and additional monitoring for alternate systems such as small flow package treatment plants.
6. The Township reserves the right to require the implementation of an alternative wastewater treatment/disposal system to the one proposed by the developer, if it means long-term environmental and economic savings to the Township and the customers of the system.

Village Residential (VR) and Village Commercial (VC) Districts

Four villages in the Township make up the "VR" Districts. These districts have been established to provide standards and densities compatible with existing conditions in the villages so that their characters are preserved. "VC" Districts are located adjacent to the village of Hagersville and at the intersection of Route 313 and Fifth Street. "VC" Districts are intended to provide residents with limited, small-scale commercial services.

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As the East Rockhill Township Comprehensive Plan indicates, developments within Village Residential (VR) and Village Commercial (VC) Zoning Districts are intended to utilize on-lot systems. These areas contain small concentrations of closely spaced residential and commercial uses on small lots. Zoning requirements reflect the existing lot size characteristics by permitting uses with a minimum lot area of 10,000 square feet. Accordingly, there is some concern with the location of on-site systems on small lots in concentrated areas. Additionally, certain commercial facilities may have the potential of discharging wastes, other than domestic waste, to on-site systems which could lead to groundwater contamination.

The East Rockhill Township policies concerning wastewater facilities in the Village Residential (VR) and Village Commercial (VC) Zoning Districts shall be the following:

- 1. Where soils are suitable, individual sub-surface wastewater disposal systems will be the most acceptable method of wastewater disposal in the Village Residential (VR) and Village Commercial (VC) Districts.**
- 2. Any wastewater disposal system proposed within the Village Residential (VR) and Village Commercial (VC) Districts other than individual sub-surface on-lot systems will be considered a plan revision and, as such, a complete evaluation of wastewater facility alternatives will be required as detailed in the section of this plan on Act 537 planning requirements.**
- 3. The Township may require that commercial development provide assurances (i.e., monitoring) that wastes, other than domestic wastes, which may cause groundwater contamination are not discharged to on-site systems.**
- 4. For any community wastewater collection/disposal system (i.e., serving a cluster subdivision in the "VR" District) to be approved as a plan revision, the facilities must be offered for dedication to East Rockhill Township (or an agency approved by the Township). The facilities must meet the following criteria before the Township will consider acceptance of the facilities:**
 - a. The system must be designed for long-term economic feasibility so that the Township or its designated agency may operate and maintain the system without burden to other Township residents.**
 - b. The system must be constructed to standards acceptable to the Township or its designated operating agency.**
 - c. When surface or sub-surface disposal of wastewater effluent is proposed, a detailed soils analysis will be required and installation must be done according to PADEP and Bucks County Department of Health guidelines.**
 - d. A method to financially guarantee performance shall be established that is acceptable to the Township and its designated operating agency (if any).**
 - e. The area on the land development plan designated as open space shall not be used for wastewater disposal. This includes, but is not limited to, sand mounds, disposal fields, lagoons, areas of spray application, pumping stations, treatment plants, etc.**

CHAPTER 3

5. **The feasibility of connecting existing on-site systems that are malfunctioning in the vicinity of proposed wastewater systems shall be evaluated.**
6. **The Township reserves the right to require the implementation of an alternative wastewater treatment/disposal system to the one proposed by the developer if it means long-term environmental and economic savings to the Township and the customers of the system.**

Extraction (E) District

The Extraction District has been delineated in recognition of the existing quarry on Rock Hill Road and permits the continuation of extraction activities in a safe and nondeleterious manner.

The East Rockhill Township policies concerning wastewater facilities in the Extraction (E) Zoning District shall be as follows:

1. **Where soils are suitable, individual sub-surface wastewater disposal systems will be the most acceptable mode of wastewater disposal for uses other than those directly related to the processing of industrial wastewater from extractive operations (these permitted uses include uses associated with extractive operation - i.e., workmen's toilet facilities - which generate only domestic type waste).**
2. **Any disposal system proposed within the Extraction (E) District other than individual sub-surface on-lot systems will be considered a plan revision and, as such, a complete evaluation of wastewater facility alternatives will be required as detailed in the section of this plan on Act 537 planning requirements.**

CHAPTER 4 DELINEATION OF STUDY AREAS

To analyze various potential wastewater alternatives, the Township was divided into "study areas". These study areas are portions of the Township which share common characteristics and present similar wastewater planning concerns. The following parameters are utilized in defining the boundaries of the study areas: existing land use, zoning requirements, existing sewer and water service, natural features, existing sewage disposal problems and future growth.

Study areas discussed in this chapter include those defined by higher intensity land use and identified on-site malfunctions; areas with public sewer service and proposed to facilitate future growth; and areas of the Township which are characterized by scattered low-density residential development which must and will continue to rely on individual on-site systems. Study areas are delineated on Figure 4-1.

DEVELOPMENT STUDY AREA:

This study area is located in the southeast portion of the Township adjacent to Perkasio Borough and Hilltown Township. It is comprised of all areas of the Township zoned to accommodate future residential development growth which includes both the Residential (R-1) and Suburban (S) Zoning Districts. Also included within the study area are the Industrial (I) and Cultural-Educational (C-E) Districts and one of three areas of the Township zoned Commercial-Office (C-O).

Existing land use in the study area includes commercial, office, and shopping center development in the Commercial-Office District, and industrial/airport development in the Industrial District. The study area also includes all large scale residential developments which have been constructed within East Rockhill Township during the past 20 years. These residential developments consist of mostly single-family homes on lots of approximately 20,000 square feet in area. Included developments are Ridge Run, Cheryl Crest, Hilldale, Chadd's Place, Stony Hill, Bridgeview, Glenwood, and Weidner. Also included within this district is the Pines at Pennridge development consisting of 136 townhouses and twin homes.

The majority of this area is currently served by public sewer service by East Rockhill Township. The Cultural-Educational District which includes the Pennridge School District Complex is provided with public sewer service through the Perkasio Borough Authority, as are 16 dwellings (under construction) located in the Weidner Subdivision adjacent to Perkasio Borough. Perkasio Borough Authority also provides public water to several of the developments within the area. North Penn Water Authority operates two (2) wells and provides public water service to 196 single-family dwellings within the Ridge Run development.

Study area also includes the Fenley tract consisting of approximately 63 acres of mostly vacant (formerly agricultural) land. A single family dwelling (farm house) and several associated outbuildings are the only improvements on the property. This parcel located between Fifth Street (south of the Pennridge School District Complex) and Branch Road was re-zoned from Residential Agricultural (RA) to Residential (R-1) by Ordinance No. 150 on June 15, 1993. The site has received conditional final plan approval for development with 181 townhouse and single family dwellings. The existing farmhouse is to remain.

East Rockhill Township purchased a flow capacity of 371,000 gallons per day (gpd) in the Pennridge Wastewater Treatment Authority (PWTA) treatment plant to accommodate wastewater needs within the study area (with the exception of the re-zoned Fenley tract). Based upon the "maximum month" (February, 1996) since

TABLE 3-3
INDIVIDUAL RESIDENCE SPRAY IRRIGATION SYSTEMS
DESIGN GUIDELINES
(Pa. Department of Environmental Resources, 1981)

The following guidelines have been developed for a sewage treatment system for a single residence involving a biological treatment process followed by spray irrigation.

Soils: Spray irrigation is not suitable on:

1. Severely and moderately eroded phases of shallow/well-drained soils.
2. Severely eroded phases of moderately well-drained soils.
3. Poorly drained soils.
4. Floodplain soils as mapped by Flood Insurance Study for the municipality.
5. Slopes over 25%.
6. Disturbed or fill soils.

Slopes:

1. Opened grassed areas - maximum 12%
2. Wooded areas - maximum 25%
3. Agricultural areas and somewhat poorly drained soils - limited to 4% slope.

Groundwater Table:

1. Depth to seasonal high water table - 10 inches or more.
2. Depth to bedrock or rock formation - 16 inches or more.

Application Rates:

<u>Soil Type</u>	<u>Maximum Permissible Application Rate⁽¹⁾</u>
1. Deep, somewhat poorly drained	0.2 in/week (0.5 Ac)
2. Shallow (i.e., soil with a depth between 15 & 20 inches) well drained soils	0.4 in/week (0.25 Ac)
3. Deep, moderately well drained soils ⁽²⁾	0.4 in/week (0.25 Ac)
4. Moderately deep, well drained soils ⁽²⁾	0.4 in/week (0.25 Ac)
5. Moderately deep, moderately well drained soils ⁽²⁾	0.4 in/week (0.25 Ac)
6. Deep, well drained soils ⁽³⁾	0.5 in/week (0.25 Ac)

(1) Based on a conservative residential flow of 400 gpd, the minimum required land area is noted in (Ac).

(2) Suitable for an elevated sand mound.

(3) Suitable for standard on-lot system provided an isolation distance of 4 feet from the bottom of the seepage area to the limiting zone is attained.

Minimum Property Size: Will depend upon required spray area, buffer zones, lot configuration, location of house, well, etc. In most cases it can be expected that the required property size will be a minimum of 2 acres.

TABLE 3-3 (continued)

Buffer Zones:

1. Property boundaries - 25 feet
2. Roads/Driveways - 25 feet
3. Occupied dwellings - 100 feet
4. Unoccupied dwellings - 25 feet
5. Streams/watercourses/ponds - 50 feet
6. Well - 100 feet
7. Keep as far as practical, approximately 50 feet, from obvious high use areas such as play areas, picnic areas, patios, etc.

Sewage Treatment Plant:

1. Must provide secondary treatment (30 mg/1 BOD₅ and Suspended Solids), such as NSF Standards No. 40 Class I (less than 1500 gpd) and NSF Criteria C-9 approved treatment units (greater than 1500 gpd).
2. Must provide disinfection of treated sewage prior to spray irrigation.
3. Avoid entry of surface water into treatment plant.
4. Minimum treated effluent storage capacity of 2000 gallons to allow for cessation of spraying during extremely adverse conditions (heavy rainfall, extreme cold, high winds, deep snow).

Spray Irrigation Site:

1. Use low trajectory nozzles and "coarse" spray to minimize misting/aerosol drift.
2. Divert, as much as possible, the upland drainage from spray site and provide berm to retain drainage from spray site in critical locations.
3. Monitoring well and sampling not required, although it may be desirable to sample homeowners private wells occasionally.
4. Fencing of spray site is highly desirable to limit access by children and animals.
5. Keep spray area in sod vegetative cover.
6. Desirable to provide evergreens (trees/bushes) along critical side of spray irrigation site, especially downwind to minimize wind drift.

General:

1. Spray during night by use of a timer to reduce chance of contact with animals/people.
2. Strongly recommend service contract with equipment representative so quarterly or semi-annual checks and "as need" services are provided.
3. An operation and maintenance manual for the homeowner's use is strongly recommended.
4. Strongly recommend water conservation fixtures in house (low flush toilets, shower restrictors) to minimize water usage.

CHAPTER 4 DELINEATION OF STUDY AREAS

To analyze various potential wastewater alternatives, the Township was divided into "study areas". These study areas are portions of the Township which share common characteristics and present similar wastewater planning concerns. The following parameters are utilized in defining the boundaries of the study areas: existing land use, zoning requirements, existing sewer and water service, natural features, existing sewage disposal problems and future growth.

Study areas discussed in this chapter include those defined by higher intensity land use and identified on-site malfunctions; areas with public sewer service and proposed to facilitate future growth; and areas of the Township which are characterized by scattered low-density residential development which must and will continue to rely on individual on-site systems. Study areas are delineated on Figure 4-1.

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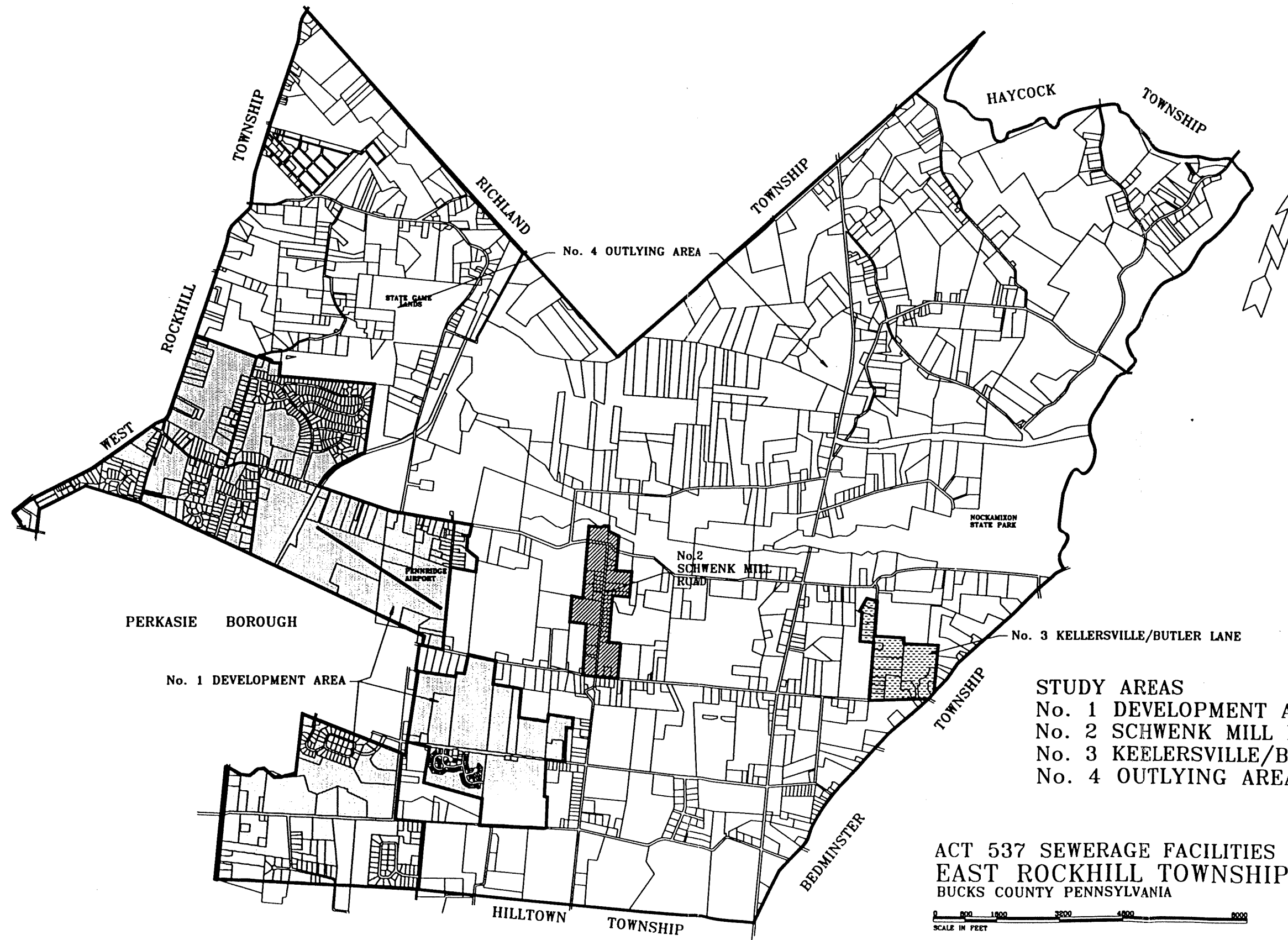
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Study area also includes the Fenley tract consisting of approximately 63 acres of mostly vacant (formerly agricultural) land. A single family dwelling (farm house) and several associated outbuildings are the only improvements on the property. This parcel located between Fifth Street (south of the Pennridge School District Complex) and Branch Road was re-zoned from Residential Agricultural (RA) to Residential (R-1) by Ordinance No. 150 on June 15, 1993. The site has received conditional final plan approval for development with 181 townhouse and single family dwellings. The existing farmhouse is to remain.

East Rockhill Township purchased a flow capacity of 371,000 gallons per day (gpd) in the Pennridge Wastewater Treatment Authority (PWTA) treatment plant to accommodate wastewater needs within the study area (with the exception of the re-zoned Fenley tract). Based upon the "maximum month" (February, 1996) since

FIGURE 4-1



PERKASIE BOROUGH

No. 1 DEVELOPMENT AREA

No. 4 OUTLYING AREA

No. 2 SCHWENK MILL ROAD

No. 3 KELLERSVILLE/BUTLER LANE

- STUDY AREAS**
No. 1 DEVELOPMENT AREA
No. 2 SCHWENK MILL ROAD
No. 3 KEELERSVILLE/BUTLER LANE
No. 4 OUTLYING AREA

ACT 537 SEWERAGE FACILITIES PLAN
EAST ROCKHILL TOWNSHIP
BUCKS COUNTY PENNSYLVANIA

0 500 1000 1500 2000 2500 3000
SCALE IN FEET

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all flow readings for the month of March, 1996 were deemed invalid by PWTA due to surcharge condition at meter site #2) and an East Rockhill Township flow of 181,300 gpd (based upon approved PWTA meter readings); 189,700 gpd of capacity should be available for future development (this calculates to 689 EDU's based on a historically used estimate of flow 275 gallons per EDU).

The PWTA policy for allocation of sewer connections adopted on January 23, 1995, distributed infiltration/in-flow from the entire Pennridge region to the individual member municipalities. Based on the PWTA policy for allocation, East Rockhill Township currently has 180 additional EDU's of plant capacity approved by PWTA. These allocated connections are based on approved Planning Modules and "in-fill" allocation. Additionally, East Rockhill Township has been notified by PWTA that 37 EDU's of capacity purchased by East Rockhill Township has not been allocated to, or used by, the Township.

A study of parcels available for development, future proposed development on the Fenley tract, development of "in-fill" tracts, and industrial development based on the capacity purchased by the Pennridge Airport; a total of 321 EDU's (88,275 gpd) of additional treatment plant capacity is required to meet wastewater needs within the development area (refer Table 4-2). This determination of treatment plant capacity does not include additional wastewater which may be generated from the Pennridge School District Complex. This portion of the development area is served by Perkasio Borough Authority and, therefore, has not been included in the calculation of treatment plant capacity requirements for East Rockhill Township.

**TABLE 4-2
DEVELOPMENT STUDY AREA
Existing/Future Treatment Plant Capacity**

	<u>EDU's</u>
Purchased Plant Capacity ⁽¹⁾	1349
Existing Connections ⁽²⁾	(660)
Allocated Capacity ⁽³⁾	<u>(180)</u>
Existing Unused Capacity	509
Future Development ("R-1" District) ⁽⁴⁾	(401)
Future Development ("S" District) ⁽⁴⁾	<u>(324)</u>
	(216)

- (1) Based on purchased capacity of 371,000 gpd and 275 gallons/EDU.
- (2) Max. Month PWTA approved flow records (February, 1996)
- (3) Does not include capacity reserved by Pennridge Airport for development within the Industrial District (198 EDU's)
- (4) Does not include reserved capacity noted in ⁽³⁾.

Wastewater Planning Needs

Identify and evaluate wastewater alternatives which can provide adequate public facilities to serve anticipated growth within the development study area.

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SCHWENK MILL ROAD STUDY AREA:

This area includes approximately 28 developed parcels located along Schwenk Mill Road between Ridge Road (Route 563) and Three Mile Run Road. Of the 28 dwelling units, 11 were identified in the 1987 Sewage Facilities Plan as having malfunctioning on-lot systems. Deibler Elementary School, located on the west side of Schwenk Mill Road midway between Ridge Road and Three Mile Run Road, is currently pumping its sewage over the ridge to a sewer line located on the Pennridge School District property near the high school. Service to Deibler Elementary School is provided by Perkasio Borough Authority with treatment at the Pennridge Wastewater Treatment plant. Water service within the area is supplied by on-lot wells.

The study area is zoned Residential Agricultural (RA) and includes single-family dwellings on individual lots. The East Rockhill Township Comprehensive Plan (1987) identifies this area as intended for lower intensity development that does not require service by public facilities, such as public sewers. No new dwelling units have been constructed within the study area since 1970.

Since this area of concentrated development is served by on-lot individual wells, concerns of groundwater contamination were investigated as part of the Wastewater Facilities Plan update. Correspondence was directed on November 29, 1994 to all residents within the study area, of which eight (8) agreed to participate. During the week of December 5 thru 9, 1994, water samples were collected at the participating dwelling locations. Samples were tested for fecal coliform at Benchmark Analytics, 1776 Main Street, Hellertown, PA. All costs associated with the collection of water samples and laboratory testing were paid by East Rockhill Township. All tests were negative (Fecal Coliform <1 per 100 ml). Location of properties participating in the water supply sampling are shown in Figure 4-3.

Wastewater Planning Needs

1. Address concentration of malfunctioning on-lot systems.
2. Identify and evaluate wastewater alternatives which can provide a comprehensive solution while protecting the quality of Three Mile Run and Lake Nockamixon.
3. Identify and evaluate the institutional arrangements available for adequate long term operation and maintenance of the proposed alternative.

KEELERSVILLE/BUTLER LANE STUDY AREA:

There are approximately 26 developed parcels in the Keelersville/Butler Lane Area. Of these 26 dwelling units, 11 were identified in the 1987 Sewage Facility Plan as having malfunctioning on-lot septic systems. During development of wastewater facility alternatives in 1987, 11 additional dwellings on the Bedminster side of Old Bethlehem Road in the vicinity of Keelersville, were considered.

The 1987 Sewage Facility Plan indicated that this area would continue to utilize on-site sewage disposal systems. However, this area has a limited amount of soil suitable for conventional and alternate on-site systems. The Keelersville/Butler Lane area is located in the Lake Nockamixon watershed and malfunctioning septic systems may contribute to surface water pollution of Lake Nockamixon.

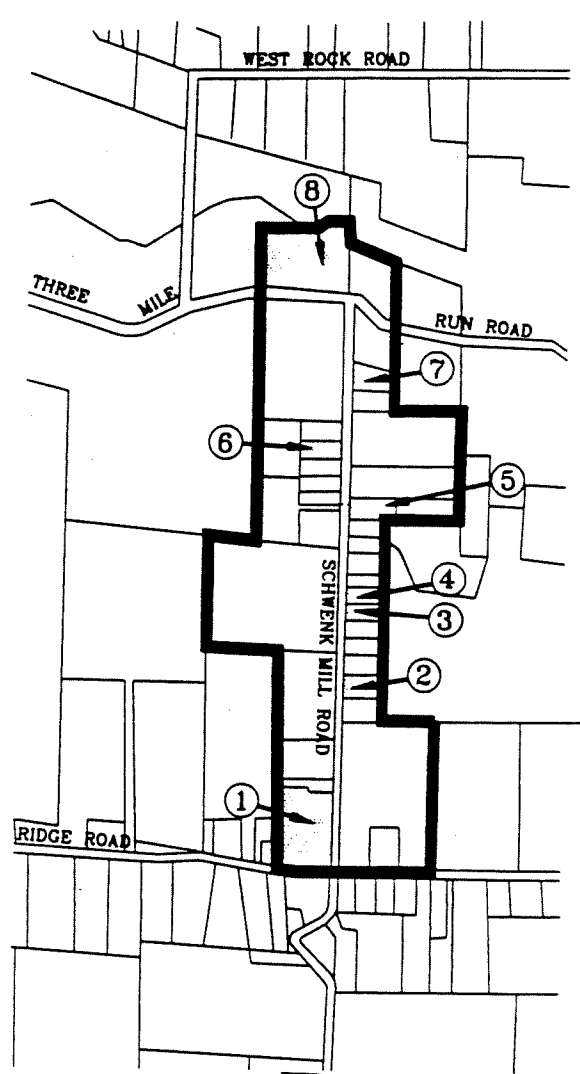
FIGURE 4-3

SCHWENK MILL ROAD STUDY AREA

(BETWEEN RIDGE ROAD AND THREE MILE RUN ROAD)

WELL SAMPLING (FALL 1994)

PARCEL NUMBER	CURRENT OWNER
① 9-161	SOROKA
② 9-197-4	FISHER
③ 9-197-6	HORN
④ 9-197-1	LLOYD
⑤ 9-198-1	GLIEM
⑥ 9-159-3	BRINKMAN
⑦ 9-199	LUDWIG
⑧ 9-124	VOLOVNIK



ACT 537 SEWERAGE FACILITIES PLAN
EAST ROCKHILL TOWNSHIP
BUCKS COUNTY PENNSYLVANIA



CHAPTER 4

Wastewater Planning Needs

1. Address concentration of malfunctioning on-lot systems.
2. Identify and evaluate wastewater alternatives which can provide a comprehensive solution while protecting the quality of Three Mile Run and Lake Nockamixon.
3. Identify and evaluate the institutional arrangements available for adequate long-term operation and maintenance of the proposed alternative.

OUTLYING STUDY AREA:

This study area comprises those portions of East Rockhill Township not included in the other study areas addressed above. Land use in this study area consists primarily of scattered single-family residential development on lots greater than one acre in size. The area is dominated by vacant and agricultural lands, with the exception of small pockets of clustered development in former village centers and limited commercial development within the "C-O" Zoning Districts located along Route 313 corridor.

Properties within this area rely on individual on-site wells for their water supply. Sewage treatment and disposal in this study area is provided by individual on-site systems.

Wastewater Planning Needs

Identify preferred methods of treatment and disposal for individuals when developing within the Township.

CHAPTER 5 WASTEWATER ALTERNATIVES

This section identifies various wastewater alternatives available to East Rockhill Township. The dispersed population of rural portions of the Township, large-lot development, and natural features present both engineering and economic difficulties for traditional wastewater facilities. Wastewater disposal/treatment facilities contained in this section were selected for evaluation due to construction, operation, and maintenance costs. These wastewater alternatives will be considered when planning wastewater management systems for on-lot sewage disposal problem areas throughout the Township as well as future development in areas where public sewer facilities are available.

Wastewater alternative selection should include consideration of the following:

- (1) protection of public health;
- (2) prevention/abatement of surface water pollution;
- (3) prevention/abatement of groundwater pollution;
- (4) construction cost;
- (5) cost of operation and maintenance;
- (6) disposal of treatment residuals.

All wastewater collection, treatment, and disposal systems must be designed, constructed, operated, and maintained properly to protect public health and prevent pollution. The planning policies of East Rockhill Township encourage the use of wastewater disposal alternatives which will recharge groundwater and protect surface and groundwater quality. Where collection systems are available, connection to public sewage facilities is the preferred option. Public sewage facilities are proposed/available in areas zoned for non-residential or high density residential development. Development of public facilities is desired to avoid proliferation of community wastewater systems.

INDIVIDUAL ON-LOT SYSTEMS:

The best known on-lot sewage system is the septic tank/sub-surface absorption area combination. Generally, these systems consist of a concrete tank and a network of perforated, sub-surface pipes; however, there are many variations and alternatives to the system. The following discussion describes various individual on-lot sewage treatment and disposal methods, maintenance procedures, and improvements.

Wastewater Treatment Options

1. Conventional Septic Tank

A conventional method of wastewater treatment is the use of a buried watertight container typically constructed of precast concrete. Septic tanks can be of various sizes with typical single family on-lot tanks about 1,000 gallons (depending on the size of the dwelling). When wastewater flows into the septic tank, solid material separates from the liquid. After settling, the solid matter forms a layer of sludge on the bottom of the tank. The sludge blanket experiences anaerobic decomposition (decomposition by bacteria and other micro-organisms that live in the absence of

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oxygen) which changes some of the organic matter into liquid and gaseous substances. Consequently, the bacterial action reduces the quantity of sludge requiring disposal. On the top of the liquid, floatable solids and greases create a scum layer. When the liquid effluent (treated wastewater) reaches the level of the outlet baffle, it then flows out of the septic tank into the effluent disposal system.

Septic systems function properly when the sludge and scum in the septic tank are removed periodically. Yearly inspection of the tank for examination of accumulated solids (sludge and scum) is recommended. If the results of the inspection indicate that the scum layer is within three inches of the lower end of the inlet and/or the sludge layer is one-third or more of the liquid depth, the tank should be pumped out and checked for possible structural problems. Without this periodic maintenance, the tank fills with solids, reducing the detention time and forcing some solids to leave the tank and clog the effluent disposal system.

2. Aerobic Treatment

An alternative to the conventional septic tank is a tank equipped to aerate the wastewater. In an aeration system, aerobic bacteria and other aerobic micro-organisms (micro-organisms that are active only in the presence of oxygen) are utilized to break down organic pollutants. Aeration produces a higher quality effluent and can reduce clogging in subsurface absorption areas. Oxygen is provided either through a diffused aeration device (using compressed air) or a mechanical device such as a propeller that churns the sewage. Following this stage, wastewater flows into a settling chamber where the biomass sediment is recycled back to the aeration chamber.

Although aerobic units provide greater sewage treatment than conventional systems, increased maintenance and operating costs are associated with the more complex systems. Additionally, sludge build-up and bulking (sludge is too light to settle properly) may affect the effluent quality.

Effluent Treatment and Disposal Options

There are numerous types of effluent disposal systems allowed by the Pennsylvania Department of Environmental Protection (DEP). The systems can be grouped into four categories: conventional subsurface absorption systems, alternate/experimental systems, intermittent sand filters with direct discharge, and individual residence spray irrigation systems (permits for IRSIS are issued by the BCHD). The first two categories require permits from the Bucks County Department of Health; the latter two require permits from the Department of Environmental Protection.

1. Conventional Subsurface Absorption Systems

Conventional systems usually consist of subsurface distribution pipes (laterals) placed in an absorption area where the soil provides additional treatment before the effluent enters the groundwater. The size of the absorption area depends on the type of treatment tank to be installed; number of bedrooms in the home; and an evaluation of soil conditions on the site, including a soil-profile inspection and percolation tests. These types of systems require at least forty-eight inches between the bottom of the absorption area and any limiting zone (e.g., seasonal high water table or rock formations with extremely slow or fast permeability), and in the cases of inground systems, may not be installed deeper than thirty-six inches (except for subsurface sand filters) or shallower than twelve inches below the soil surface (except for shallow placement trenches and beds). A distribution box divides the effluent equally

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within perforated piping system in the absorption area, preventing one line from becoming overloaded while another remains unused.

The standard trench method of effluent disposal utilizes an absorption area consisting of two or more trenches which are twelve to thirty-six inches deep; a maximum of one hundred feet in length; one to six feet in width; and adequately spaced apart (a minimum of five feet) to allow for the uniform spreading of effluent over the entire absorption area. Perforated plastic pipe which distributes the effluent is placed over a minimum of six inches of aggregate material (gravel) with an additional two inches of aggregate covering the pipe. Later, a layer of untreated building paper or two inches of hay or straw is placed over the top of the aggregate. The trenches are then backfilled with a minimum of twelve inches of soil suitable for the growth of vegetation. The soil cover must be extended beyond the sides of the trenches by three feet when the top of the aggregate is less than twelve inches from the natural soil surface (shallow placement).

The standard trench system is adaptable to situations that may prohibit the use of other systems in that the trenches can conform to the contours of the land. In addition, trenches, if designed and installed properly, can be placed on slopes of up to twenty-five percent. However, pressure dosing may be necessary to assure proper distribution of effluent into the trenches if the percolation rate is greater than sixty minutes per inch.

Seepage bed systems differ from standard trenches in that the entire absorption area is excavated and lined with aggregate. The distribution pipes, or laterals, are placed over the aggregate (depth of six inches) and spaced no more than six feet apart. Laterals are covered with a minimum of two inches of aggregate and a layer of untreated building paper or two inches of hay or straw. Similar to standard trenches, seepage beds are backfilled with twelve inches of suitable soil except where the top of the aggregate is less than twelve inches from the soil surface (shallow placement). In such cases, the soil cover is extended beyond the sides of the seepage bed by three feet. Seepage beds require less area but nearly level ground.

Although subsurface sand filters are similar to seepage beds, sand filters are constructed with a layer of sand fill material (below the layer of aggregate) at least twelve inches in depth. The system is appropriate for sites where a limiting zone occurs six feet or more from the soil surface, and the first three feet of soil have an unsuitably slow percolation rate (greater than ninety minutes per inch). The soil between the top, slowly percolating soil and the limiting zone must supply a suitable percolation rate (three to ninety minutes per inch). Thus, the top soil layer, having slow permeability, is removed and enough sand is placed on top of the suitable soil (a minimum of twelve inches) so that a minimum of four feet of suitable material remains between the bottom of the aggregate and the limiting soil. The maximum depth of the excavation (sand fill, aggregate and soil cover) can only be five feet.

Elevated sand mounds are suitable in areas where the soils have a permeability of three to one hundred and twenty minutes per inch, and the limiting zone is twenty inches or more from the soil surface. The shallow depth to the limiting zone requires that the system be built above ground level. In addition, an elevated sand mound using a seepage bed distribution can be used on slopes up to eight percent, while trench distribution can be used on slopes up to twelve percent.

The elevated sand mound system consists of a level layer of sand between the surface of the natural soil and the aggregate distribution area to ensure adequate effluent

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renovation. This layer of sand must be a minimum of twelve inches in depth (the downslope portion of the system may need a greater depth so that the system is level), though the total depth of suitable material - sand and soil - between the aggregate and the limiting zone must be at least four feet. The sides of the sand layer should have a slope of fifty percent.

In addition, the system must include a pressurized distribution network which lies within the gravel aggregate (six inches of aggregate below the laterals, and two inches of aggregate above the laterals). Next, the aggregate is covered within a minimum of one foot of good soil after untreated building paper or hay is applied. The sides of the system are also covered with good soil (a minimum of three feet in width at the top of the aggregate), forming a berm with a slope of fifty percent.

Other modifications to the preceding four subsurface soil absorption systems include dosing systems, alternating absorption areas, serial distribution systems, and oversized beds.

Dosing systems are trenches or beds which receive effluents from a pump or a siphon. This provides an even release of effluents from all points in the pipes. Distribution boxes are not needed in these systems.

Alternating absorption areas are actually two systems in one. One field is dosed and then rested, but the next field is dosed. They require distribution boxes and fields are usually switched every 6 to 12 months.

Serial distribution systems apply effluent by pump through absorption trenches which follow topographic contours. The Trenches are in tiers-one above another. Drop boxes regulate liquid flow so highest trench fills first, second trench fills next, etc. These systems are conducive to severely sloped land.

Oversized beds are absorption beds that are sized larger than normal due to low soil percolation rates. Otherwise, the oversized bed is designed as an absorption bed.

2. Solar Assisted Evapotranspiration System

A solar assisted evapotranspiration system utilizes evaporation of effluent from the soil surface and transpiration of effluent by plants. Typically, they consist of a layer of specifically selected sand overlying a gravel storage bed with perforated distribution piping for effluent distribution. The gravel is topped with a thin layer of sandy loam soil which is planted with vegetation (e.g., alfalfa, flax, rye, etc.). This sand layer draws the effluent, through capillary action, from the gravel bed to the soil surface where it is transpired by the vegetation and evaporated from the soil surface. The system is sealed by an impermeable liner because of site conditions (such as extremely slow percolating soils, high water tables, or shallow soil mantles) which limit the use of conventional systems.

The greatest potential for evapotranspiration systems exists in arid and semi-arid areas where the rate of evaporation exceeds the precipitation rate (which is not the case in Pennsylvania). However, the system can be constructed with a greenhouse type of covering and insulated; consequently, the system is not affected by precipitation or freezing temperatures and can maintain continuous evapotranspiration.

3. Intermittent Sand Filters with Direct Discharge

In floodplain soils or areas of seasonal high water table, areas where the soils will not support any conventional effluent disposal method, an intermittent sand filter system with direct discharge may be installed. Since these systems discharge to surface water, they require a National Pollution Discharge Elimination System (NPDES) permit and must provide improved effluent quality to meet the standards set for discharges to surface waters. In general, the higher quality effluent is produced by intermittently dosing the effluent from a septic tank or aerobic tank into a bed of granular material (a layer of a specific type of sand, twenty-four to thirty-six inches deep) to allow for additional filtration and treatment. The treated effluent is collected by underdrain pipes (placed in a layer of aggregate below the sand bed) and disinfected before being discharged. In addition, the system is enclosed by an impermeable barrier, such as concrete walls and floor or plastic liners, to protect the groundwater.

Specifically, there are three types of sand filter systems: subsurface filters, open filters, and recirculating filters. Subsurface sand filter systems are placed below the natural ground surface with the distribution laterals placed in a layer of aggregate over the granular material. Building paper or a layer of hay or straw is placed over the aggregate, and then the system is backfilled with suitable top soil.

4. Individual Spray Irrigation Systems

Individual spray irrigation systems for small flows utilize a fixed sprinkler irrigation system, similar to those used on golf courses, to spray treated effluent over the surface of the land. These systems require a DEP, Bureau of Water Quality Management permit (established under the PA Clean Streams Law). Prior to spraying, effluent must be processed through an aerobic tank or septic tank/sand filter system for secondary treatment of effluent (about ninety percent removal of the principal pollutants). In addition, a holding facility with a storage capacity for five (5) days flow (2000 gallons minimum) must be included to avoid spraying during adverse conditions such as heavy rainfall, extreme cold, high winds, or deep snow. Finally, disinfection of the treated effluent is required before it is applied to the land.

The sprinkler irrigation system is generally designed to spray for a short period of time (ten minutes) each day. This is usually done at night to avoid contact with people and domestic animals.

5. Holding Tanks

Holding tanks are watertight receptacles which receive and retain sewage and are designed and constructed to facilitate ultimate disposal of sewage at another site (approved by DEP) such as a municipal treatment plant or land application site.

Holding tanks are constructed similar to septic tanks, except that they are sealed to retain both black water (toilet wastes) and gray water (bath, laundry, and kitchen wastes). They must have a minimum capacity to hold one thousand gallons of sewage or three days' sewage flow, whichever is larger; and must be equipped with an audible and visible warning alarm to indicate when the tank has reached seventy-five percent capacity.

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Holding tanks may be used to remedy the failure of existing on-site systems, as a temporary means of sewage disposal pending the installation of public sewers as indicated by an official wastewater facilities plan, or as a permanent facility for use by an institutional, recreational, industrial, or commercial establishment with a wastewater flow of four hundred (400) gallons per day or less. Holding tank installation must be approved by Bucks County Department of Health and East Rockhill Township in accordance with Ordinance 165 adopted 8/20/96. (Refer Appendix)

The major disadvantage with holding tanks is that they require regular service and maintenance (they must be pumped out once or twice a week) to prevent malfunction or overflow. Hence, the yearly pumping costs of a holding tank can be expensive. Frequency of pumping can be reduced by installation of water conservation devices to reduce the amount of wastewater generated.

6. Water Conservation

While not technically an effluent treatment or disposal system option, water conservation is included here due to its impact on wastewater generation, treatment, and disposal requirements. The average daily water use for a family of four is approximately 225-300 gallons (400 gallon/day is used in on-lot system design). This usage can be cut nearly in half when water conservation is practiced throughout the home. Reducing the amount of wastewater generated can usually prolong the life of the existing on-site sewage disposal system or reduce the severity of a failing system. Water conservation can be accomplished by eliminating unnecessary water use and by installing water conservation devices. Ordinance No. 146 adopted on April 21, 1992 (Refer Appendix) established water conservation requirements for all new structures within East Rockhill Township.

COMMUNITY WASTEWATER SYSTEMS:

By strict definition, a community system services two or more lots. However, this section focuses on community wastewater systems that are most feasible for servicing development ranging from small clusters of residences to large subdivisions.

The first step in wastewater processing involves the accumulation and transport of sewage from each home and non-residential site to the treatment site. The most common method is the use of gravity sewers, that convey sewage flows from each parcel to the treatment facility. In areas of hilly or excessively flat terrain, sewage flow is assisted by pumps. This step can account for 60-80% of the total cost of a wastewater management system. Due to the high capital costs, lower cost alternatives for collection systems have been developed.

Wastewater Collection and Conveyance Options

1. Gravity Sewers (conventional)

The conventional gravity sewer is most commonly constructed of PVC pipe and has been the most popular method used for the collection and conveyance of wastewater. Wastewater flows by gravity from the development site to the treatment facility. Pipes are usually 8" in diameter and installed at a minimum depth of 36". Manholes are located a maximum of 400' apart or at changes of direction or significant changes in elevation.

2. Small Diameter Gravity Sewers

A small diameter gravity sewer collects effluent from septic tanks at each service connection and transports it by gravity to a treatment plant or a gravity sewer. In addition to removing grit, settleable solids, and grease, septic tanks significantly reduce peak flows. Both the horizontal and vertical alignments of the pipes can be curvilinear. Sections of the sewer pipe can be laid upgradient, provided there is enough elevation head to maintain flow and there is no backflow into any service connection. Plastic pipe is typically used with a minimum diameter of two inches. Manholes are provided at major junctions of main lines with cleanouts installed at sufficient intervals to permit maintenance. Air release risers are required at, or slightly downgradient of high points in the sewer profile. Because of the small diameters and flexible slope and alignment of small diameter gravity sewers, excavation depths are significantly reduced compared to conventional sewers, greatly reducing excavation costs.

3. Low Pressure Sewers

This system utilizes a small diameter plastic pipe and pressurizing inlet located at each dwelling. Sewage enters the line under pressure and is conveyed to a treatment facility; or to a gravity sewer system and eventually to a treatment facility. Sewage is pressurized through either a septic tank effluent pump or grinder pump. The septic tank effluent pump system utilizes a pump chamber to force effluent from the septic tank into a small diameter plastic line. Thus, the septic tanks must be pumped out to remove accumulated solids. Additionally, the pump chamber must be cleaned periodically to remove any solids which may have carried over from the septic tank.

The grinder pump is a device which receives sewage directly from the dwellings, grinds up the sewage solids and forces the sewage mixture into a small diameter pipe network. An existing septic tank may be utilized as an emergency overflow receptacle in case of grinder pump malfunction.

Low pressure sewer systems are generally less expensive than conventional gravity sewers and may be useful in those areas that are experiencing septic system malfunctions.

An effective variation on the two systems mentioned above is the cluster system, which conveys sewage generated by a group of homes through a small diameter effluent sewer to one large septic tank. Clustered service connections however, have led to disputes over billing and responsibility for nuisance conditions and service calls.

4. Vacuum Sewers

A vacuum sewer system has three major subsystems: the central collection station, the collection network, and the on-site facilities. Vacuum is generated at the central collection station and is transmitted by the collection network throughout the area being served. Sewage from conventional plumbing fixtures flows by gravity to an on-site holding tank. When about 10 gallons of sewage has been collected, the vacuum interface valve, which operates automatically using pneumatic controls, opens for a few seconds allowing the sewage and a volume of air to be sucked through the service pipe and into the main. The difference between the atmospheric pressure behind the sewage and the vacuum ahead provides the primary propulsive

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force. The fact that both air and sewage flow simultaneously produces high velocities and prevents blockages. Following the valve closure, the system returns to equilibrium and the sewage comes to rest at the low points of the collection network. After several valve cycles, the sewage reaches the central collection tank, which is under vacuum. When the sewage in the central collection tank reaches a certain level, a conventional non-clog sewage pump discharges it through a force main to a treatment plant or gravity interceptor.

Wastewater Treatment Options

Unlike densely populated areas, scattered development and rural communities cannot be easily or economically connected to centralized municipal wastewater treatment plants. These areas require wastewater technologies that are capable of handling larger flows than individual on-lot systems, but are less expensive to construct, operate, and maintain than municipal systems. Appropriate wastewater treatment alternatives include: community septic and aerobic tanks, recirculating sand filters, aerated lagoons, package treatment plants, and marsh/pond/meadow systems.

1. Community Septic Tank

In a community septic tank system, wastewater is conveyed from individual residences or establishments to the treatment facility. This facility may consist of large septic tank(s) or aerobic tank(s). The size and/or number of tanks must have the capacity to handle the estimated wastewater flows. Generally, these types of facilities are used for treating up to ten thousand (10,000) gallons per day (gpd) when soils are suitable, and require the same operation and maintenance as individual on-lot septic tanks and aerobic tanks.

2. Sand Filtration

Another wastewater treatment alternative is sand filtration. In this system, effluent from existing on-lot septic and/or aerobic tanks is pumped via a STEP system to a centralized settling tank. After this additional settling, the effluent flows into a recirculating tank and finally to an underdrained sand filter bed. The effluent may be recirculated through the sand filter several times before being disinfected and discharged to a stream, depending on the water quality levels that have to be met.

3. Lagoons/Pond

An aerated lagoon system consists of a series of wide, shallow pools. Sewage flows into the first pool where the solids are separated from the liquid; the liquid flows into a second pool into which air is pumped to aid the micro-biological purification process. When the liquid flows into a third pool, additional settling of solids takes place. The treated effluent can be disposed of by stream discharge (following chlorination) or by land application. Aerated lagoon systems require substantial land area for the series of pools and are not feasible in areas where open space is not available to the community.

4. Package Treatment Plant

Package treatment plant is a wastewater treatment alternative which can be utilized for single family dwellings, commercial/industrial establishments, or community systems. Plants are usually small, prefabricated units that are available commercially to provide treatment for sewage flows of 500 gallons per day (500 gpd) to one

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million gallons per day (1 mgd); however, they are generally more appropriate for sewage flows do not exceed two-hundred thousand (200,000) gpd. When designed, operated, and maintained properly, treatment plants can provide a high level of wastewater treatment.

A small package plant is usually one large tank consisting of two compartments: the larger compartment contains some type of biological or physical/chemical treatment process, while the smaller compartment provides for settling and flotation of solids and scum and disinfection of effluent. There may be a third compartment for sludge digestion. Usually, provisions are not made for primary settling before treatment so that screening and/or comminution (grinding up) the raw wastewater must be provided with the facility. In addition, other physical or chemical equipment are available as add-on modules for better treatment results (i.e., when removal of nutrients - phosphorus and nitrogen - is necessary before discharging to a stream with high water quality standards).

Most package treatment plants provide some type of activated sludge process. This process is similar to that of the aerobic tank for an individual on-lot system; raw wastewater is aerated (in the first compartment) by an aeration device. These devices supply dissolved oxygen to microorganisms which decompose the organic matter; the source of oxygen is compressed air and/or large propellers that churn the water. During the aeration process, the micro-organisms come together and form clusters which settle out with other particles to form an activated sludge (teeming with micro-organisms) in the second compartment. Some of the activated sludge is wasted (removed), where the "hungry" micro-organisms in the activated sludge decompose more organic matter. Thus, a high quality effluent can be produced by this process.

There are several variations to the activated sludge process. The most commonly used method is extended aeration. In this process, a small organic load is treated for a long period of time (twenty-four (24) hours to thirty-six (36) hours). As a result, the plant can accept intermittent loads (which commonly occur in small communities) without upsetting the treatment process.

5. Marsh-Pond-Meadow

In this system, wastewater usually flows into a settling basin which may or may not be aerated. This basin allows for the separation of the solids and liquids. The wastewater then flows into a marsh area where vegetation assimilates available nutrients; the next processing point is a fish-stocked pond where the effluent is further renovated by settling and biological action. In the final step, wastewater flows through a meadow-area where the removal of organics and suspended solids takes place via biological oxidation, sedimentation, and grass filtration. Nitrogen is removed through denitrification (process where nitrates and nitrites are oxidized to nitrogen gas by bacteria) and plant uptake. The runoff from the meadow is collected in a drainage ditch and then chlorinated before discharge to a stream or subsurface absorption area.

The marsh-pond-meadow system requires a substantial amount of land, yet minimal amounts of labor and energy. In addition, this type of system could support crop production (i.e., marsh vegetation and meadow grasses for animal feed supplements) and provide habitats for fish and wildlife. The system may be a feasible alternative where soils conditions are not suitable for septic tank systems.

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6. Constructed Wetlands

Wastewater enters the constructed wetland where it is distributed evenly across the width of the first cell by a series of plastic valves or PVC tees. The first cell contains gravel. A waterproof liner is used on the sides and bottom of the first cell to conserve water and provide more effective treatment. Cattails and bulrushes are usually planted in the first cell. The roots of these marsh plants form a dense mat among the gravel. Here chemical, biological and physical processes take place which purify the water. Water from the first cell passes into the second cell through a perforated pipe embedded in large stone. The water level within each cell is regulated by swivel standpipes located in concrete tanks at the end of each cell. Wastewater in the second cell is distributed evenly across this cell through another perforated pipe. Cell 2 has a layer of gravel covered with topsoil and then mulch. This cell is planted with a variety of ornamental wetland plants such as iris, elephant ear and arrowhead. The water in Cell 2 eventually seeps into the soil below or passes into another perforated pipe where it is released into a drain field similar to those used with conventional septic tanks.

Treated Effluent Disposal Options

Two treated effluent disposal alternatives are available: stream discharge and land application. Treated effluent can be disposed of by discharging it to a local stream (stream discharge) or by applying it to the land (land application). Stream discharge requires disinfection of treated wastewater prior to disposal. When the receiving stream exhibits low flow, extensive treatment is necessary. That may not be cost-effective when compared with other methods requiring less treatment. The primary potential impact of stream disposal of wastewater is degradation of stream water quality.

Land application of wastewater can be accomplished through two methods when soil conditions are suitable: community subsurface disposal and spray irrigation. Community subsurface disposal method is similar to individual on-lot septic systems in that it utilizes a large network of subsurface pipes and includes a pumping system that assures equal distribution of the effluent throughout the pipe network. Disinfection with chlorine is not required for subsurface disposal. Although more sophisticated than the standard septic system, proper design and construction are essential for proper performance. In those areas with restrictive environmental factors, the subsurface absorption network can be modified in a way similar to that described for the individual septic systems. While subsurface disposal replenishes the groundwater supply, groundwater contamination may result if the system is not properly designed and operated.

The second method of land application is through spray irrigation. With this method, treated and disinfected sewage is conveyed from the treatment facility to a suitable site and is sprayed over the surface of the land. As with the large subsurface disposal network, this method requires careful design, construction and operation to ensure proper wastewater disposal.

The impacts associated with spray disposal include: recharge of local groundwater supply; possible groundwater contamination if system is poorly designed, constructed, or managed; and potential harmful viruses could disperse through spraying treated wastewater effluent over land; however, proper design can minimize this potential problem.

CHAPTER 6 WASTEWATER FACILITIES MANAGEMENT

Management of sewage facilities is critical to successful long-term operation of properly designed and installed systems. Management functions include actions or activities to ensure achievement of the management program objectives. Management functions include public education, environmental/public service programs, planning assistance, site evaluation, system design review, installation or construction supervision, operation and maintenance certification, financing, rehabilitation assistance, and monitoring and enforcement.

Many of these functions are performed by three separate levels of government: Commonwealth of Pennsylvania (Pennsylvania Department of Environmental Protection), Bucks County (Bucks County Health Department), East Rockhill Township; and the system owner/user.

Table 6-1 identifies responsibility and performance of these management functions by the various entities, including the property owner/user. As indicated in Table 6-1, some of these functions are not currently performed.

Historically, on-lot systems (OLDS) have been operated by individual homeowners who are generally unaware of the maintenance requirements of these systems. While on-lot disposal systems can provide a good solution to individual wastewater problems, on-lot systems can also cause surface and/or groundwater pollution problems depending upon soil characteristics, system design, construction and operation, and maintenance. Failure to properly maintain on-lot sewage disposal systems may result in waste problems. A major force for installation of public sewers is the failure of on-lot systems which occur in areas of concentrated development. Typically, little effort is given to rehabilitation of on-lot disposal systems once problems exist. This is unfortunate since public sewers may be extended into an area to solve on-lot disposal problems experienced by only a small percentage of homeowners.

Many problems associated with on-lot sewage systems can be avoided and/or corrected through implementation of a management plan. To be effective, an on-lot management plan must include the following:

- Educate users on the necessity for proper operation and maintenance of on-lot systems.
- Provide technical assistance to users, including rehabilitation or remedial action.
- Provide assurance that alternate systems are properly operated and maintained.

Further detail concerning the administrative, technical, and enforcement aspects of certain of the above mentioned management functions are listed in Table 6-2.

Administrative needs of the on-site management function require that some agency be responsible for a specific geographical area. An "on-site management district" is a delineated area within which sewage facility needs are met through the use of community and/or individual on-site facilities. Installation of new facilities and operation and maintenance of all facilities is handled by an operating agency. The agency is responsible for future sewage facilities planning for the district. The agency serves to disseminate public information responsible for educating homeowners to properly maintain and prolong the life expectancy of their systems.

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An on-site management district could be formed at any one of the following levels:

- Township wide - to include all on-lot disposal systems within the Township (approximately 850 dwelling units).
- Specific management district which would serve only areas identified with an on-lot disposal system problems or concentrated on-lot systems.

Administrative and regulatory responsibilities for OLDS management could be assumed by an existing public, quasi-public, or private entity. Additionally, a new Municipal Authority could be established by the Township Supervisors. Some advantages to creation of an Authority include: (1) Improving opportunity for outside financing; (2) Insulating projects from electoral politics; and (3) Protecting the Township from legal action. However, an Authority made up of appointed members may be less responsive to the needs of the community than the elected members of the Board of Supervisors.

Participating homeowners using individual systems would be charged a monthly fee, which could be based on the age of their system (i.e., older systems which require more maintenance would have higher monthly fee). Homeowners served by community on-site facilities would pay an annual fee based on the number of units served by the system in a yearly operational cost.

To properly implement a full fledged OLDS management program, sufficient administrative, technical, financial, and legal capabilities must be in place or created to perform the selective functions from the above list. These functions are intended to ensure adequate public service and performance of the OLDS. However, the degree to which the Township becomes involved with OLDS and management thereof can vary from total management of OLDS by the Township or an Authority to a public education program administered by the Township or an agency of their choice. A range of OLDS management options are presented in Table 6-3.

**TABLE 6-1
ON-SITE MANAGEMENT FUNCTIONAL RESPONSIBILITIES**

	Management Issue	Responsibility					Requirements Comments
		State	BCHD	Township	Private	Not Done	
DESIGN	Design Standards	*					State Set Standard.
	Designer Prerequisite		*				Designer Shall Be Registered Engineer Or Supervisor Or Other Approved Professional
	Office Preconference		*				County Reviews Site Feasibility And Provide Education Material To Builder.
	Site Feasibility Analysis		*				Site Analysis Witnessed By County
PLANNING	Plan Review Of OLDS		*				
	Construction Permit		*				
	As-Built Plan Of OLDS		*				Done By County During Construction Inspection.
CONSTRUCTION	Installer Registration					*	
	Performance Bond Or Escrow Fund			*			Required By Township For Certain Types Of OLDS.
	Inspection Prior To Placement Of Backfill		*				
OPERATION	Occupancy Permit Issued When OLDS Is Completed			*			Township Will Not Issue Occupancy Permit Until County Approval Of OLDS.
	Routine Inspection			*	*		Township Involvement For Certain Types Of OLDS.
MAINTENANCE	Pumping				*		
	Pumping Registration		*				
	Record Keeping					*	
MONITORING	Surface Water Quality Testing					*	
	Groundwater Quality Testing					*	Some Testing Completed By Township In Areas Of Concentrated OLDS.
	Site Inspection		*	*		*	Not Done Routinely. Township & County Does Need Surveys And Inspections When Notified Of Problem.
REHAB.	Enforcement		*				
	Repairs				*		
FINANCING	Permit		*	*			Township Requires Permit For Holding Tanks & Alternate Systems.
	Performance Bond Or Escrow Fund			*			Required For Holding Tanks & Alternate Systems.
	Cost Of Maintenance				*		
PUBLIC EDUCATION	Design		*				
	Operation		*			*	Some Literature Is Available
	Maintenance		*			*	
	Rehabilitation		*			*	

TABLE 6-2

MANAGEMENT FUNCTIONS AND ACTIVITIES

Site Evaluation-System Design

1. Determine most feasible wastewater system to be applied on a community case-by-case (e.g., individual lot or subdivision) basis.
2. Develop program for septage pumping, hauling, treatment, and disposal.
3. Develop procedures for identifying and correcting system failure.

Administrative/Technical Activities

- a. Conduct site suitability analysis by evaluating physical characteristics (soils, topography, hydrology, geology) of an area, lot or disposal site under consideration.
- b. Identify and evaluate alternative wastewater systems.
- a. Develop policies toward regulating septage haulers and disposal sites.
- b. Record hauler activities as part of the operation and maintenance program.
- a. Provide opportunity to hear complaints concerning system malfunctions. Respond to complaints on a case-by-case basis.
- b. Define system failure, and initiate program to identify failing system.

Regulatory/Enforcement Activities

- a. Establish guidelines and procedures for soil suitability and site selection. Develop criteria for determining lot size.
- b. Develop cost-effectiveness guidelines and procedures.
- a. License septage haulers and set standards for hauling equipment. Inspect pumping trucks. Regulate and inspect operations of septage treatment and disposal facilities and locations.
- b. Require septage hauler to record pumping activities as a condition of license or certification renewal.
- a. Obtain legal authority to require system repair/replacement where malfunctions are discovered. Consider following regulatory mechanisms: liens on property, injunctions, and fines.
- b. Incorporate system rehabilitation program as part of operation and maintenance effort. Issue violation and abatement notice.

Financing

1. Secure funds for the planning, design, construction, and operation of noncentral systems.

- a. Obtain grants and loans from state, federal, and other sources.
- b. Set and collect equitable user fees to cover program administration, and system design, installation, maintenance, and repair/replacement costs. Outline specific fiscal responsibilities of homeowner and management entity.

- a. Obtain legal authority to accept grants and incur debt.
- b. Set user fees based on number of units served, age of system, ability to pay, O & M required, service life, and debt costs. Collect fees through property assessments, permit fees, periodic service charges, costs of repairs, liens on property for repair costs, etc.

Water Quality Monitoring

1. Monitor surface water and groundwater near noncentral systems for compliance with permit conditions.

- a. Conduct periodic water quality sampling and analysis.
- b. Investigate potential system failures.

- a. Define effluent standards, discharge limitations, performance requirements, and sampling frequency.
- b. Issue violation notice. Require replacement/repair of failing systems.

Public Education

1. Inform public of noncentral system maintenance requirements and homeowner responsibilities.

- a. Provide information to public of water conservation methods, system inspections, maintenance procedures, and maintenance program requirements.
- b. Coordinate with agencies (e.g., public utilities, regulating agencies, etc.) and act as liaison between homeowners and agencies.
- c. Developer and property owner should be made aware of siting considerations and alternative wastewater management opportunities prior to development planning.

- a. Disseminate booklets, pamphlets, etc., discussing maintenance practices and homeowner responsibilities.
- b. Establish communication mechanisms with homeowner to inform them of maintenance responsibilities and to help identify failing systems.
- c. Prepare detailed guidelines (e.g., design examples) relating to planning review and permit approval processes. Initiate pre-development planning sessions with developer/property owner.

2. Initiate training and certification programs for site evaluators, enforcement officials, installers, designers and haulers.

- a. Sponsor workshops and training course for contractors, engineers, and regulatory staff on technical aspects of site evaluation, system design, and installation.

- a. Require and enforce certification of contractors, septage haulers, and inspectors, preferably with testing programs.

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East Rockhill Township policies concerning OLDS management shall be as follows:

1. The Township OLDS management program will be based on Option #3 (for community and alternative systems) and #4 (for "conventional" systems) in Table 6-3. The program will include a public information/education campaign to encourage homeowners to use sound maintenance practices, and public assurance for certain types of disposal systems.
2. Alleviation of failing septic tank problems should first be attempted through public education programs, mandatory water conservation devices and required maintenance. Installation of alternative systems should be utilized only if these methods fail to solve the problems. All alternative systems which are most suitable for the particular soils should be considered. Public sewers should be considered only within the Residential (R-1) and Suburban (S) Zoning Districts, and as an alternative within the Schwenk Mill Road study area.
3. In order to ensure proper operation of existing on-lot systems, routine maintenance must be accomplished. While the homeowner has the sole responsibility for operation and maintenance; the Township should require use of water conservation devices on all new construction as required by the Delaware River Basin Commission, and administer a public education program to disseminate information on proper operation and maintenance.
4. Alternative systems utilized for on-site sewage disposal in areas of poor soils, holding tanks, and community sewage collection and treatment systems designed for cluster housing developments present increased and/or complex levels of operation and maintenance, requiring additional municipal involvement:
 - A. Individual on-lot alternative disposal systems (i.e. spray irrigation, small flow treatment system, etc.) will be required through municipal ordinance to include public assurance of proper operation and maintenance via execution of an appropriate agreement with financial security.
 - B. A holding tank permit will be required to be obtained from East Rockhill Township in addition to permit requirements of the Bucks County Health Department and/or Department of Environmental Protection. The Township permit requirements authorized by adoption of Ordinance _____ (refer Appendix) provides public assurance of proper operation and maintenance via execution of an appropriate agreement with financial security.
 - C. Community sewage disposal systems will be permitted only when designed in accordance with specifications of the Bucks County Health Department, Department of Environmental Protection, and East Rockhill Township. Community sewage disposal systems must be offered for dedication to the Township.

TABLE 6-3
ON-LOT DISPOSAL SYSTEMS MANAGEMENT
OWNERSHIP/MAINTENANCE OPTIONS

1. Public Ownership/Public Operation and Maintenance
 - Township ownership of all wastewater treatment and disposal systems;
 - Operation and maintenance function the responsibility of the Township not the property owner; and
 - Property owner is a customer of the system.
2. Private Ownership/Public Operation and Maintenance
 - System ownership by the property owner or homeowner's association;
 - Township responsible for operation and maintenance functions; and
 - Property owner is a customer of the system.
3. Private Ownership/Private Operation and Maintenance With Public Assurance Program
 - System ownership by the property owner or homeowner's association;
 - Property owner responsible for system operation and maintenance; and
 - Township inspects, and monitors operation, and requires proof of pump out of septage once every three years for individual on-lot disposal systems. Community on-lot disposal systems would be required to submit an operation and maintenance program, maintenance schedules, and performance reports.
4. Private Ownership/Private Operation and Maintenance
 - System ownership by the property owner or homeowner's association;
 - Property owner responsible for system operation and maintenance;
 - Township receives monitoring reports from owners of community and spray irrigation system; and
 - Township administers a public education program to inform residents of the need for system maintenance and water conservation.

CHAPTER 7 STUDY AREA ALTERNATIVES ANALYSIS

This chapter describes the various alternatives which were analyzed for each study area described in Chapter 4 and delineated on Figure 4-1. In some cases, cost estimates have been prepared for comparison purposes only. Prior to implementation of any of the alternatives, a detailed feasibility study would be required to obtain a more accurate estimate of cost.

DEVELOPMENT STUDY AREA:

The 1987 Pennridge Area Wastewater Facilities Plan proposed this portion of the Township to be the area where anticipated development would be directed, and where a full range of coordinated services could be reasonably provided. Based on the 1987 plan, development within this area would be provided with public sewers based on a progression of sewer service from existing facilities. This area was increased by the re-zoning of the Fenley Tract located between Fifth Street and Branch Road from "RA" (Residential Agricultural) to "R-1" (Residential) to permit development of the Fenley Tract as a Performance Subdivision consisting of 181 townhouse/single family dwelling. Additionally, the Township has received an application for development of the "Weidner Farm" located on Branch Road and Seven Corner Road within the "S" (Subdivision) Zoning District. The sketch plan submission proposes an additional 125 single family dwellings. Another 33 single family dwellings have been proposed on the Lysak property located on Three Mile Run Road within the "R-1" (Residential) Zoning District. These developments create an immediate need for public sewer facilities (treatment plant capacity) which are currently unavailable.

The following sewage facilities alternatives were analyzed for the development area:

1. Continued reliance on PWTA to provide treatment capacity.
2. Community sewage treatment facilities.
3. Additional treatment capacity - PWTA.
4. Public treatment facility.

Alternatives for Development Area:

Alternative #1 - Continued Reliance on PWTA

Description: This alternative is essentially a "no-action" plan for the development study area and would provide no change in the current situation. This approach would mean no immediate plans for additional wastewater treatment capacity and would rely on the ability of the Pennridge Wastewater Treatment Authority (PWTA) and participating members to reduce inflow/infiltration and/or propose plant modifications which would result in DEP approval of additional plant capacity at the existing treatment facility. Based on PWTA calculations of remaining East Rockhill Township purchased plant capacity (37 EDU's), or Township estimates of remaining purchased capacity (approximately 509 EDU's); this alternative provides insufficient treatment capacity to meet both immediate and future development needs within the designated development area. (Refer Table 7-1) Note that effective February, 1996, PWTA revised the basis for an EDU to 400 gpd.

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TABLE 7-1
PENNRIDGE WASTEWATER TREATMENT AUTHORITY
Evaluation of Municipal Capacity Status ⁽¹⁾
APRIL, 1996

Purchased Plant Capacity	<u>EDU's⁽²⁾</u>
Existing Plant Utilization ⁽³⁾	927
PWTA Allocated Plant Capacity ⁽³⁾	677
Remaining Plant Capacity ⁽⁴⁾	<u>176</u>
	74 ⁽⁵⁾

- (1) As determined by PWTA.
- (2) Based on 400 gpd/EDU.
- (3) As determined by PWTA.
- (4) DEP approved Planning Modules plus PWTA allocated in-fill capacity.
- (5) Based upon PWTA "Capacity in Treatment Plant" (Using 400 GPD) summary provided to the Township in February, 1996. However, PWTA "Assignment of EDU's" Report for April 1, 1996 indicates only 37 EDU's are available for distribution.

Based upon PWTA calculation of remaining East Rockhill Township plant capacity (April 1, 1996), only 37 EDU's remain available. Accordingly, this alternative provides insufficient treatment capacity for existing development proposed via the final plan approval of the Fenley tract, or proposed (sketch plan) developments on the Weidner Farm and Lysak properties.

Impacts: The following impacts are associated with this alternative:

1. Noncompliance with requirements of the Pennsylvania Sewage Facilities Act (Act 537).
2. Loss of Township control of development and wastewater facilities.
3. Undermining of the Township planning goals and objectives utilizing the development district concept.
4. Potential development proposals for alternative community systems in noncompliance with Township policy and planning documents.
5. Increased development pressure outside of the designated development study area and "haphazard" development of the community.
6. Property values within the designated development study area could be suppressed.

Alternative #2 - Community Treatment Facility

Description: This alternative is essentially a "no action" alternative similar to Alternative #1 with the exception that Township policy would be amended to permit community wastewater treatment facilities within the development study area. This approach would reduce East Rockhill Township's involvement in the planning, development, financing, construction, operation and maintenance of centralized sewage collection and treatment facilities for development within the area. The proposed future phases of townhouses/single family homes on the Fenley Tract would utilize a centralized sewage collection system and community treatment facility. Weidner farm (125 units) located within the Suburban District would be served by a

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second community treatment facility. A third treatment facility could be developed for the Lysak Subdivision (33 units). In accordance with DEP requirements, East Rockhill Township would be involved in guaranteeing future operation and maintenance of these facilities which would be owned and operated by a homeowner's association or other private entity.

Impacts: The following impacts are associated with this alternative:

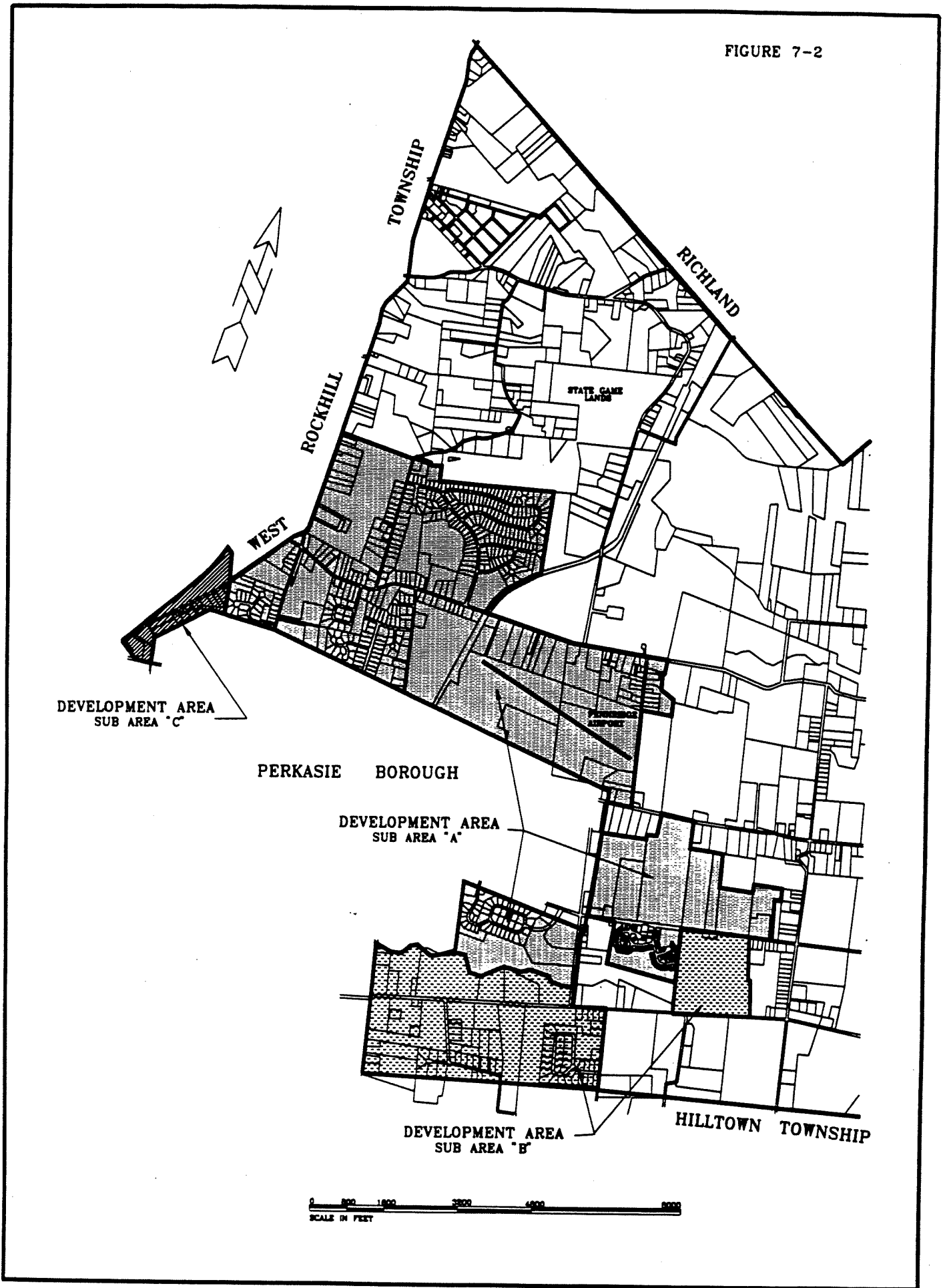
1. Noncompliance with requirements of the Pennsylvania Sewage Facilities Act (Act 537).
2. Planning, development, ownership and maintenance responsibilities for sanitary sewer collection and treatment facilities would become the responsibility of the landowner/developer.
3. Township involvement in planning, design, and maintenance of wastewater treatment facilities will be reduced.
4. Township control over future planning and available capacity to serve the development study area is reduced.
5. Township control over planning and siting for future treatment facility capacity development is reduced.
6. Increased development pressures outside of the development study area may occur.
7. Property values within the designated development study area could be suppressed.

Alternative #3 - Additional Treatment Capacity/PWTA

Description: This approach includes a continued East Rockhill Township involvement with Pennridge Wastewater Treatment Facility to provide wastewater treatment capacity in accordance with the treatment plant agreement executed on November 1, 1975. To analyze this alternative, the development study area was divided into two sub-areas. The delineation of the sub-areas was determined by existing land use, potential future development, zoning requirements, existing sewer and water facilities, natural features, and pending development. Sub-area "A" and Sub-area "B" are shown on Figure 7-2. (Sub-area "C" is a site specific study area of Sub-area "A" and is discussed later in this chapter.)

Existing/future wastewater treatment plant requirements were determined for each sub-area and include existing development, PWTA plant capacity utilization, PWTA allocated plant capacity, purchased (reserved) treatment capacity, and future development. PWTA allocated capacity utilized in the determination of existing/future treatment plant requirements was based on parcels identified in September 18, 1993 correspondence to PWTA and represent lots which have received Planning Module approval by DEP.

FIGURE 7-2



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**TABLE 7-3
PWTA ALLOCATED PLANT CAPACITY
Designated For Specific Use
(As of April 1, 1996)**

<u>Development</u>	<u>Allocation</u>
Chadd's Place	7
Bridgeview	21
Hillendale	5
Park Ridge	1
Pines at Pennridge	2
Ridge Run III	5
Ridge Run IV	30
Stoney Hill	5
Fenley (Phase I)	85
Bryan	2
Individual Parcels	8
Unreserved/In-fill	<u>9</u>
	180 EDU's

Table 7-4 identifies existing/future treatment capacity requirements for Sub-area "A" based on the November 1, 1975 treatment plant agreement and existing/future development wastewater disposal requirements. An excess of 294 EDU's of PWTA plant capacity was purchased for Sub-area "A".

**TABLE 7-4
DEVELOPMENT STUDY AREA
Sub-Area "A" Existing/Future Treatment Plant Requirements**

Purchased Capacity ⁽²⁾	<u>EDU's⁽¹⁾</u> 1349
Existing PWTA Capacity Utilization ⁽³⁾	(677)
PWTA Allocated Plant Capacity ⁽⁴⁾	(180)
Allocated Capacity ⁽⁵⁾	(198)
Future Development	<u>(150)</u>
Sub-Total	144
Plant utilization Reduction ⁽⁶⁾	44
PWTA Allocated Plant Capacity ⁽⁷⁾	<u>106</u>
Total	294 = 0.081 mgd

- (1) EDU = 275 gpd
- (2) Total development area PWTA plant capacity purchased.
- (3) Total development area based on ERT records.
- (4) Refer Table 7-3. Includes all allocated capacity except "Bridgeview".
- (5) Purchased capacity reserved by Pennridge Airport for development within the Industrial District. (Not included on PWTA reports)
- (6) Existing residential connections in Sub-area "B".
- (7) Bridgeview and Fenley Phase I. (Refer Table 7-3)

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This available capacity is in excess of the current PWTA allocated capacity for approved Planning Modules and in-fill lots (total of 180 EDU's), but includes the PWTA calculated available plant capacity of 37 EDU's. Thus, based on Township calculation of purchased plant capacity, East Rockhill Township has an excess of 294 EDU's of purchased plant capacity at PWTA for development Sub-area "A".

Under current PWTA policy and allocation, all existing development parcels and several in-fill lots have been allocated plant capacity. (74 of the allocated 180 EDU's are located within Sub-area "A".) There is one (1) development currently under review (Lysak - sketch plan proposing 33 single family dwellings) within Sub-area "A" which would require additional PWTA capacity at this time. Additionally, potential extension of sewage facilities within Study Area Sub-Area "C" to service development within septic system failures may require additional capacity. Reduction of East Rockhill Township utilization of treatment capacity at PWTA and release of PWTA allocated plant capacity for Bridgeview and Fenley Phase I within Sub-area "B" would provide an additional 106 EDU's for use within Sub-area "A". Utilizing the PWTA remaining capacity figures(37 EDU's), and a reduction in plant utilization due to removal of Sub-area "B" from PWTA treatment facility results in an additional required treatment plant capacity of 205 EDU's to provide for future development within Sub-area "A". Based on Township determination of remaining plant capacity, a total of approximately 642 EDU's would be available at PWTA treatment facility for use within Sub-area "A". This would provide sufficient capacity for future development within the area, possible future extension of public sewer facilities to the Schwenk Mill Road area (if determined necessary and economically feasible), and to account for infiltration/inflow into the East Rockhill Township sanitary sewer collection system contributing to infiltration/inflow problems at PWTA plant.

DEVELOPMENT AREA SUB-AREA "B":

Treatment plant requirements for Sub-area "B" include existing connections and PWTA allocated capacity for approved Planning Modules within the sub-area, development of the Fenley Tract consisting of 180 townhouse/single family homes plus the existing single family dwelling currently utilizing an on-site sewage disposal system, and in-fill development within the Suburban Zoning District. (The Fenley Tract development, Phase I, received Planning Module approval from PADEP on April 19, 1996. Approval provides for 85 units to be treated by the Pennridge Wastewater Treatment Authority sewage treatment plant. Planning Modules provide that sewage from future phases will be treated at a new facility to be constructed by East Rockhill Township. Refer Appendix for PADEP Approval correspondence) A total of 411 EDU's are required to provide for existing, planned, and future development within Sub-area "B". (Refer Table 7-5)

**TABLE 7-5
DEVELOPMENT STUDY AREA
Sub-Area "B" Existing/Future Treatment Plant Requirements**

	<u>EDU's⁽¹⁾</u>
Existing Connections ⁽²⁾	44
Allocated Capacity ⁽³⁾	106
Future Development	
R-1 District (Fenley Phase II)	96
S District	145
In-fill Development	<u>20</u>
Total	411 = 0.113 mgd

- (1) EDU = 275 gpd
- (2) Flow treated at PWTA.
- (3) Purchased capacity allocated by PWTA. (Bridgeview/Fenley Phase I)
- (4) Includes proposed Weidner Farms - 125 EDU's.

This alternative would require development of a publicly owned treatment plant with ultimate discharge to the East Branch of the Perkiomen Creek, and modification to sewage collection and transportation facilities to separate existing wastewater flow from the area to direct same to the new treatment facility, as well as to collect wastewater flow generated from the proposed development of the Fenley tract. Sewage treatment and disposal for the public treatment facility is proposed as a package treatment plant due to the study area size and available stream discharge alternative. Consistent with requirements of the prior 1987 Wastewater Facilities Component and other Township planning documents, land application (spray irrigation) was not considered an alternative within the development area due to the extensive land requirements. Additionally, Township ownership of Tax Map Parcel #12-013-006-001 consisting of 10 acres located on Branch Road and adjoining East Branch Perkiomen Creek is available for development with a sewage treatment facility.

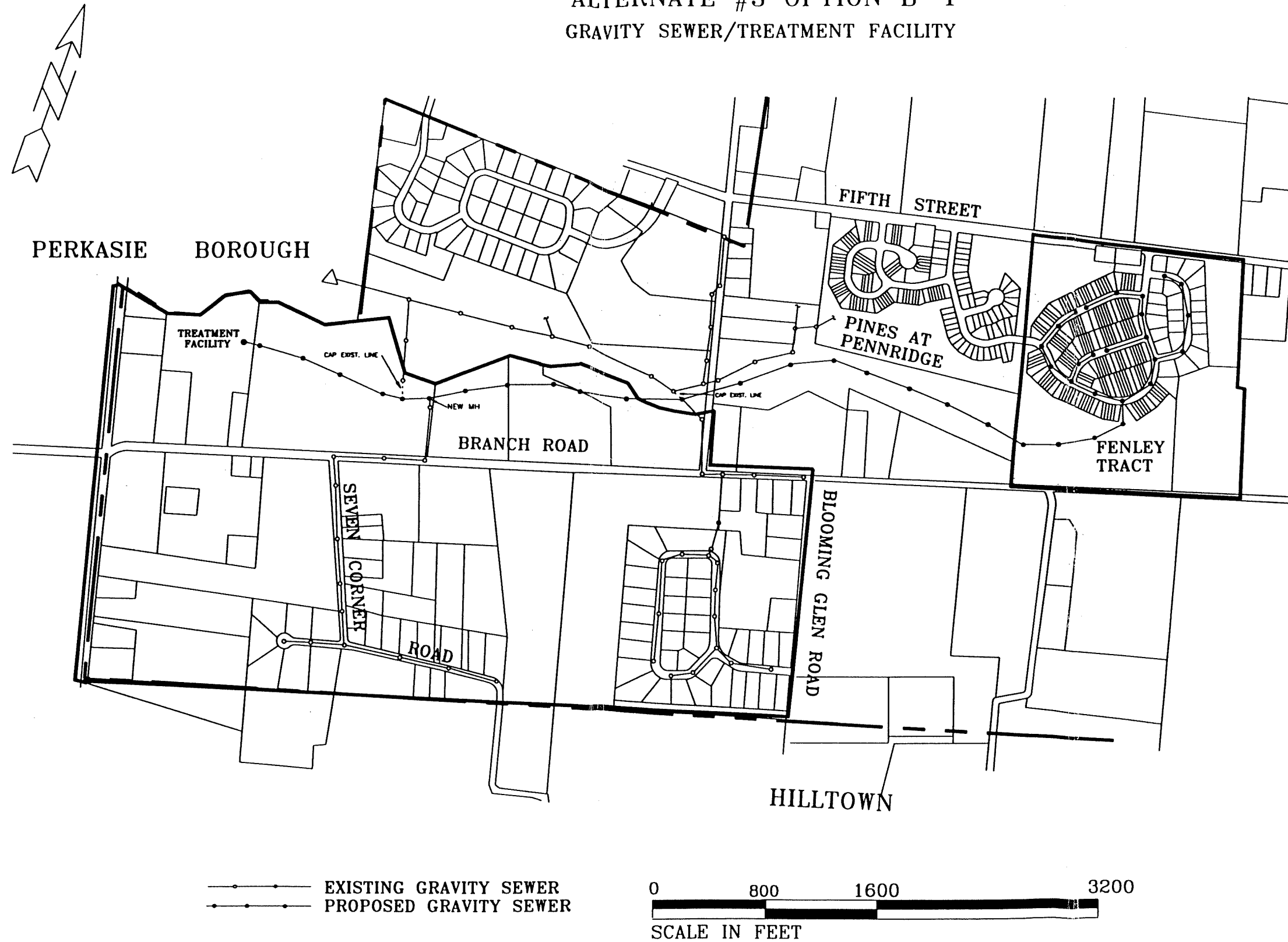
The following structural sewage facilities for collecting and transporting wastewater from Sub-area "B", including proposed development on the Fenley Tract, were analyzed with comparative cost estimates:

1. Conventional (8 inch) gravity sewers.
2. Conventional (8 inch) gravity sewers with reconstruction of Branch Road collection.
3. Conventional (8 inch) gravity sewer/4 inch small diameter force main.

Option B-1 - Gravity Sewers (8 inch) - Option B-1 proposes construction of approximately 5,900 LF of 8 inch gravity sewer main constructed from the proposed treatment facility location on TMP #12-013-006-001 along the East Branch Perkiomen Creek to an internal collection system proposed within the Fenley Tract development. Existing sanitary sewer collection would be intercepted at Manhole 8-1 and Manhole 1-3. (Refer Figure 7-6)

DEVELOPMENT AREA - SUB AREA "B"
ALTERNATE #3 OPTION B-1
GRAVITY SEWER/TREATMENT FACILITY

FIGURE 7-6



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COST ESTIMATE OPTION B-1 - 8 INCH GRAVITY SEWERS

	<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> \$	<u>Cost</u> \$
1.	Clearing (30 Ft. Width)	4 Ac.	5,000/Ac.	20,000
2.	Construction Stakeout	LS	-----	5,000
3.	Erosion and Sedimentation Control			
	Silt Fence	6,500 LF	1.50/LF	9,750
	Rock Outlets	60 Ea.	50/Ea.	3,000
	Construction Entrances	4 Ea.	2,000/Ea.	8,000
	Temporary Seeding	LS	-----	1,500
4.	Manholes (12 Ft. Depth)	19 Ea.	2,400/Ea.	45,600
5.	8" SDR 35 PVC Sewer Pipe	5,900 LF	60/LF	354,000
6.	Stream Crossing	1 Ea.	5,000/Ea.	5,000
7.	Roadway Crossing/Restoration	1 Ea.	2,500/Ea.	2,500
8.	Traffic Control	LS	-----	500
9.	Right-of-way Restoration	4 Ac.	3,000/Ac.	<u>12,000</u>
			Subtotal:	466,650
	Legal/Administration (2%):			9,330
	Engineering Inspection (10%):			46,670
	Contingency (10%):			46,670
	Right-of-way Acquisition	4 Ac.	5,000/Ac.	<u>20,000</u>
			Total:	\$589,320

Option B-2 Modified Gravity Sewers - This option proposes construction of approximately 5,800 LF of 8 inch gravity sewer main from the proposed treatment facility location on TMP #12-013-006-001 to an internal collection system proposed within the Fenley Tract development. This option varies from Option B-1 by locating the sewer main along Branch Road. Approximately 1,000 LF of existing sewer main would be removed and replaced to increase sewer line depth along Branch Road. (Refer Figure 7-7)

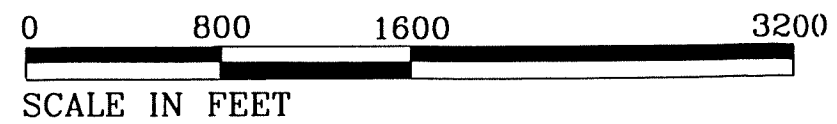
DEVELOPMENT AREA - SUB AREA "B"

ALTERNATE #3 OPTION B-2

MODIFIED GRAVITY SEWER/TREATMENT FACILITY



—●—●— EXISTING GRAVITY SEWER
—●—●— PROPOSED GRAVITY SEWER



CHAPTER 7

**COST ESTIMATE
OPTION B-2 GRAVITY SEWERS (8") - BRANCH ROAD EXTENSION**

<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> \$	<u>Cost</u> \$
1. Clearing (30 Ft. Width)	2.4 Ac.	5,000/Ac.	
2. Construction Stakeout	LS	-----	5,000
3. Erosion and Sedimentation Control			
Silt Fence	3,400 LF	1.50/LF	5,100
Rock Outlets	34 Ea.	50/Ea.	1,700
Construction Entrances	2 Ea.	2,000/Ea.	4,000
Temporary Seeding	LS	-----	1,000
4. Remove Exist. Pipe/Manholes	1,000/LF	15/LF	15,000
5. Manholes (12-14 Ft. Deep)	20 Ea.	2,400	48,000
6. 8" SDR 35 PVC Sewer Pipe	5,800 LF	60/LF	348,000
7. 2A Modified Stone Backfill	6225 CY	12/CY	74,700
8. Roadway Reconstruction			
Neat Cut	54 LF	0.75/LF	40
6" Modified Stone	4,800 SY	8/SY	38,400
4" BCBC	4,800 SY	6/SY	28,800
2" ID-2 Binder	4,800 SY	4/SY	19,200
1" ID-2 Wearing	4,800 SY	3/SY	14,400
Tack Coat	4,800 SY	0.60/SY	2,880
9. Stream Crossing	1 Ea.	5,000/Ea.	5,000
10. Traffic Control	LS	-----	500
		Subtotal:	634,020
		Legal/Administration (2%):	12,680
		Engineering Inspection (10%):	63,400
		Contingency (10%):	63,400
Right-of-way Acquisition	2.4 Ac.	5,000/Ac.	<u>12,000</u>
		Total:	\$785,500

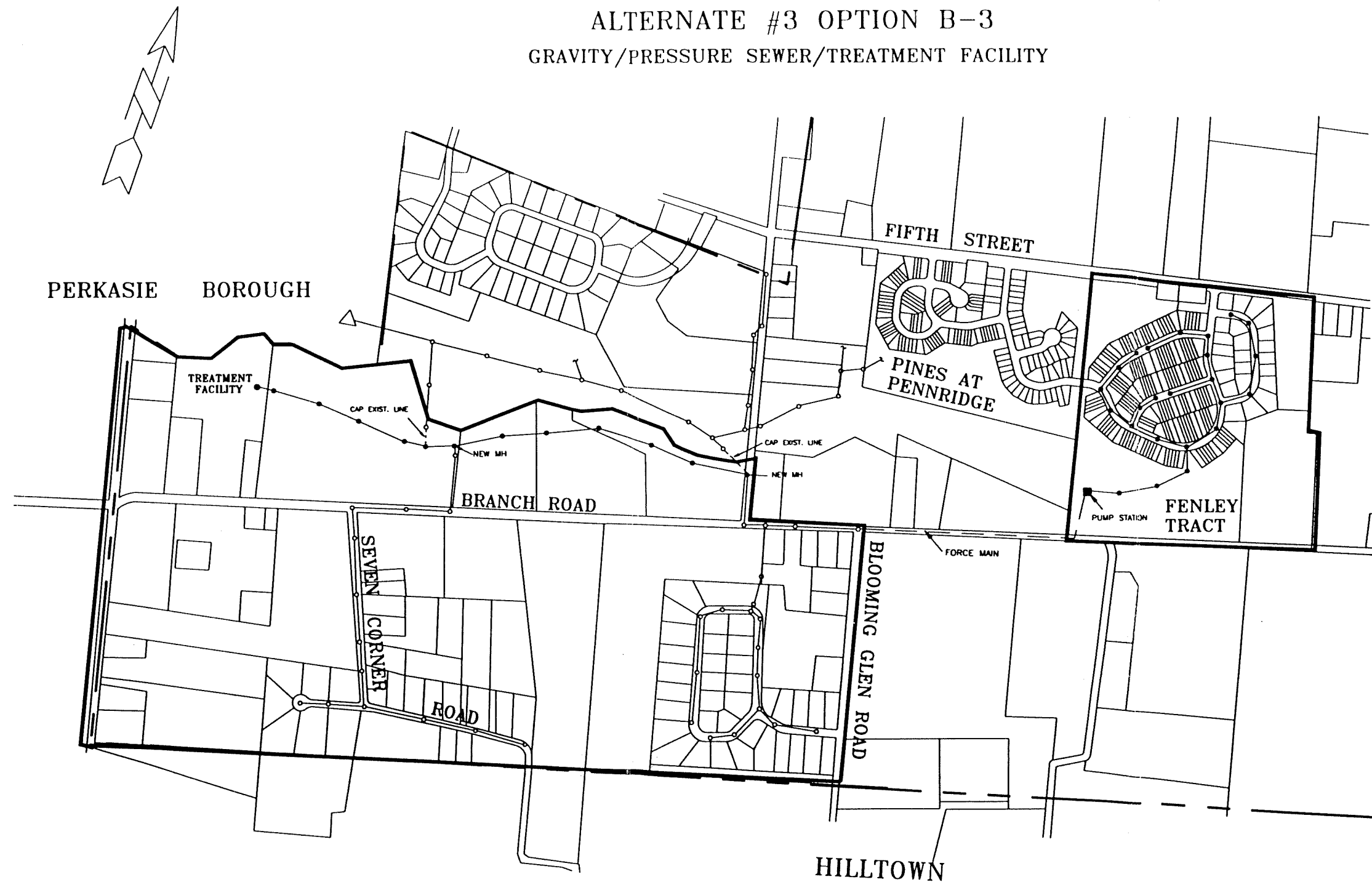
Option B-3. Gravity/Pressure Sewer - An 8 inch gravity sewer main (approximately 3,400 LF) would be constructed between the proposed treatment facility location and Blooming Glen Road similar to Option B-2. Existing sewer main located in Blooming Glen Road and Branch Road would continue to be utilized. A 4 inch force main to be constructed in Branch Road is proposed to extend service to the Fenley Tract. This option requires construction of a pumping station. (Refer Figure 7-8)

DEVELOPMENT AREA - SUB AREA "B"

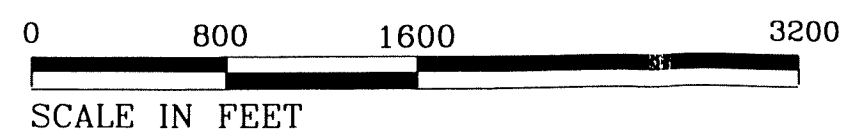
ALTERNATE #3 OPTION B-3

GRAVITY/PRESSURE SEWER/TREATMENT FACILITY

FIGURE 7-8



- EXISTING GRAVITY SEWER
- PROPOSED GRAVITY SEWER
- - - PROPOSED 4" FORCE MAIN
- PROPOSED PUMP STATION



CHAPTER 7

COST ESTIMATE

OPTION B-3 GRAVITY SEWERS (4" FORCE MAIN) - BRANCH ROAD EXTENSION

	<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> \$	<u>Cost</u> \$
1.	Clearing (30 Ft. Width)	2.4 Ac.	5,000/Ac.	12,000
2.	Construction Stakeout	LS	-----	5,000
3.	Erosion and Sedimentation Control			
	Silt Fence	3,400 LF	1.50/LF	5,100
	Rock Outlets	34 Ea.	50/Ea.	1,700
	Construction Entrances	2 Ea.	2,000/Ea.	4,000
	Temporary Seeding	LS	-----	3,500
4.	Manholes	12 Ea.	2,400	28,800
5.	8" SDR 35 PVC Sewer Pipe	3,400 LF	60/LF	204,000
6.	Pump Station	1 Ea.	3,500/Ea.	35,000
7.	Force Main - 4" SDR 21 PVC (3.5 Feet Deep)	1,800/LF	19/LF	34,200
8.	2A Modified Stone Backfill	775 CY	18/CY	13,950
9.	Trench Restoration - Branch Road			
	Neat Cut	36 LF	0.75/LF	30
	4" BCBC	500 SY	8/SY	4,000
	2" ID-2 Binder (Overlay)	3,500 SY	4/SY	14,000
	1" ID-2 Wearing	3,500 SY	3/SY	10,500
	Tack Coat	3,500 SY	0.60/SY	2,100
10.	Stream Crossing	1 Ea.	5,000/Ea.	5,000
11.	Traffic Control	LS	-----	5,000
12.	Right-of-Way Restoration	11,600 SY	0.50/SY	<u>5,800</u>
			Subtotal:	393,680
	Legal/Administration (2%):			7,870
	Engineering Inspection (10%):			39,370
	Contingency (10%):			39,370
	Right-of-way Acquisition	2.4 Ac.	5,000/Ac.	<u>12,000</u>
			Total:	\$492,290

Treatment Facility:

All three (3) options require construction of a new treatment facility. Due to existing/future wastewater disposal requirements and available land with perennial stream access, package treatment plant with stream discharge is proposed. The treatment facility would be located on approximately 2.5 acres of land located on Branch Road (TMP #12-013-006-001) owned by East Rockhill Township. Costs were based on preliminary treatment requirements obtained from PADEP via correspondence dated May 3, 1996. (Refer Appendix)

CHAPTER 7

**COST ESTIMATE
PACKAGE TREATMENT PLANT/STREAM DISCHARGE**

	<u>Item</u>	<u>Quantity</u>	<u>Unit</u> <u>\$</u>	<u>Cost</u> <u>\$</u>
1.	Package Treatment Plant W/Digester and Equalization Tank, Aeration, Digester, Clarifier, Chlorination, & De-chlorination	LS	-----	398,000
2.	Influent Pump Station	LS	-----	35,000
3.	Sand Filter Dosing Pump	LS	-----	40,000
4.	Sand Filters	25,200 SF	9.50/SF	239,400
5.	Control Building	LS	-----	6,000
6.	Misc. Equipment	LS	-----	6,000
7.	U.V. Disinfection Unit	LS	-----	16,000
8.	Fencing	750 LF	8.00/LF	6,000
9.	Electrical	LS	-----	15,000
10.	Erosion & Sediment Control	LS	-----	3,000
11.	Access Road	1,600 SY	8.00/SY	<u>12,800</u>
			Subtotal:	777,200
	Legal Administration (2%):			15,540
	Engineering/Inspection (10%):			77,720
	Contingency (10%):			77,720
	Land	\$11,000/Ac.	2.5 Ac.	<u>27,500</u>
			Total:	\$975,680

Table 7-9 summarizes construction costs for the three evaluated collection and conveyance options with treatment at a proposed package treatment facility. Construction costs for Option B-1 and B-3 per EDU of plant capacity are within ten (10) percent and range from \$3,808/EDU (Option B-3) to \$3,572/EDU (Option B-1). Construction cost estimated for Option B-2 is somewhat higher at \$4,285/EDU.

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**TABLE 7-9
DEVELOPMENT STUDY AREA
Sub-Area "B" Summary of Construction Costs**

<u>Collection and Conveyance Options</u>	
B-1 Gravity Sewers	\$589,320
B-2 Gravity Sewers - Branch Road Extension	\$785,500
B-3 Gravity Sewers w/4" Force Main Extension	\$492,290
 <u>Treatment</u>	
Package Treatment Plant	\$975,680
 <u>Service Area Requirements</u>	
Existing Connections ⁽¹⁾	44
Allocated Connections ⁽²⁾	106
Future Connections ⁽³⁾	<u>261</u>
	411 EDU's
 Design Wastewater Flow	 113,025 GPD
 <u>Construction Costs</u>	
Option B-1/Package Treatment Plant	\$3,808/EDU
Option B-2/Package Treatment Plant	\$4,285/EDU
Option B-3/Package Treatment Plant	\$3,364/EDU

Recommended Alternative:

- (1) Flow currently treated at PWTA
- (2) Includes Bridgeview & Fenley Phase I
- (3) Includes Fenley Phase II, Weidner Farms, & in-fills lots.

The recommended alternative for Development Study Sub-Area "B" is to provide public sewer service via collection and conveyance Option B-1 with treatment facility constructed on TMP #12-013-006-001. Although construction costs are less, collection and conveyance Option B-3 is not recommended due to required additional pumping station and associated operating and maintenance requirements and costs.

The project will be completely user-financed. It is anticipated that East Rockhill Township will borrow necessary funds to finance the project which will be repaid by system users.

DEVELOPMENT AREA SUB-AREA "C":

This study area is a sub-area of the development study area Sub-area "A" and is located in the southwest portion of the Township adjacent to West Rockhill Township, Sellersville Borough, and Perkasio Borough. This area was reviewed as a separate study area in response to the Bucks County Health Department notification of sewage system malfunctions to Christopher and Dawn Cook (TMP #12-18-12) on August 16, 1995, and Tim and Lois Auckland (TMP #12-18-12-1) on August 16, 1995. Additional review indicates that holding tanks exist on the Heston Swartley Service Station site (TMP #52-14-91) and Whitehorse Hotel (TMP #52-14-92) located within West Rockhill Township.

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To coordinate sewage facility planning for correction of malfunctioning systems and replacement of existing holding tanks within the area, East Rockhill Township contacted West Rockhill Township regarding possible participation to extend public sewer facilities into a small portion of West Rockhill Township immediately adjacent to East Rockhill Township in the Ridge Road/Old Bethlehem Pike area. Additionally, East Rockhill Township contacted Sellersville Borough and Perkasie Borough Authority regarding their possible cooperation in the project.

A total of eight (8) options were studied for extension of public sewer facilities to service the study area sub-area "C" designated in Figure 7-2. Alternatives included extension of public sewer facilities for connection to the Sellersville Borough sewer facilities, extension of sanitary sewer lines and connection to East Rockhill Township owned sewer lines, and extension of sewer lines to connect to Perkasie Borough Authority facilities. In all options, sewage treatment would be at the Pennridge Wastewater Treatment Authority treatment plant.

While the most economical and desirable method of providing public sewer facilities within this area is option C-4; East Rockhill Township was advised on March 20, 1996 via correspondence from Alan S. Frick, Borough Manager, that Sellersville Borough will not cooperate with an interconnection with East Rockhill Township. (Refer Appendix) The correspondence further indicates that East Rockhill Township is authorized to provide service to five (5) residential properties located within the Sellersville Borough service area within West Rockhill Township.

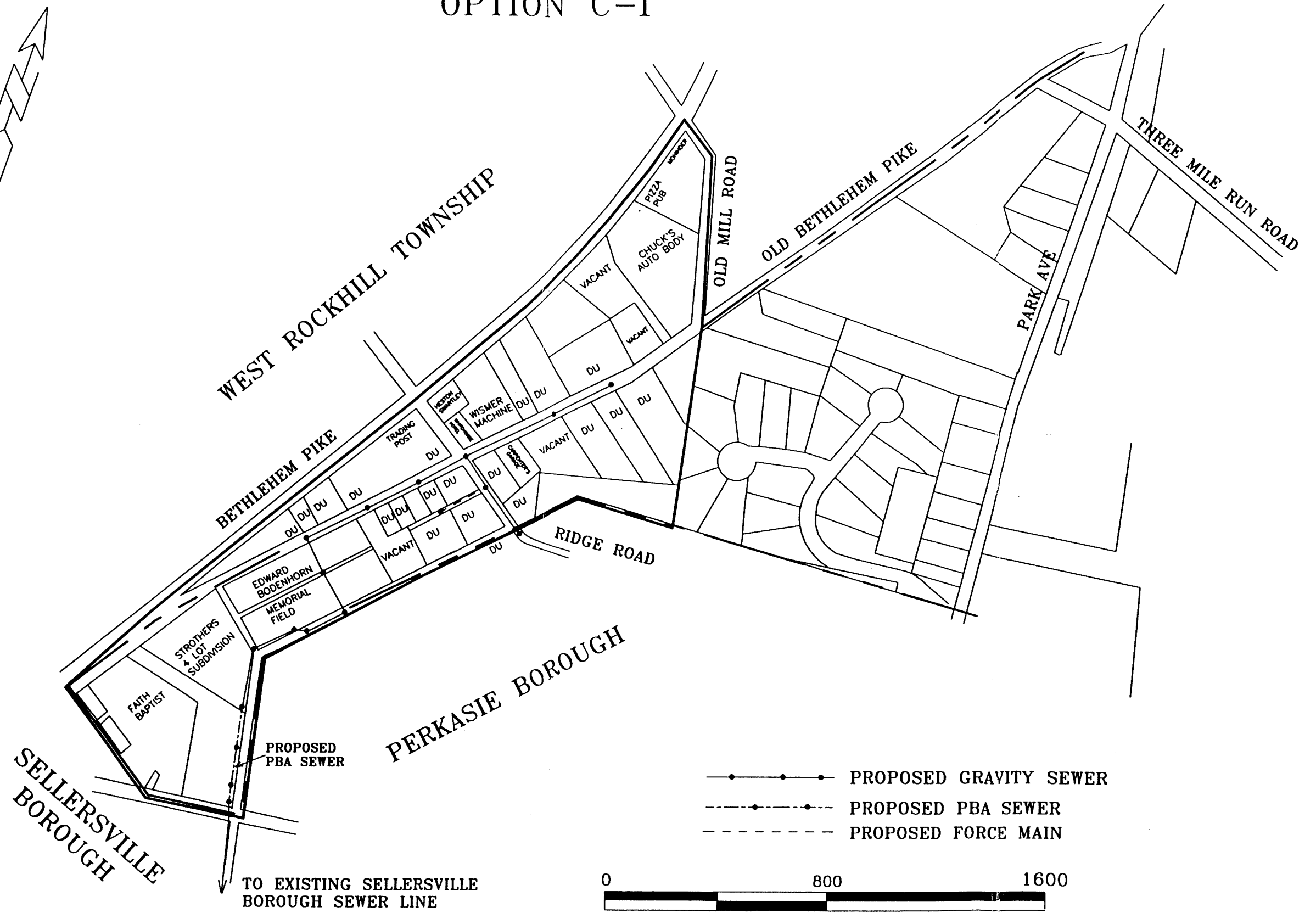
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COST ESTIMATE OPTION C-1, CONNECTION TO SELLERSVILLE BOROUGH

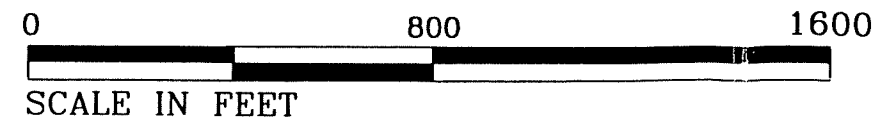
	<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> (<u>\$</u>)	<u>Cost</u> (<u>\$</u>)
1.	Clearing	0.50	5,000/Ac.	2,500
2.	Construction Stakeout	LS	-----	5,000
3.	Erosion and Sediment Control:			
	Silt Fence	300 LF	1.5/LF	450
	Construction Entrance	2 Ea.	2,000/Ea.	4,000
	Temporary Seeding	LS	-----	1,000
4.	8" SDR 35 PVC 0"-8" Depth	2,512 LF	60/LF	150,720
5.	Manholes	14 Ea.	2,400/Ea.	33,600
6.	Laterals	23 Ea.	500/Ea.	11,500
7.	2" PVC Force Main	200 LF	20/LF	4,000
8.	Pumping Pit	1 Ea.	5,000/Ea.	5,000
9.	Valve Pit	1 Ea.	1,000/Ea.	1,000
10.	2A Modified Stone Backfill	1,753 CY	12/CY	21,036
11.	Roadway Reconstruction:			
	Neat Cut	4,774 LF	0.75/LF	3,580
	4" BCBC	1,312 SY	6/SY	7,872
	2" ID-2 Binder	1,312 SY	4/SY	5,248
	1" ID-2 Wearing (Overlay)	4,380 SY	3/SY	13,140
	Tack Coat	4,380 SY	0.60/SY	2,628
12.	Traffic Control	LS	-----	2,000
13.	Lawn Restoration	2,300 SY	1.15	<u>2,645</u>
			Subtotal:	276,919
			Contingencies 10%:	27,692
			Non-Construction Costs 15%:	<u>41,538</u>
			Total:	346,149

DEVELOPMENT AREA - SUB AREA "C" OPTION C-1

FIGURE 7-10



- PROPOSED GRAVITY SEWER
- - -●- - - PROPOSED PBA SEWER
- - - - - PROPOSED FORCE MAIN



SELLERSVILLE
BOROUGH

TO EXISTING SELLERSVILLE
BOROUGH SEWER LINE

PERKASIE BOROUGH

WEST ROCKHILL TOWNSHIP

BETHLEHEM PIKE

OLD BETHLEHEM PIKE

OLD MILL ROAD

RIDGE ROAD

PARK AVE

THREE MILE RUN ROAD

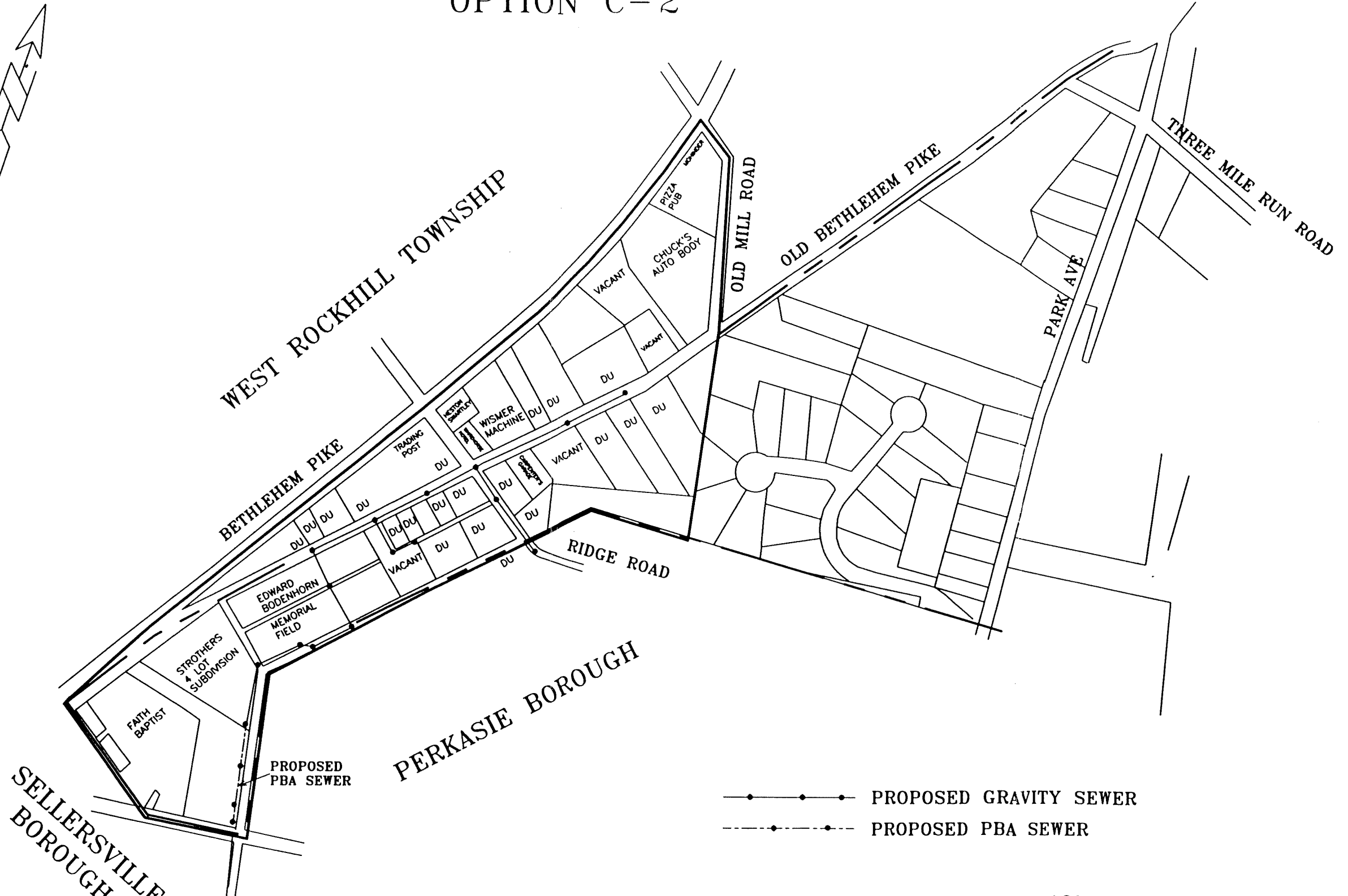
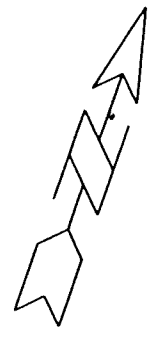
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**COST ESTIMATE
OPTION C-2, CONNECTION TO SELLERSVILLE BOROUGH**

	<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> <u>(\$)</u>	<u>Cost</u> <u>(\$)</u>
1.	Clearing	0.50	5,000/Ac.	2,500
2.	Construction Stakeout	LS	-----	5,000
3.	Erosion and Sediment Control:			
	Silt Fence	550 LF	1.5/LF	825
	Construction Entrance	2 Ea.	2,000/Ea.	4,000
	Temporary Seeding	LS	-----	1,000
4.	8" SDR 35 PVC 0"-8" Depth	2,730 LF	60/LF	163,800
5.	Manholes	16 Ea.	2,400/Ea.	38,400
6.	Laterals	23 Ea.	500/Ea.	11,500
7.	2A Modified Stone Backfill	1,753 CY	12/CY	21,036
8.	Roadway Reconstruction:			
	Neat Cut	4,774 LF	0.75/LF	3,580
	4" BCBC	1,312 SY	6/SY	7,872
	2" ID-2 Binder	1,312 SY	4/SY	5,248
	1" ID-2 Wearing (Overlay)	4,380 SY	3/SY	13,140
	Tack Coat	4,380 SY	0.60/SY	2,628
12.	Traffic Control	LS	-----	2,000
13.	Lawn Restoration	2,300 SY	1.15	<u>2,645</u>
			Subtotal:	285,174
			Contingencies 10%:	28,517
			Non-Construction Costs 15%:	<u>42,776</u>
			Total:	356,467

DEVELOPMENT AREA - SUB AREA "C" OPTION C-2

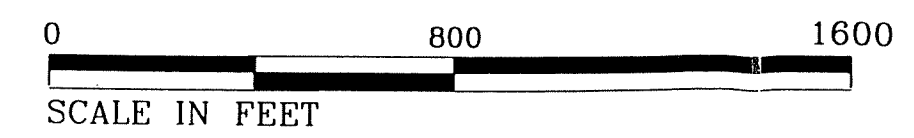
FIGURE 7-11



SELLERSVILLE
BOROUGH

PERKASIE BOROUGH

—●—●—●— PROPOSED GRAVITY SEWER
- - -●- - -●- - - PROPOSED PBA SEWER



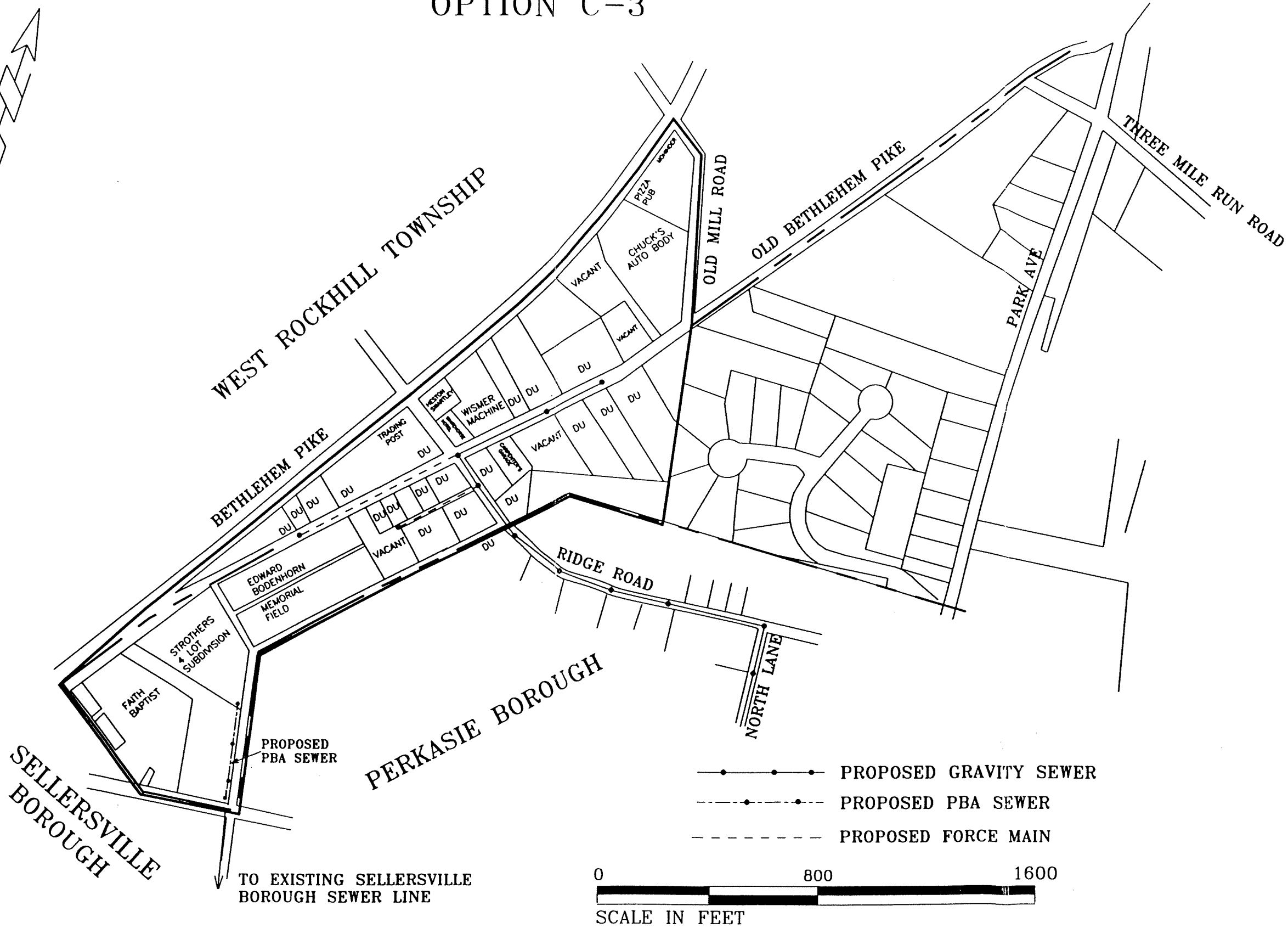
TO EXISTING SELLERSVILLE
BOROUGH SEWER LINE

CHAPTER 7

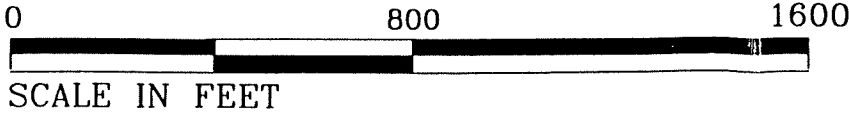
COST ESTIMATE OPTION C-3, CONNECTION TO PERKASIE BOROUGH AUTHORITY

<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> (<u>\$</u>)	<u>Cost</u> (<u>\$</u>)
1. Construction Stakeout	LS	-----	5,000
2. Erosion and Sediment Control:			
Silt Fence	100 LF	1.5/LF	150
Temporary Seeding	LS	-----	1,000
3. 8" SDR 35 PVC 0"-8" Depth	1,210 LF	60/LF	72,600
4. 8" SDR 26 PVC 8'-10' Depth	780 LF	110/LF	85,800
5. 8" SDR 26 PVC >10' Depth	440 LF	135/LF	59,400
6. Manholes	11 Ea.	2,400/Ea.	26,400
7. Laterals	23 Ea.	500/Ea.	11,500
8. 2" PVC Force Main	940 LF	20/LF	18,800
9. Pumping Pit	2 Ea.	5,000	10,000
10. Valve Pit	2 Ea.	1,000	2,000
11. 2A Modified Stone Backfill	3,250 CY	12/CY	39,000
12. Roadway Reconstruction:			
Neat Cut	4,860 LF	0.75/LF	3,645
4" BCBC	1,350 SY	6/SY	8,100
2" ID-2 Binder	1,350 SY	4/SY	5,400
1" ID-2 Wearing (Overlay)	4,860 SY	3/SY	14,580
Tack Coat	4,860 SY	0.60/SY	2,916
13. Traffic Control	LS	-----	2,000
14. Lawn Restoration	2,300 SY	1.15	<u>2,645</u>
		Subtotal:	370,936
		Contingencies 10%:	37,094
		Non-Construction Costs 15%:	<u>55,640</u>
		Total:	<u>463,670</u>

DEVELOPMENT AREA - SUB AREA "C" OPTION C-3



- PROPOSED GRAVITY SEWER
- - -●- - - PROPOSED PBA SEWER
- - - - - PROPOSED FORCE MAIN



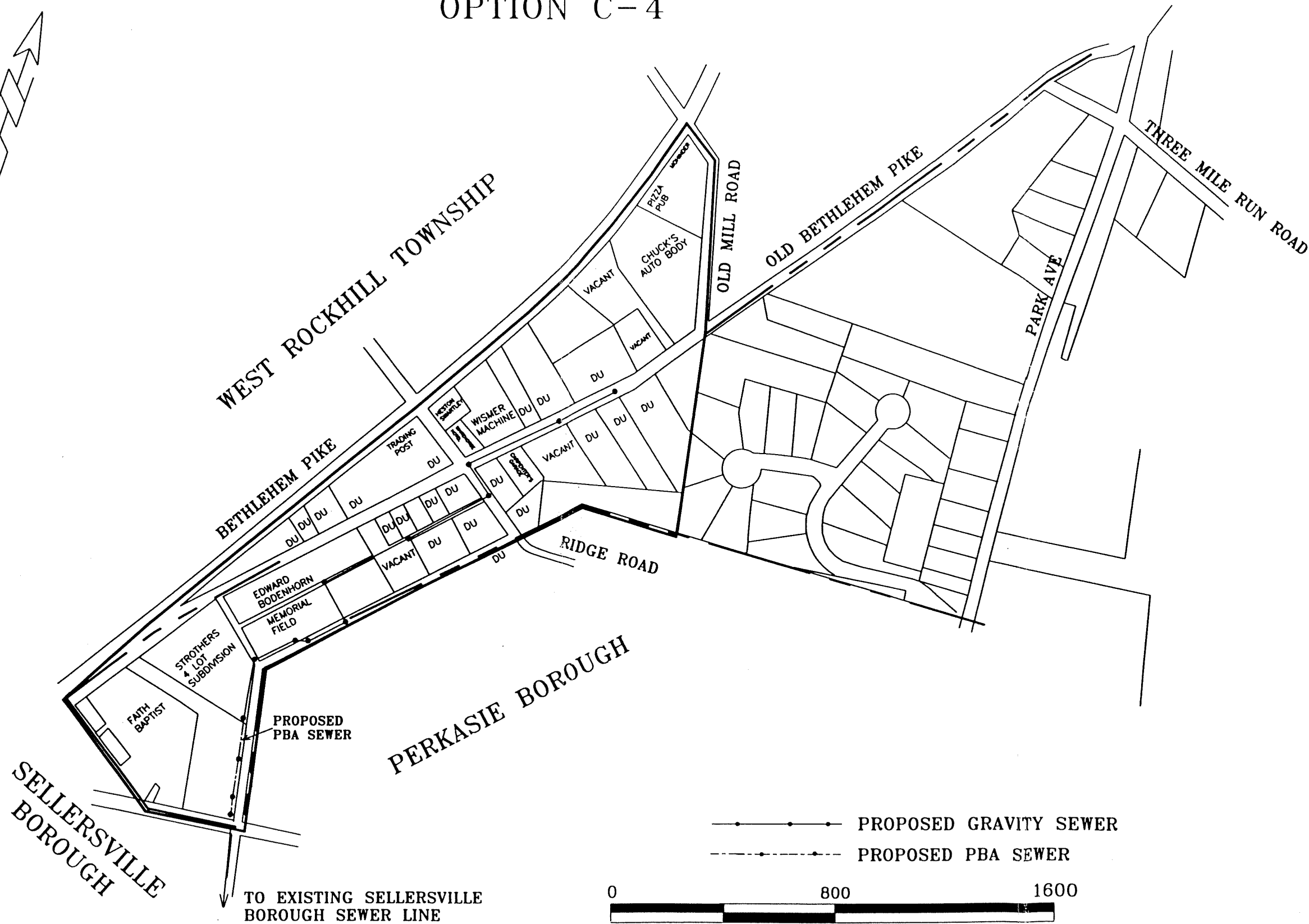
CHAPTER 7

COST ESTIMATE OPTION C-4, CONNECTION TO SELLERSVILLE BOROUGH

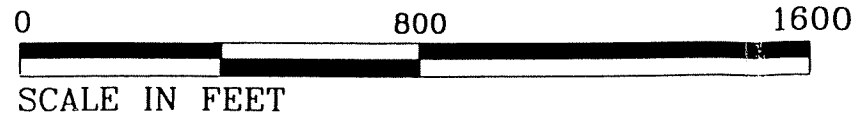
<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> <u>(\$)</u>	<u>Cost</u> <u>(\$)</u>
1. Clearing	LS	-----	1,000
2. Connect to Existing Manhole	1 Ea.	500/Ea.	500
3. 8" PVC (Stone Backfill)	1,520 LF	62/LF	94,240
4. 8" PVC (Earth Backfill)	410 LF	51/Ea.	20,910
5. 6" PVC Laterals (To Row)	21 Ea.	750/Ea.	15,750
6. 4' Dia. Manholes	10 Ea.	1,500/Ea.	15,000
7. Old Bethlehem Pike Overlay (18' Wide)	1,200 SY	4.35/SY	5,220
8. Ridge Road Restoration (PennDOT)	9 SY	55/SY	495
9. Alley/Parking Area Restoration (Stone)	1,000 SY	3/SY	3,000
10. Driveway Restoration (Paving)	270 SY	4/SY	1,080
11. Lawn Restoration	800 SY	1.15/SY	920
12. Traffic Control	LS	-----	2,750
13. Erosion and Sedimentation Control	LS	-----	1,500
14. Testing	LS	-----	<u>750</u>
		Subtotal:	163,115
		Contingencies 10%:	16,312
		Non-Construction Costs 15%:	<u>24,467</u>
		Total:	203,894

DEVELOPMENT AREA - SUB AREA "C" OPTION C-4

FIGURE 7-13



—●—●—●— PROPOSED GRAVITY SEWER
- - -●- - - PROPOSED PBA SEWER



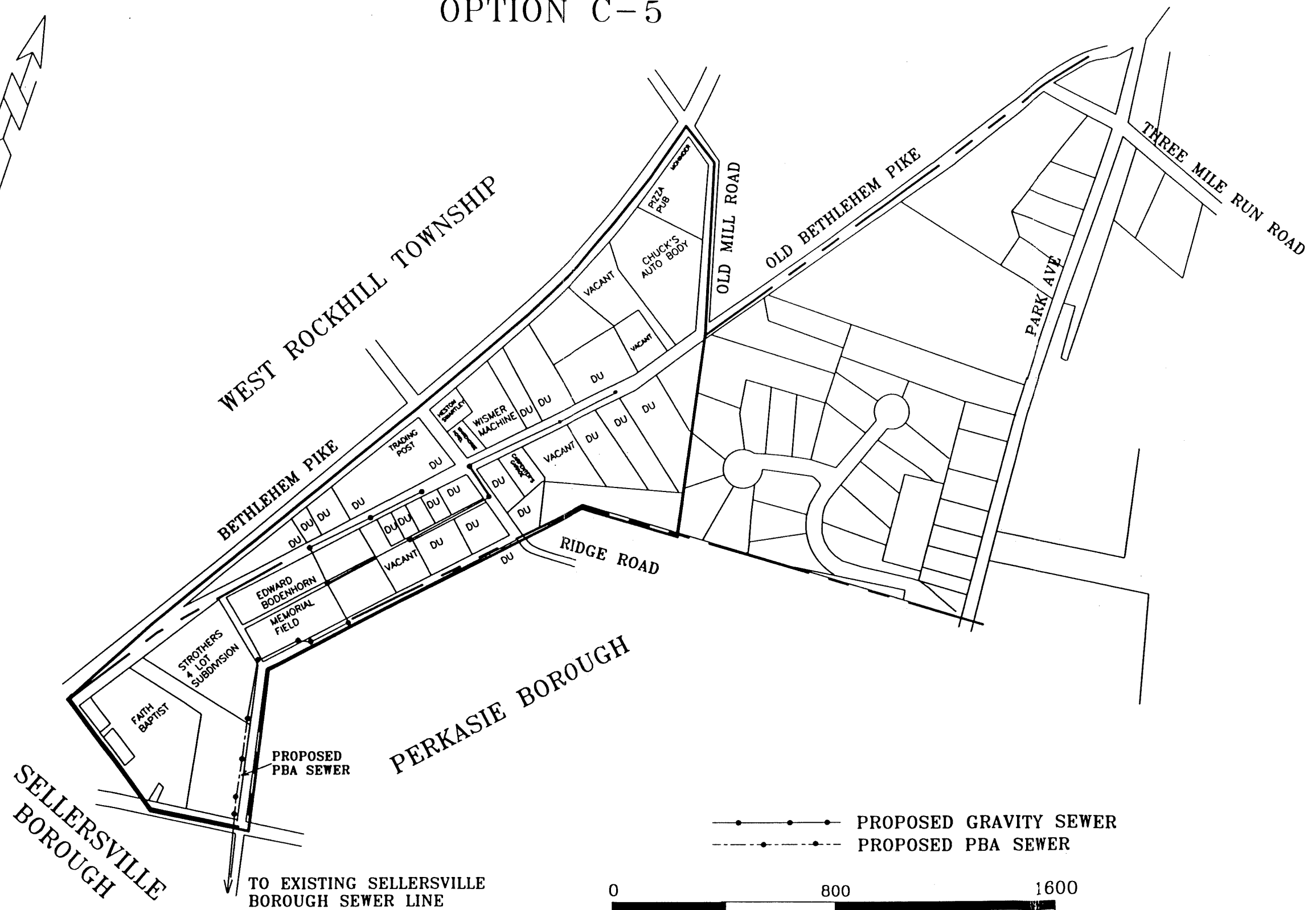
CHAPTER 7

COST ESTIMATE OPTION C-5, CONNECTION TO SELLERSVILLE BOROUGH

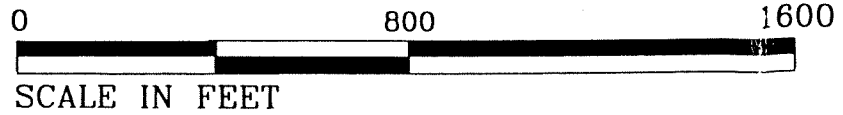
<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> <u>(\$)</u>	<u>Cost</u> <u>(\$)</u>
1. Clearing	LS	-----	1,000
2. Connect to Existing Manhole	1 Ea.	500/Ea.	500
3. 8" PVC (Stone Backfill)	2,110 LF	62/LF	130,820
4. 8" PVC (Earth Backfill)	410 LF	51/LF	20,910
5. 6" PVC Laterals (To Row)	26 Ea.	750/Ea	19,500
6. 4' Dia. Manholes	13 Ea.	1,500/Ea.	19,500
7. Old Bethlehem Pike Overlay (18' Wide)	24,400 SY	4.35/SY	10,614
8. Ridge Road Restoration (PennDOT)	9 SY	55/SY	495
9. Alley/Parking Area Restoration (Stone)	1,270 SY	3/SY	3,810
10. Driveway Restoration (Paving)	270 SY	4/SY	1,080
11. Lawn Restoration	800 SY	1.15/SY	920
12. Traffic Control	LS	-----	3,500
13. Erosion and Sedimentation Control	LS	-----	1,500
14. Testing	LS	-----	<u>750</u>
		Subtotal:	214,899
		Contingencies 10%:	21,490
		Non-Construction Costs 15%:	<u>35,458</u>
		Total:	271,847

DEVELOPMENT AREA - SUB AREA "C" OPTION C-5

FIGURE 7-14



PROPOSED GRAVITY SEWER
 PROPOSED PBA SEWER



SCALE IN FEET

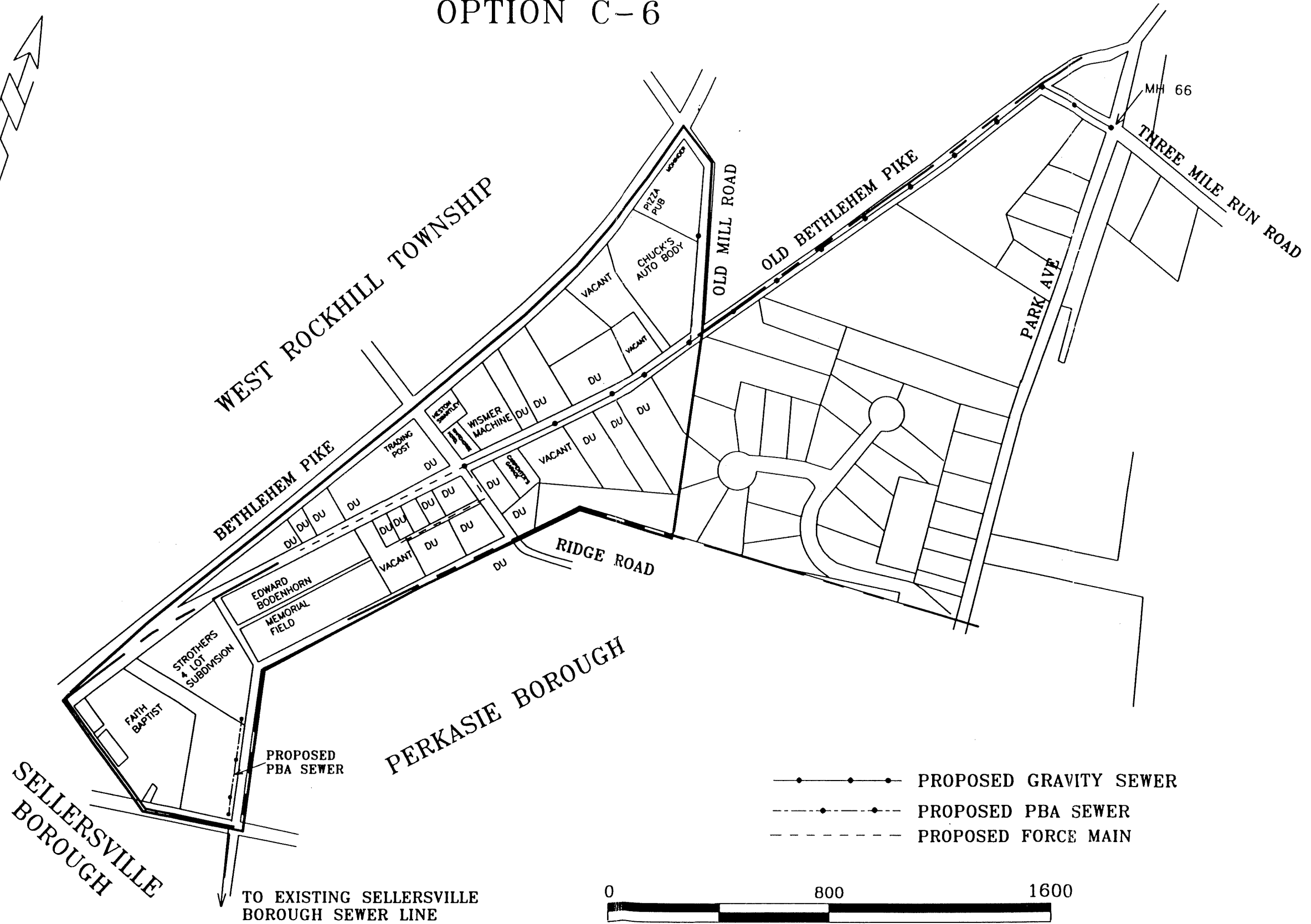
CHAPTER 7

**COST ESTIMATE
OPTION C-6, CONNECTION TO EAST ROCKHILL TOWNSHIP**

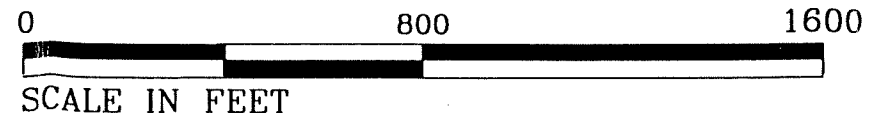
<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> <u>(\$)</u>	<u>Cost</u> <u>(\$)</u>
1. Clearing	LS	-----	1,000
2. 8" PVC 0' - 8' Depth	2,920 LF	62/LF	181,040
3. 6" PVC Laterals (To Row)	38 Ea.	750/Ea.	28,500
4. 4' Dia. Manholes 0' - 8' Depth	15 Ea.	1,500/Ea.	22,500
5. Connect to Existing Manhole	1LS	-----	500
6. 2" PVC Force Main	1,160 LF	20/LF	23,200
7. Pumping Pit	2 Ea.	5,000/Ea.	10,000
8. Valve Pit	2 Ea.	1,000/Ea.	2,000
9. Old Bethlehem Pike Overlay (18' Wide)	7,120 SY	4.35/SY	30,972
10. Ridge Road Restoration	80 SY	55/SY	4,400
11. Lawn Restoration	1,500 SY	1.15/SY	1,725
12. Alley Restoration	400 SY	1.15/SY	460
13. Driveway Restoration (Paving)	600 SY	4.00/SY	2,400
14. Traffic Control	1 LS	-----	10,000
15. Erosion & Sedimentation Control	1 LS	-----	1,500
16. Testing	1 LS	-----	750
		Subtotal:	320,947
		Contingencies 10%:	32,095
		Non-Construction Costs 15%:	<u>48,142</u>
		Total:	401,184

DEVELOPMENT AREA - SUB AREA "C" OPTION C-6

FIGURE 7-15



- PROPOSED GRAVITY SEWER
- - -•- - - PROPOSED PBA SEWER
- - - - - PROPOSED FORCE MAIN



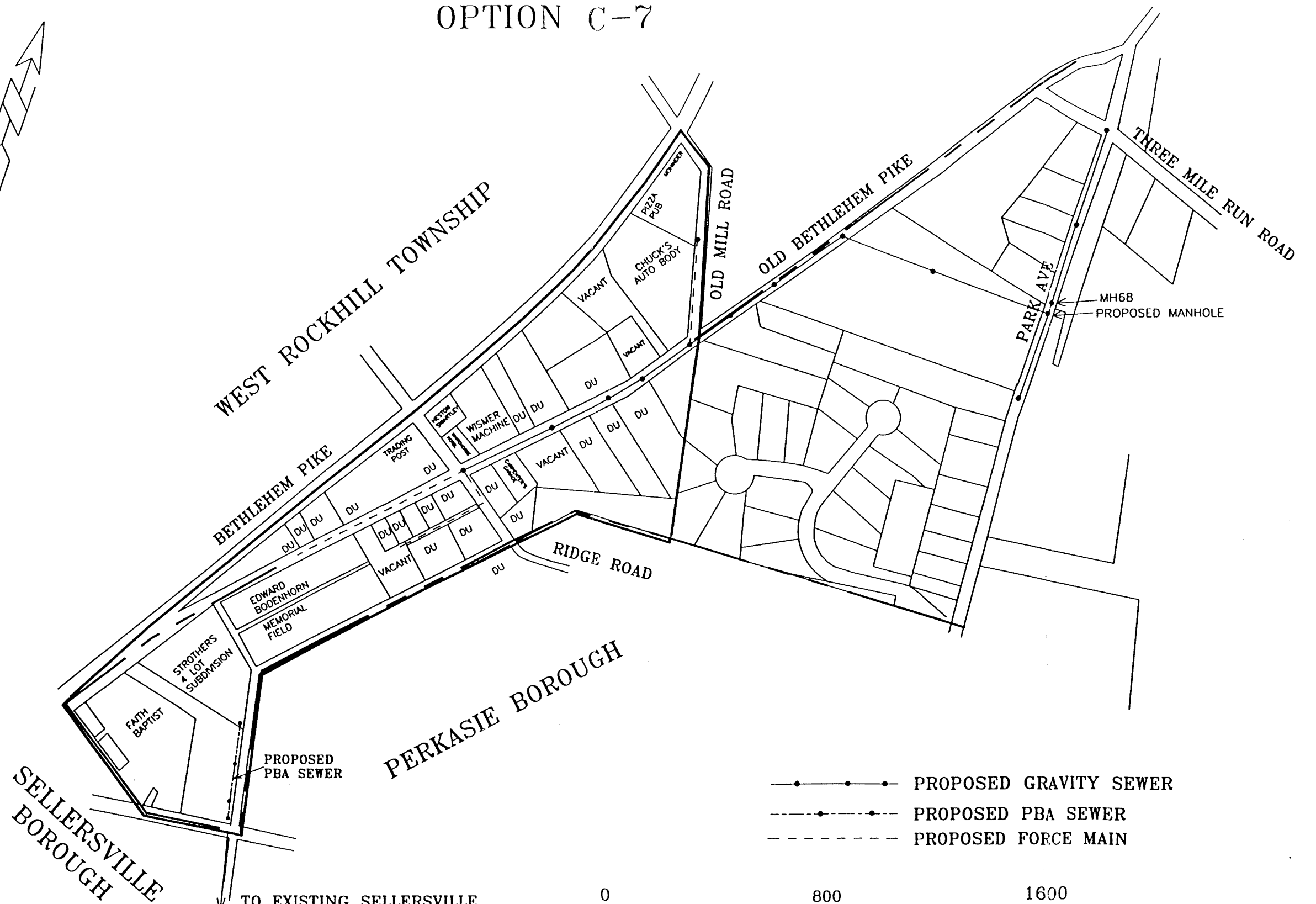
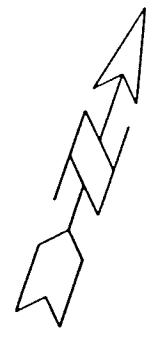
CHAPTER 7

COST ESTIMATE

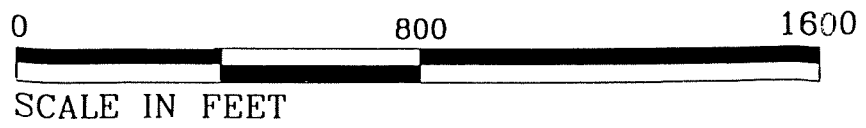
OPTION C-7, CONNECTION TO EAST ROCKHILL TOWNSHIP

<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> (<u>\$</u>)	<u>Cost</u> (<u>\$</u>)
1. 8" PVC 0' - 8' Depth	2,365 LF	62/LF	146,630
2. 6" PVC Laterals (To Row)	32 Ea.	750/Ea.	24,000
3. 4' Dia. Manholes 0' - 8' Depth	8 Ea.	1,500/Ea.	12,000
4. Doghouse Manhole	1LS	-----	2,500
5. 2" PVC Force Main	1,160 LF	20/LF	23,200
6. Pumping Pit	2 Ea.	5,000/Ea.	10,000
7. Valve Pit	2 Ea.	1,000/Ea.	2,000
8. Old Bethlehem Pike Overlay (18' Wide)	3,200 SY	4.35/SY	13,920
9. Ridge Road Restoration	80 SY	55/SY	4,400
10. Mill Road Restoration	1 LS	-----	1,000
11. Lawn Restoration	1,500 SY	1.15/SY	1,725
12. PP&L Easement Restoration	2,550 SY	1.15/SY	2,933
13. Alley Restoration	400 SY	1.15/SY	460
14. Driveway Restoration (Paving)	600 SY	4.00/SY	2,400
15. Traffic Control	1 LS	-----	10,000
16. Erosion & Sedimentation Control	1 LS	-----	3,750
17. Testing	1 LS	-----	1,500
		Subtotal:	262,418
		Contingencies 10%:	26,242
		Non-Construction Costs 15%:	<u>39,363</u>
		Total:	328,023

DEVELOPMENT AREA - SUB AREA "C" OPTION C-7



- PROPOSED GRAVITY SEWER
- -•- - - PROPOSED PBA SEWER
- - - - PROPOSED FORCE MAIN



SELLERSVILLE
BOROUGH

PERKASIO BOROUGH

WEST ROCKHILL TOWNSHIP

BETHLEHEM PIKE

RIDGE ROAD

OLD MILL ROAD

OLD BETHLEHEM PIKE

PARK AVE

THREE MILE RUN ROAD

TO EXISTING SELLERSVILLE
BOROUGH SEWER LINE

MH68
PROPOSED MANHOLE

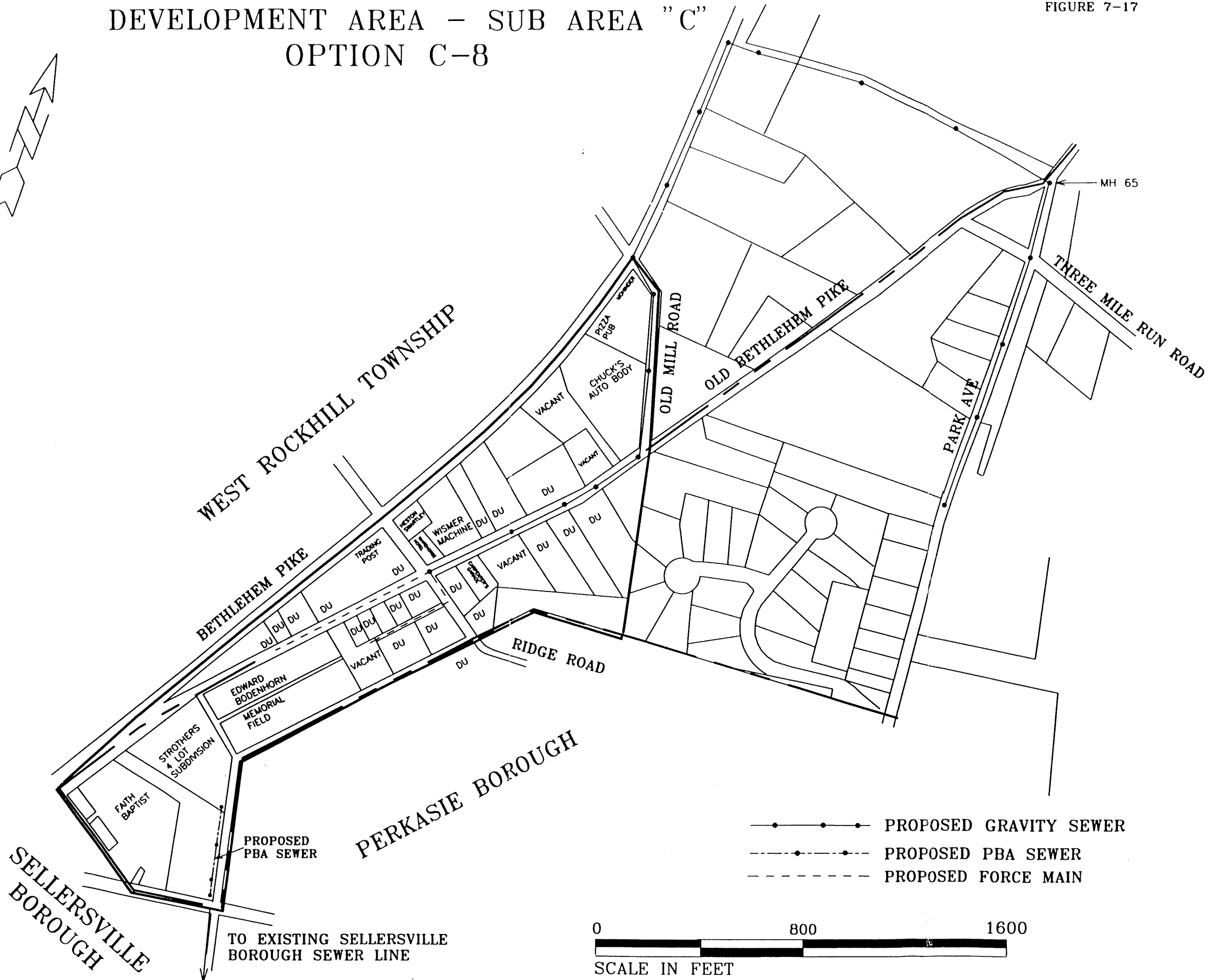
CHAPTER 7

COST ESTIMATE OPTION C-8, CONNECTION TO EAST ROCKHILL TOWNSHIP

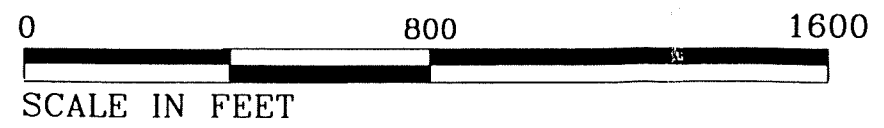
<u>Item</u>	<u>Quantity</u>	<u>Unit Cost</u> (S)	<u>Cost</u> (S)
1. Clearing	LS	-----	6,000
2. 8" PVC 0' - 8' Depth	4,020 LF	62/LF	249,240
3. 6" PVC Laterals (To Row)	31 Ea.	750/Ea.	23,250
4. 4' Dia. Manholes 0' - 8' Depth	14 Ea.	1,500/Ea.	21,000
5. Connect to Existing Manhole	1LS	-----	780
6. 2" PVC Force Main	1,160 LF	20/LF	23,200
7. Pumping Pit	2 Ea.	5,000/Ea.	10,000
8. Valve Pit	2 Ea.	1,000/Ea.	2,000
9. Bethlehem Pike R.O.W. Restoration	1,100 SY	3/SY	3,300
10. Old Mill Road Overlay	1,350 SY	4.35/SY	5,872
11. Old Bethlehem Pike Overlay	1,840 SY	4.35/SY	8,004
12. Ridge Road Restoration	80 SY	55/SY	4,400
13. Lawn Restoration	1,500 SY	1.15/SY	1,725
14. Floodplain Restoration	4,700 SY	1.25/SY	5,875
15. Alley Restoration	400 SY	1.15/SY	460
16. Driveway Restoration (Paving)	600 SY	4.00/SY	2,400
17. Traffic Control	1 LS	-----	10,000
18. Erosion & Sedimentation Control	1 LS	-----	6,000
19. Testing	1 LS	-----	2,500
		Subtotal:	386,006
		Contingencies 10%:	38,601
		Non-Construction Costs 15%:	<u>57,901</u>
		Total:	482,508

DEVELOPMENT AREA - SUB AREA "C" OPTION C-8

FIGURE 7-17



- PROPOSED GRAVITY SEWER
- - -●- - - PROPOSED PBA SEWER
- - - - - PROPOSED FORCE MAIN



SELLERSVILLE
BOROUGH

TO EXISTING SELLERSVILLE
BOROUGH SEWER LINE

WEST ROCKHILL TOWNSHIP

PERKASIE BOROUGH

BETHLEHEM PIKE

OLD MILL ROAD

OLD BETHLEHEM PIKE

RIDGE ROAD

PARK AVE

THREE MILE RUN ROAD

MH 65

EDWARD BODENHORN
MEMORIAL
FIELD

STROTHERS
LOT
SUBDIVISION

FAITH
BAPTIST

PROPOSED
PBA SEWER

TRADING
POST

WISMER
MACHINE

CHUCKY'S
AUTO BODY

PIZZA
PUB

MOTOR
GARAGE

VACANT

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CHAPTER 7

TABLE 7-18
DEVELOPMENT STUDY AREA
Sub-Area "C" Summary of Construction Costs

Collection and Conveyance Options

C-1	Connection to Sellersville Borough	\$346,149
C-2	Connection to Sellersville Borough	356,467
C-3	Connection to Perkasio Borough Authority	465,670
C-4	Connection to Sellersville Borough	203,894
C-5	Connection to Sellersville Borough	271,847
C-6	Connection to East Rockhill Township	401,184
C-7	Connection to East Rockhill Township	328,023
C-8	Connection to East Rockhill Township	482,508

Treatment

PWTA/Capacity Costs \$3,743/EDU
(based on East Rockhill Township Sewer Service
Fee Study adopted on June 18, 1996)

<u>Option</u>	<u>EDU's Served</u>	<u>Cost per EDU</u>
C-1	27	\$16,563
C-2	27	16,945
C-3	31	18,825
C-4	23	12,608
C-5	28	13,452
C-6	33	15,900
C-7	33	13,683
C-8	33	18,364

Recommended Alternative:

This plan recommends implementation of Option C-7 for Development Study Area Sub-Area "C". Implementation will proceed as a "site specific" project to "fast track" the sanitary sewage collection system to abate public health hazards of failing on-site sewage disposal systems.

CHAPTER 7

SCHWENK MILL ROAD STUDY AREA:

Introduction

The 1970 Wastewater Facilities Plan proposed that this area would be served by public sewers by 1980. The East Rockhill Township Comprehensive Plan (1987) shows this area in the Residential-Agricultural Zoning District, an area intended for lower intensity development that does not require service by public facilities such as public sewers. The 1987 Wastewater Facilities Plan proposed OLDS Management as the short term alternative for this area. The selected long term alternative proposed was connection to public sewer via the Deibler Elementary School system, assuming capital costs could be reduced to affordable levels.

The following wastewater facilities alternatives were analyzed for the Schwenk Mill Road area:

1. "No-action" Alternative.
2. Public Education and Technical Assistance.
3. On-site System Rehabilitation.
4. On-lot Disposal System (OLDS) Management.
5. Connection to Existing Sewer.
6. Connection to Deibler Elementary School System.
7. Community Land Application Disposal System.
8. Pump and Haul.

Alternatives for Schwenk Mill Road

Alternative #1 - "No Action" Alternative

Description: A "no action" plan for the Schwenk Mill Road area would provide no change in the current situation. This type of "status quo" approach would mean no new wastewater facilities, and the homeowner would continue to be responsible for his own on-site system. Therefore, the existing on-lot malfunctions (estimated as 11 dwelling units) would probably continue unabated and additional on-lot systems may malfunction in the future due to the present soil conditions.

Impacts:

1. Possible health hazards.
2. Possible surface water contamination.
3. Possible groundwater contamination.
4. Continued nuisance problems.
5. Continued violation of Clean Streams Law.
6. No change in administrative functions.
7. Status quo alternative.
8. Property values could be suppressed.

Alternative #2 - Public Education and Technical Assistance Program

Description: On-lot sewage disposal systems have a finite life expectancy and require basic maintenance practices which can extend the life of the system. Most homeowners are not aware of the maintenance needs of their on-lot septic systems. When faced with problems of a malfunctioning septic system, for example - surfacing septic effluent, the homeowner usually

CHAPTER 7

just "lives with it". One way that municipal officials may help prevent further problems with on-site systems would be to administer a public education program.

With this type of program, the responsibility for operation and maintenance of an on-lot system remains with the homeowner. Their attention is drawn to the need for maintenance, repair, or rehabilitation, and water conservation through dissemination of written materials. This should be followed by an "active" program such as the public presentation of various options available to the homeowner.

Obtaining technical assistance for the repair or replacement of on-lot septic systems would also be the homeowner's responsibility. Options available include local plumbers, septage haulers, contractors, and engineers, depending upon the severity of the problem. The representative sewage enforcement officer (SEO) from the Bucks County Department of Health is a good contact for technical advice.

Impacts: The following impacts are associated with this alternative:

1. System ownership and maintenance responsibility remains with the homeowner.
2. Township involvement is minimal. (Corresponds to Option #4 in Table 6-3.)
3. Most existing malfunctions will probably continue.
4. Severity of problems may decrease with use of water conservation devices and techniques.
5. Future system malfunctions may be averted because of increased homeowner awareness.
6. Low cost or no cost to Township; low cost to residents.

Alternative #3 - On-site System Rehabilitation

Description: On-lot sewage disposal problems can originate from the natural aging of individual components, improper installation and/or maintenance, adverse site conditions, or a combination of these. It appears that the predominant reason for malfunctions in the Schwenk Mill Road area is the poorly drained to somewhat poorly drained soils (Abbottstown, Doylestown, and Reaville soils) with seasonal high water tables and shallow depth to bedrock. However, only a detailed investigation of each parcel can determine the site specific cause of malfunctions.

Possible corrective measures to remedy on-site malfunctions are as diverse as the reasons why they malfunction. The on-site rehabilitation alternatives determined to be possibly feasible for use in the Schwenk Mill Road area (1987 Wastewater Facilities Plan) are non-structural (no construction activity on the system components) waste flow reduction and rehabilitation, and rehabilitation of septic tank and/or soil absorption system. The adverse soil conditions in the Schwenk Mill Road area, however, may preclude the use or effectiveness of these alternatives in solving the on-site system malfunctions. In addition, solving the existing malfunctions in the State Road area, may not preclude the possibility of other systems malfunctioning due to adverse site conditions.

Impacts:

1. System ownership and maintenance responsibility remains with the homeowner.
2. Township involvement is minimal.
3. Solutions to on-site failures (with exception of holding tanks) may not be feasible.
4. Severity of problems may be decreased.
5. Solutions may involve high costs to homeowners.

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Alternative #4 - On-Lot Disposal System (OLDS) Management Program

Description: On-lot disposal system (OLDS) can provide reliable service at a reasonable cost while preserving environmental quality. The failure of on-lot systems, however, can create both public health hazards and water quality problems or, at the very least, a public nuisance. If OLDS are to perform successfully over a reasonable lifetime, a sound on-lot management program with sufficient provision for technical assistance, education, and enforcement should be provided. An effective management program functions to assure proper design, construction, operation and maintenance of these systems.

Impacts: The following impacts are associated with this alternative:

1. The number and severity of pollution and potential health problems would decrease through continued system maintenance and rehabilitation.
2. Township involvement could vary.
3. Varying degrees of administrative, financial, and legal complexity could be encountered.
4. Groundwater recharge would continue.

Alternative #5 - Connection to Existing Sewers

Description: The 1970 Wastewater Facilities Plan proposed that the Schwenk Mill Road area would be served by a pump station and collector sewer connected into an extended Branch Creek interceptor by 1980. Since the 1970 plan was prepared, none of the proposed facilities have been planned for, or completed. However, there is an existing gravity sewer line located along Ridge Road, approximately 800 feet east of Schoolhouse Road. Accordingly, the alternatives presented below involve utilizing a community collection system with connection to the existing sewer line in Ridge Road.

The following structural sewage facilities for collecting and transporting wastewater from the Schwenk Mill Road area to the existing gravity sewer along Ridge Road have been analyzed:

1. Conventional (8") gravity sewers with lift station.
2. Small diameter (4") gravity sewers with lift station.
3. Low pressure sewer system (2" PVC) with septic tank effluent pump or grinder pumps.

Costs: The following cost estimates for the above-mentioned alternatives are for comparison purposes. To obtain a more accurate estimate of costs, a detailed feasibility study would be required.

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COST ESTIMATE OPTION S-1 - GRAVITY SEWERS (8 INCHES)

Approximately 2,800 feet of 8" pipe would be required as well as 6,600 feet of 4" force main and a lift station to serve 28 homes. (Refer Figure 7-10)

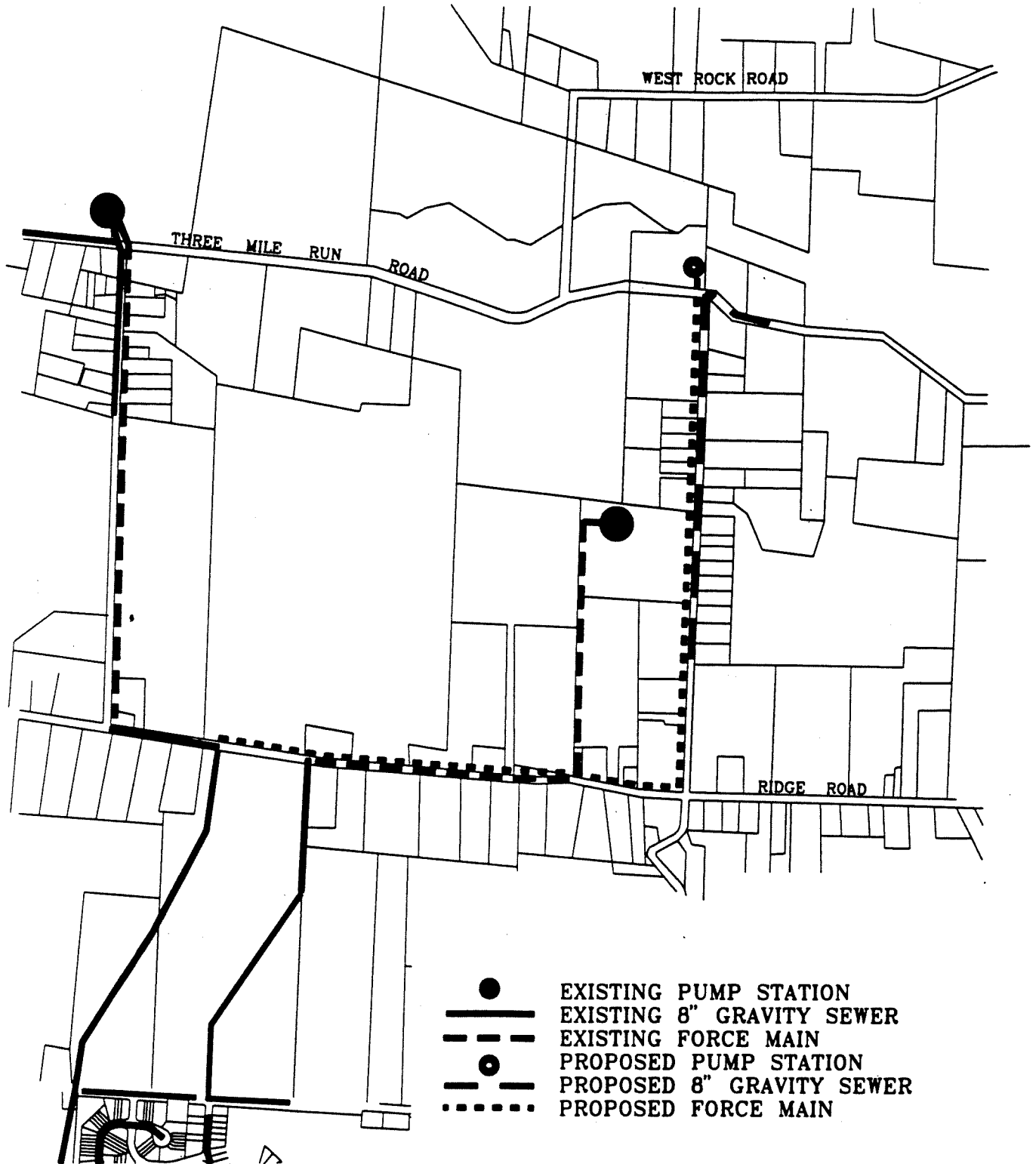
2,800 ft. 8" sanitary sewer w/MH's	@ \$70/Ft.	= \$196,000
6,600 ft. 4" force main	@ \$19/Ft.	= \$125,400
Lift Station*		= \$ 45,000
28 laterals and house connections		
X 150ft/DU x \$30/Ft.		= <u>\$126,000</u>
	TOTAL	= \$492,400

Capital Cost per DU (straight cost)
\$527,200/28 DU = \$17,586/DU

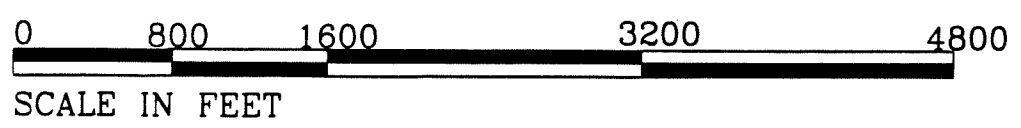
- * If gravity sewers cannot facilitate Tax Parcel #12-9-197-109, additional construction costs to these parcels for grinder pump systems would be \$2,500 each.

SCHWENK MILL ROAD ALTERNATIVE #5

CONNECTION TO EXISTING SEWER
OPTION S-1 - GRAVITY SEWER



- EXISTING PUMP STATION
- EXISTING 8" GRAVITY SEWER
- - - EXISTING FORCE MAIN
- PROPOSED PUMP STATION
- PROPOSED 8" GRAVITY SEWER
- PROPOSED FORCE MAIN



CHAPTER 7

COST ESTIMATE OPTION S-2 - SMALL DIAMETER (4") GRAVITY SEWERS

Approximately 2,800 ft. of 4" septic tank effluent pump would be needed as well as 6,600 feet of 2" force main and a lift station. (Refer Figure 7-11)

2,800 ft. 4" PVC pipe	@ \$28/Ft.	\$ 78,400
6,600 ft. 2" force main	@ \$12/Ft.	\$ 79,200
Lift Station* =		\$ 45,000
28 laterals and house connections		
X 150ft/DU x \$30/Ft.		<u>\$126,000</u>
	TOTAL	<u>\$328,600</u>

Pump and inspect all septic tanks		
28 DU	@ \$200/DU	<u>\$5,600</u>
	TOTAL	<u>\$334,200</u>

or

Replace all 28 septic tanks	@ \$1800/ea	<u>\$ 50,400</u>
	TOTAL	<u>\$384,600</u>

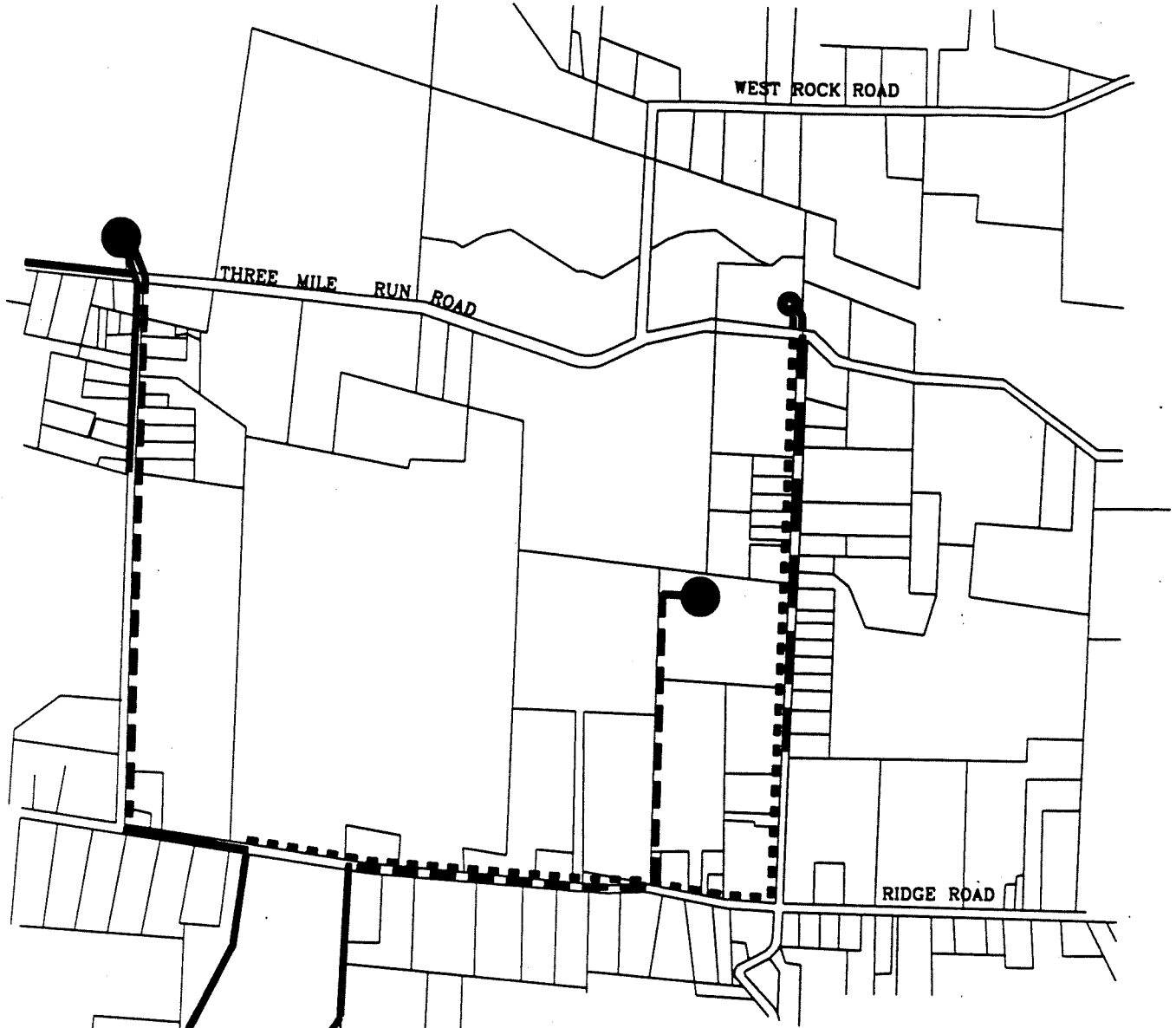
Capital Cost per DU (straight cost)		
\$328,600 to \$384,600		\$ 11,736 to \$ 13,736/DU

* If gravity sewers cannot facilitate Tax Parcel #12-9-197-4 and #12-9-197-10, additional construction costs to these parcels to STEP systems would be \$1,700 .

SCHWENK MILL ROAD ALTERNATIVE #5

FIGURE 7-20

CONNECTION TO EXISTING SEWER
OPTION S-2 - SMALL DIAMETER GRAVITY SEWER



- EXISTING PUMP STATION
- EXISTING 8" GRAVITY SEWER
- - - EXISTING FORCE MAIN
- PROPOSED PUMP STATION
- - - PROPOSED 4" GRAVITY SEWER
- PROPOSED 2" FORCE MAIN



SCALE IN FEET

CHAPTER 7

COST ESTIMATE OPTION S-3 - PRESSURE SEWER SYSTEM

Approximately 7,400 ft. of 2" PVC pressure sewer line would be needed to serve 44 homes (includes existing dwellings located along Ridge Road west of Schwenk Mill Road). Each home would have either a septic tank effluent pump or a grinder pump.

7,400 ft. 2" PVC pressure main	@ \$30/Ft	= \$222,000
44 pressure lines from STEP to pressure main (1-1/4 PVC)	@ \$12/Ft. X 200 ft./DU	= \$105,600
44 STEP's and pump chambers	@ \$2,800/DU	= <u>\$123,200</u>
	TOTAL	= \$450,800

or

Replace all 44 septic tanks	@ \$1,800/each	= \$ 79,200
	TOTAL	= <u>\$530,000</u>

or

Collection System from above Grinder Pumps (instead of STEP's) 44 DU	@ \$3,000	= \$132,000
	TOTAL	= <u>\$459,600</u>

Capital Cost per DU (straight cost) \$450,800 to \$459,600		= \$ 10,245 to \$ 10,445/DU
---	--	--------------------------------

Alternative #6 - Connection to Deibler Elementary School Pump Station

Description: The Deibler Elementary School is located on the western side of Schwenk Mill Road midway between Ridge Road and Three Mile Run Road. The school is currently served by a pump station and force main which discharges to a gravity sewer in Ridge Road. This gravity line ultimately traverses the Pennridge School District property near the Pennridge High School on Fifth Street and discharges to public facilities of the Perkasio Borough Authority. Alternatives presented in the 1987 Wastewater Facilities Plan involved utilizing a community collection system with connection to the pump station at Deibler Elementary School.

Alternatives for connection with Deibler Elementary School would require intergovernmental cooperation with the Pennridge School District and Perkasio Borough Authority (which provides sewer service to Deibler Elementary School). Further complicating these alternatives is potential litigation between East Rockhill Township, Perkasio Borough Authority, and Pennridge Wastewater Treatment Authority due to wastewater treatment plant capacity allocation.

Due to potential administrative/legal problems with alternatives requiring connection to Deibler Elementary School; and high costs estimated for this approach in the analysis prepared during the 1987 Wastewater Facilities Plan, costs associated with this alternative were not reviewed during the current plan update.

SCHWENK MILL ROAD ALTERNATIVE #5

CONNECTION TO EXISTING SEWER
OPTION S-3 - PRESSURE SEWER WITH STEPS OR GRINDER PUMP



- EXISTING PUMP STATION
- EXISTING 8" GRAVITY SEWER
- - - EXISTING FORCE MAIN
- - - PROPOSED 2" PRESSURE SEWER

0 800 1600 3200 4800

SCALE IN FEET

CHAPTER 7

Alternative #7 - Community Land Application

Description: A community land application wastewater disposal system would be comprised of three main components. A collection system would be needed to convey either raw wastewater or septic tank effluent from homes to a treatment facility such as a package treatment plant or aerated lagoon. The effluent from the treatment unit would then be applied to the surface of the land through a spray irrigation system.

Soils in the area of Schwenk Mill Road are poorly suited to wastewater disposal. Seasonal high water tables, perched water tables, shallow depth to bedrock, and poor permeability may prevent the use of the spray irrigation method.

Alternative #8 - Pump and Haul

Description: The objectives of a pump and haul maintenance program are to ensure that septic tanks, especially the malfunctioning systems, are pumped out on a regular basis and that the septage is disposed of properly. This program could be instituted as part of an on-site management program and could be applied to additional on-site problem areas.

In general, there are three approaches to the pump and haul program:

1. East Rockhill Township provides the pumping and hauling service.
2. One or more licensed haulers enters into a contract with the Township to provide the pumping and hauling service.
3. The individual homeowner contracts with an individual pumper who operates freely in a competitive market.

Recommended Alternative:

The recommended alternative for the Schwenk Mill Road Study Area is Alternative #2 - Public Education and Technical Assistance Program.

CHAPTER 7

KEELERSVILLE/BUTLER LANE STUDY AREA:

The 1987 Pennridge Area Sewerage Facilities Plan analyzed seven (7) alternatives for the Keelersville/Butler Lane area and selected OLDS management as the recommended short term alternative. Small diameter gravity sewer with connection to a community sub-surface disposal system was recommended as a long term solution. No subsequent action was taken by East Rockhill Township.

Data used in preparation of the 1987 Sewerage Facilities Plan was reconsidered during the current plan update. Pennridge Area "Aerial Survey of the Septic System Failures in Bucks County", October 1981, prepared by Remote Sensing Consultants, identified eleven (11) failing systems in the Keelersville/Butler Lane study area. Data indicated that of these eleven (11) identified sites; five (5) were categorized as "chronic failure", two (2) were "seasonal failures", and four (4) were "probable failures". Identified sites were located along a 5,700 feet length of Butler Lane and Old Bethlehem Road. ("Chronic failures" are those systems identified as having wastewater coming to the surface at the time of field inspection, and appeared to experience such problems throughout the year. "Seasonal failures" included systems which were not necessarily failing at the time of inspection, but did exhibit signs of having failed in the past, or having the potential to fail during periods of excessive use or moderate to heavy rainfall. Sites determined as "probable failure" contained questionable pipes or ditches, excessively dense vegetation preventing a detailed inspection, or were reported by neighbors.)

The following sewage facilities alternatives were analyzed for the Keelersville/Butler Lane study area:

1. "No-Action" Alternative.
2. Public Education and Technical Assistance.
3. On-site Rehabilitation.
4. On-lot Disposal System (OLDS) Management.

Alternatives for Keelersville/Butler Lane Study Area

Alternative #1 - "No-Action" Alternative

Description: A "no-action" plan for the Keelersville/Butler Lane area would provide no change in the current situation. This type of "status quo" approach would mean no new wastewater facilities, and the homeowner would continue to be responsible for his own on-site system. Therefore, existing on-lot malfunctions would probably continue unabated and additional on-lot systems may malfunction in the future due to soil conditions.

Impacts: The following impacts are associated with this alternative:

1. Possible health hazards.
2. Possible surface water contamination.
3. Possible groundwater contamination.
4. Continued nuisance problems.
5. Continued violation of Clean Streams Law.
6. No change in administrative functions.
7. Status quo alternative.
8. Property values could be suppressed.

CHAPTER 7

Alternative #2 - Public Education and Technical Assistance Program

Description: On-lot sewage disposal systems have a finite life expectancy and require basic maintenance practices which can extend the life of the system. Most homeowners are not aware of the maintenance needs of their on-lot septic systems. When faced with problems of a malfunctioning septic system, for example - surfacing septic effluent, the homeowner usually just "lives with it". One way that municipal officials may help prevent further problems with on-site systems would be to administer a public education program.

With this type of program, the responsibility for operation and maintenance of an on-lot system remains with the homeowner. Their attention is drawn to the need for maintenance, repair, or rehabilitation, and water conservation through dissemination of written materials. This should be followed by an "active" program such as the public presentation of various options available to the homeowner.

Obtaining technical assistance for the repair or replacement of on-lot septic systems would also be the homeowner's responsibility. Options available include local plumbers, septage haulers, contractors, and engineers, depending upon the severity of the problem. The representative sewage enforcement officer (SEO) from the Bucks County Department of Health is a good contact for technical advice.

Impacts: The following impacts are associated with this alternative:

1. System ownership and maintenance responsibility remains with the homeowner.
2. Township involvement is minimal. (Corresponds to Option #4 in Table 6-3.)
3. Most existing malfunctions will probably continue.
4. Severity of problems may decrease with use of water conservation devices and techniques.
5. Future system malfunctions may be averted because of increased homeowner awareness.
6. Low cost or no cost to Township; low cost to residents.

Alternative #3 - On-site System Rehabilitation

Description: On-lot sewage disposal problems can originate from the natural aging of individual components, improper installation and/or maintenance, adverse site conditions, or a combination of these. It appears that the predominant reason for malfunctions in the Keelersville/Butler Lane study area is the poorly drained to somewhat poorly drained soils (Abbottstown, Doylestown, and Reaville soils) with seasonal high water tables and shallow depth to bedrock. However, only a detailed investigation of each parcel can determine the site specific cause of malfunctions.

Possible corrective measures to remedy on-site malfunctions are as diverse as the reasons why they malfunction. The on-site rehabilitation alternatives determined to be possibly feasible for use in the area (1987 Wastewater Facilities Plan) are non-structural (no construction activity on the system components) waste flow reduction and rehabilitation, and rehabilitation of septic tank and/or soil absorption system. The adverse soil conditions in the area, however, may preclude the use or effectiveness of these alternatives in solving the on-site system malfunctions.

CHAPTER 7

Impacts:

1. System ownership and maintenance responsibility remains with the homeowner.
2. Township involvement is minimal.
3. Solutions to on-site failures (with exception of holding tanks) may not be feasible.
4. Severity of problems may be decreased.
5. Solutions may involve high costs to homeowners.

Alternative #4 - On-Lot Disposal System (OLDS) Management Program

Description: On-lot disposal system (OLDS) can provide reliable service at a reasonable cost while preserving environmental quality. The failure of on-lot systems, however, can create both public health hazards and water quality problems or, at the very least, a public nuisance. If OLDS are to perform successfully over a reasonable lifetime, a sound on-lot management program with sufficient provision for technical assistance, education, and enforcement should be provided. An effective management program functions to assure proper design, construction, operation and maintenance of these systems.

Impacts: The following impacts are associated with this alternative:

1. The number and severity of pollution and potential health problems would decrease through continued system maintenance and rehabilitation.
2. Township involvement could vary.
3. Varying degrees of administrative, financial, and legal complexity could be encountered.
4. Groundwater recharge would continue.

Recommended Alternative:

The recommended alternative for the Keelersville/Butler Lane Study Area is Alternate #2 - Public Education and Technical Assistance Program.

OUTLYING STUDY AREA:

In addition to the areas of concentrated development with on-lot sewage disposal systems addressed in the preceding narratives, there are scattered septic system failures within the Township. The small number and isolated nature of the septic system failures precludes use of community systems as alternatives in correcting the malfunctions. This study area is outside the development area of the Township, eliminating public sewer collection system extension as an alternative.

Relatively little development is expected within this study area. New single family residential development will utilize on-site sewage disposal systems, or in the case of a clustered housing development, a new community system.

The following alternatives were analyzed for the outlying study area:

1. No Action Alternative.
2. Public Education and Technical Assistance.
3. On-lot Disposal System (OLDS).

CHAPTER 7

Alternatives for the Outlying Study Area:

Alternative #1 - No Action Alternative

Description: A "no-action" plan for on-site systems would result in no change in the current situation. This type of "status quo" approach would mean no new sewage facilities, and the homeowner would continue to be responsible for his own on-site system. Therefore, any existing on-lot system malfunctions would probably continue unabated.

Impacts: The following impacts are associated with this alternative:

1. Possible health hazards.
2. Possible surface water and groundwater contamination.
3. Continued nuisance problems.
4. Continued violation of Clean Streams Law.
5. No change in administrative functions.
6. Property values could be suppressed.

Alternative #2 - Public Education and Technical Assistance

Description: Research has shown that on-lot sewage disposal systems have a finite life expectancy and require basic maintenance practices which can extend the life of the system. Most homeowners are not aware of the maintenance needs of their on-lot septic systems. When faced with the problem of a malfunctioning septic system, for example surfacing septic effluent, the homeowner usually just "lives with it". One way that municipal officials may help prevent further problems with on-site systems would be to administer a public education program.

With this type of program, the responsibility for operation and maintenance of an on-lot system remains with the homeowner. Their attention is drawn to the need for maintenance, repair, or rehabilitation, and water conservation through dissemination of written materials. This may be followed by an "active" program such as the public presentation of various options available to the homeowner.

Obtaining technical assistance for the repair or replacement of on-lot septic systems would also be the homeowner's responsibility. Options available include local plumbers, septage haulers, contractors, and engineers, depending upon the severity of the problem. The representative sewage enforcement office (SEO) from the County Department of Health is a good contact for technical advice.

Impacts: The following impacts are associated with this alternative:

1. The number and severity of pollution and potential health problems would decrease through continued system maintenance and rehabilitation.
2. Township involvement/cost is minimal.
3. Groundwater recharge would continue.

Alternative #3 - On-lot Disposal System (OLDS) Management Program

Description: On-lot disposal system (OLDS) can provide reliable service at a reasonable cost while preserving environmental quality. The failure of on-lot systems, however, can create both public health hazards and water quality problems or, at the very least, a public nuisance. If OLDS are to perform successfully over a reasonable lifetime, a sound on-lot management program with sufficient provision for technical assistance, education, and enforcement should be

CHAPTER 7

provided. An effective management program functions to assure proper design, construction, operation and maintenance of these systems.

Impacts: The following impacts are associated with this alternative:

1. The number and severity of pollution and potential health problems would decrease through continued system maintenance and rehabilitation.
2. Township involvement could vary.
3. Varying degrees of administrative, financial, and legal complexity could be encountered.
4. Groundwater recharge would continue.

Recommended Alternative:

The recommended alternative for the Outlying Study Area is Alternate #2 - Public Education and Technical Assistance Program.

CHAPTER 8 CONSISTENCY REQUIREMENTS

For any plan to be effective, it must be coordinated with other plans to ensure that the different plans are not counter productive to one another. Coordination of sewage facilities alternatives and other programs at the planning stage permits resolution of potential problems before committing municipal resources. This section identifies an alternative necessary to ensure this coordination. Not all changes necessary to facilitate this coordination can be made within the Wastewater Facilities Plan and other plans may require revision. Recommendations for such changes are included in this section.

COWAMP/208 Water Quality Management Plan

Policies and recommendations included in the East Rockhill Township Wastewater Facilities Plan conform to basic water quality goals and objectives of the Comprehensive Water Quality Management Plan.

Water Resources Planning Act (State Water Plan - SWP4, Central Delaware River, Sub-basin 2)

Water supply within East Rockhill Township is provided by both individual on-site wells and public facilities owned and operated by the Perkasio Borough Authority and North Penn Water Authority. The State Water Plan does not identify any deficiencies within the Township.

Township Comprehensive Plan

Study areas contained in the Wastewater Facilities Plan have been partially developed in consideration of the future land use plan contained within the Comprehensive Plan. The Comprehensive Plan directs future growth which, in turn, permits an estimate of future wastewater planning/management requirements.

Review of the Comprehensive Plan indicates an inconsistency with the Township Zoning Ordinance and, with the Wastewater Facilities Plan. Specifically, the Zoning Ordinance and District Map were revised on June 15, 1993 (Ordinance #150) to designate Tax Map Parcel #12-14-29 R-1, Residential. (Previously, this parcel was zoned RA, Residential Agricultural) The Zoning Amendment was approved by the Board of Supervisors upon receipt of recommendation by the Bucks County Planning Commission and East Rockhill Township Planning Commission, and holding the required public hearings. Within the Comprehensive Plan, however, this parcel remains designated RA, Residential Agricultural.

Township Zoning Ordinance

The Zoning Ordinance addresses wastewater facilities in several sections and includes specific requirements concerning wastewater facilities for proposed developments. The Wastewater Facilities Plan in no way conflicts with wastewater facilities requirements contained in the Zoning Ordinance.

Township Subdivision Ordinance

The wastewater facilities planning process mandated under Act 537 and the land development review process must be consistent for effective wastewater management planning. The recently adopted East Rockhill Township Subdivision and Land Development Ordinance (adopted December 20, 1994) provides for adequate coordination of the Act 537 and land development review process at the preliminary plan application stage.

CHAPTER 8

Municipal Wasteload Management Plan (PA Code, Title 25, Chapter 94)

The Municipal Wasteload Management Report for the Year 1995 for the Pennridge Wastewater Treatment Authority is dated March 1996. The report indicates that although the wastewater treatment plant (WWTP) is approaching capacity, compliance with the NPDES permit is maintained. The WWTP is not hydraulically overloaded according to the Chapter 94 definition, although the flows for individual months in past years have exceeded the rated capacity of 4.0 mgd.

The Report concludes that PWTA should pursue its selected plan of controlling wasteloads. The major provisions of this plan include limiting new sewer connections and correcting sewer problems with the intent of reducing I/I flows. Additionally, the PWTA should continue to investigate plans to expand the WWTP.

Anti-degradation Requirements (PA Code, Title 25, Chapters 93, 95 and 102)

Selected wastewater alternatives include a proposed discharge of treated wastewater to surface waters for the development of Study Area Sub-area "B" (East Branch of the Perkiomen Creek). Preliminary treatment requirements were obtained from PADEP and are included in correspondence dated May 3, 1996 (refer Appendix). Development of a new treatment facility will be consistent with PADEP established effluent limits.

Pennsylvania's Prime Agricultural Land Policy (PA Code, Title 4, Chapter 7)

Wastewater alternative included in the designated study area are proposed to serve areas of existing problems or portions of the Township planned for development pursuant to the Comprehensive Plan and Zoning Ordinance. None of the recommendations or policies contained in this Plan promote development of agricultural land.

Stormwater Management Act (Act 32)

Stormwater management plans developed under the Stormwater Management Act have not been prepared for any of the watersheds within East Rockhill Township. (Tohickon Creek Watershed plan is currently being prepared.)

Wetland Protection (PA Code, Title 25, Chapter 105)

The construction and on-going operation of wastewater systems proposed in the plan are not anticipated to adversely impact any wetland areas identified on the National Wetland Inventory Maps.

Pennsylvania Natural Diversity Inventory (PA Code, Title 25, Chapter 71.21)

No potential impact on historic or archeological resources has been identified. Refer to the Appendix for correspondence from this agency.

Pennsylvania Historic Preservation Act (P.C.S. Title 37, Section 507)

No potential impact on the historic or archaeological resources contained in this data base has been identified. Refer Appendix for correspondence from this agency.

CHAPTER 9 PLAN RECOMMENDATIONS AND IMPLEMENTATION SCHEDULE

RECOMMENDED PLAN:

Recommended plan for wastewater facilities within East Rockhill Township includes the following key elements:

1. Implementation of a collection and conveyance system and construction of a package treatment facility to serve the portion of the development study area (identified as Sub-area "B", which includes the Suburban Zoning District and a portion of the Residential-1 Zoning District) in the vicinity of Branch Road.
2. Continued reliance on treatment facilities of the Pennridge Wastewater Treatment Authority to provide public sewer service to the development study area, Sub-area "A" (which includes areas of the Township zoned Suburban, Commercial-Office, Industrial, Residential-1, and Cultural-Educational).
3. Extension of public sewer collection and conveyance system to serve the designated Development Study Area Sub-area "C" in the vicinity of Ridge Road and Old Bethlehem Pike to correct malfunctioning on-site sewage disposal systems. Treatment of effluent will be at the Pennridge Wastewater Treatment Authority facility.
4. Increased level of municipal involvement in wastewater facility planning and maintenance through implementation of a public education program.
5. Continued monitoring of on-site sewage disposal systems within the Schwenk Mill Road and Keelersville/Butler Lane Study areas. Pursue long-term goal of providing public sewer service to the Schwenk Mill Road Study area.
6. Implementation of a wastewater alternative selection process for all development to ensure utilization of the most cost effective and environmentally sensitive disposal/treatment facilities.

DEVELOPMENT AREA:

Selected Alternative

For the purposes of this study, the development study area was divided into Sub-areas "A", "B", and "C". Within Sub-area "A", future wastewater disposal needs will be serviced through allocation capacity at the Pennridge Wastewater Treatment Authority based on adopted PWTA policy. Long-term goals include resolution of available capacity based on capacity purchased in the original 1975 agreement and actual utilization; and/or cooperation with PWTA to provide additional capacity during plant renovation/upgrades.

Within development area Sub-area "B", the selected alternative consists of installation/modifications to existing collection and conveyance system to direct flow to a new East Rockhill Township owned and operated sewage treatment package plant to be constructed with discharge to Branch Creek.

CHAPTER 9

Implementation Schedule (Development Area Sub-Area "B")

<u>Task</u>	<u>Estimated Completion Date</u>
1. Public meeting/resident input.	September 1996
2. Act 537 Plan adoption.	September 1996
3. Submit Act 537 Plan to DEP.	September 1996
4. Act 537 approval.	February 1997
5. Detailed topographic survey/site investigation.	March 1997
6. Prepare detail preliminary design/cost estimate.	May 1997
7. Develop financing plan.	June 1997
8. Prepare final design/construction estimate.	July 1997
9. Design approval by DEP.	January 1998
10. Advertise for bids/award.	February 1998
11. Commence construction.	March 1998
12. Complete construction.	December 1998
13. New connections.	January 1999

East Rockhill Township will own, operate, and manage the collection system as well as the treatment facility. The wastewater treatment facility will provide sewer service to 44 existing connections (currently served by the Pennridge Wastewater Treatment Authority plant), 181 connections from approved subdivision (Fenley Tract), 125 proposed connections (Weidner Farms), and 61 "in fill" lots. Project will be completely user financed. It is anticipated that East Rockhill Township will obtain a loan to finance the project which will be paid back by system users.

Within development area Sub-area "C", the selected alternative is installation of East Rockhill Township public sewer collection and conveyance system with treatment at the Pennridge Wastewater Treatment Authority treatment plant.

CHAPTER 9

Implementation Schedule (Development Area Sub-Area "C")

	<u>Task</u>	<u>Estimated Completion Date</u>
1.	Request planning module exemption from East Rockhill Township, PWTA, and PADEP.	August 1996
2.	Detailed topographic survey/site investigation.	August 1996
3.	Prepared detailed preliminary design/cost estimate.	August 1996
4.	PADEP exemption approval.	September 1996
5.	Develop financing plan.	September 1996
6.	Public meeting/resident input.	September 1996
7.	Prepare final design/construction estimate.	October 1996
8.	Advertise for bids/award.	November 1996
9.	Commence construction.	January 1997
10.	Complete construction.	March 1997
11.	New connections.	April 1997

East Rockhill Township will own, operate, and manage the collection system. Effluent will be treated at the Pennridge Wastewater Treatment Authority plant. The collection system will provide sewer service to approximately 33 existing dwellings/businesses. Project will be completely user financed.

SCHWENK MILL ROAD STUDY AREA:

Selected Alternative

The selected alternative for the Schwenk Mill Road study area is public education and technical assistance program (Alternate #2). Due to the small number of failed systems within the study area and excessive costs of a community system/public sewer alternative, the Township will implement a program to educate residents regarding on-lot disposal system maintenance, water conservation fixtures, and other methods to reduce septic system failures and potential impact from same.

CHAPTER 9

Implementation Schedule

<u>Task</u>	<u>Estimated Completion Date</u>
1. Public meeting/resident input.	September 1996
2. Act 537 Plan adoption.	September 1996
3. Submit Act 537 Plan to DEP.	September 1996
4. Act 537 Plan approval.	February 1997
5. Prepare educational material for distribution.	March 1997
6. Distribute educational material.	April 1997
7. Assist homeowners experiencing problems with wastewater disposal systems.	On-going

Private ownership/private operation and maintenance of the on-lot disposal systems will continue with any costs associated with the maintenance and operation of the systems to be the responsibility of the individual property owner.

KEELERSVILLE/BUTLER LANE STUDY AREA:

Selected Alternative

The selected alternative for the Keelersville/Butler Lane study area is public education and technical assistance program (Alternate #2). Due to the small number of failed systems within the study area and excessive costs of a community system/public sewer alternative, the Township will implement a program to educate residents regarding on-lot disposal system maintenance, water conservation fixtures, and other methods to reduce septic system failures and potential impact from same.

Implementation Schedule

<u>Task</u>	<u>Estimated Completion Date</u>
1. Public meeting/resident input.	September 1996
2. Act 537 Plan adoption.	September 1996
3. Submit Act 537 Plan to DEP.	September 1996
4. Act 537 Plan approval.	February 1997
5. Prepare educational material for distribution.	March 1997
6. Distribute educational material.	April 1997

CHAPTER 9

7. Assist homeowners experiencing problems with wastewater disposal systems. On-going

Private ownership/private operation and maintenance of the on-lot disposal systems will continue with any costs associated with the maintenance and operation of the systems to be the responsibility of the individual property owner

OUTLYING STUDY AREA:

Selected Alternative

The selected alternative for the Outlying study area is public education and technical assistance program (Alternate #2). Due to the limited number of failed systems within the study area and excessive costs of a community system/public sewer alternative, the Township will implement a program to educate residents regarding on-lot disposal system maintenance, water conservation fixtures, and other methods to reduce septic system failures and potential impact from same.

Implementation Schedule

	<u>Task</u>	<u>Estimated Completion Date</u>
1.	Public meeting/resident input.	September 1996
2.	Act 537 Plan adoption.	September 1996
3.	Submit Act 537 Plan to DEP.	September 1996
4.	Act 537 Plan approval.	February 1997
5.	Prepare educational material for distribution.	March 1997
6.	Distribute educational material.	April 1997
7.	Assist homeowners experiencing problems with wastewater disposal systems.	On-going

Private ownership/private operation and maintenance of the on-lot disposal systems will continue with any costs associated with the maintenance and operation of the systems to be the responsibility of the individual property owner.

APPENDIX A

**WASTEWATER
FACILITIES PLAN**

Pennsylvania Act 537

PENNRIDGE WASTEWATER TREATMENT AUTHORITY
TREATMENT PLANT AGREEMENT

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AGREEMENT

AGREEMENT made as of this first day of November A.D., 1975, by and among Perkasio Borough Authority, Bucks County, Pennsylvania (Perkasie Authority), Pennridge Wastewater Treatment Authority, Bucks County, Pennsylvania (Pennridge Authority), Telford Borough Authority, Montgomery County, Pennsylvania (Telford Authority), bodies politic and corporate, organized and existing under the Pennsylvania Municipality Authorities Act of 1945, P.L. 382, as amended (the "Act"), Hilltown Township (Hilltown), the Borough of Sellersville (Sellersville), the Borough of Silverdale (Silverdale), and the Township of East Rockhill (East Rockhill), all municipal corporations located in Bucks County, Pennsylvania, and existing under the laws of the Commonwealth of Pennsylvania,
WITNESSETH:

WHEREAS, the Pennridge Authority has been authorized to hold, construct, improve, maintain, operate, own and lease, either as lessor or as lessee, a wastewater treatment plant and related facilities for the transportation, treatment, and disposal of sanitary sewage for the Boroughs of Perkasio and Sellersville and for such other territory as it may be authorized to serve; and

WHEREAS, the Pennridge Authority, in accordance with its authorization and powers, proposes to treat and dispose of sanitary and industrial wastes emanating from the collection facilities of the parties to this Agreement pursuant to the terms and conditions in this agreement hereinafter set forth; and

WHEREAS, the Pennridge Authority has acquired or shall hereafter acquire and will operate certain interceptor sewer lines and treatment facilities for the purposes of providing for the treatment and disposal services provided for herein; and

WHEREAS, it is in the public interest, in order to provide for the health and safety of the residents and citizens of the community, that this agreement be entered into;

NOW, THEREFORE, the parties hereto, each binding itself, its successors and assigns, and each representing that it has proper legal authority to enter in to this contract, and each intending to be legally bound hereby, do mutually represent, covenant and agree as follows:

ARTICLE I

DEFINITIONS

Section 1.01 Defined Terms. The terms defined in this Article I, as well as those defined in the preambles, wherever used or referred to in this Agreement, shall have the following respective meanings unless a different meaning clearly appears from the context:

(a) "Average Daily Flow" shall be calculated by dividing total Sewage Waste flow under consideration for the ninety (90) days immediately preceding the date of calculation by the number ninety (90).

(b) "B.O.D." (Biochemical Oxygen Demand) means the quantity of oxygen expressed in milligrams per liter, utilized in the biochemical oxidation of organic matter under standard laboratory procedure for five days at 20° Centigrade. The standard laboratory procedure shall be that found in the latest edition of "Standard Methods for the Examination of Water and Sewage" published by the American Public

Health Association.

(c) "Bonds" means any notes, bonds or other debt obligations authorized and issued by Pennridge Authority for the purpose of financing the acquisition or construction of the Treatment Plant, additions, improvements, enlargements and/or modifications thereto, or to refund the same.

(d) "Consulting Engineers" means Detz Environmental Engineers, Inc., Plymouth Meeting, Pennsylvania, and in the event said firm ceases to serve as Consulting Engineers for Pennridge Authority, an engineering firm or professional engineer having a favorable repute for skill and experience in the construction and operation of sewage treatment plants, registered in Pennsylvania and chosen by Pennridge Authority.

(e) "Debt Service Requirements" means, with reference to a particular period with respect to the Bonds under consideration, the sum of (i) interest payable on the Bonds during such period, (ii) the principal amount of the Bonds maturing by the express terms during such period, except any term Bonds which are to be retired at or prior to maturity through mandatory sinking fund payments made at regular intervals, and (iii) any amounts required to be set aside and used as a sinking fund for the retirement, at or prior to maturity, of any term Bonds.

(f) "Domestic Waste" means normal household wastes from kitchens, water closets, lavatories and laundries.

(g) "East Rockhill" means the Township of East Rockhill, Bucks County, Pennsylvania.

(h) "Hilltown" means Hilltown Township, Bucks County, Pennsylvania.

(i) "Industrial Cost Recovery Charges" means those charges,

calculated by Pennridge Authority, to be collected from any individual, firm, corporation or other entity directly or indirectly discharging Sewage Wastes into the Treatment Plant, as required by the laws of the United States or of the Commonwealth of Pennsylvania or by the rules and regulations of any agencies thereof, in order to recover the costs of construction of the Treatment Plant, capital additions thereto, or any portion thereof, applicable to such user, in accordance with the applicable definitions, guidelines, criteria or formulae set forth in such laws and regulations.

(j) "Industrial Wastes" means any and all wastes discharged from an industrial establishment, other than Sanitary Sewage.

(k) "mg/l" means milligrams per liter.

(l) "Pennridge Authority" means the Pennridge Wastewater Treatment Authority, Bucks County, Pennsylvania.

(m) "Perkasie Authority" means the Perkasie Borough Authority, Bucks County, Pennsylvania.

(n) "pH" (Hydrogen Ion Content) means the logarithm of the reciprocal of the concentration of hydrogen ions, indicating the degree of acidity or alkalinity of a substance.

(o) "Points of Connection" means those points at which any party hereto connects collector or interceptor sewer mains over which it has exclusive use and control to (i) a collector or interceptor sewer main which is owned by another municipality or authority and jointly used by both said parties and such other authority or municipality, or (ii) an interceptor sewer owned by the Pennridge Authority. Such points of connection are indicated on Exhibit A, attached hereto and made a part hereof by reference.

(p) "Reserved Capacity" means treatment capacity in the Treatment Plant, in the maximum quantities set forth in Section

3.02 hereof, allocated to each respective party to this Agreement and reserved for their exclusive use.

(q) "Sanitary Sewage" means all watercarried domestic waste from sanitary conveniences of residences, offices, hotels, stores, restaurants, hospitals, schools, commercial establishments, industrial establishments and similar services.

(r) "Sellersville" means the Borough of Sellersville, Bucks County, Pennsylvania.

(s) "Sewage Collection System" means all of the sewage collector facilities constructed or to be constructed by each of the parties of this Agreement, other than Pennridge Authority, within the respective municipality and includes sewers, interceptors, force mains, metering devices, pumping stations and other appurtenances.

(t) "Sewage Wastes" means Sanitary Sewage or Industrial Wastes or any combination of either thereof, but only to the extent that Industrial Wastes have been pretreated and otherwise meet the requirements of this Agreement.

(u) "Silverdale" means the Borough of Silverdale, Bucks County, Pennsylvania.

(v) "Slug" means any discharge of Sewage Wastes which for a period of fifteen minutes shall exceed five times the average daily flow. The term particularly applies to the sudden emptying of large vats, tanks or swimming pools into the sewage system.

(w) "South Side Interceptor" means the interceptor or trunk sewer, including metering stations and appurtenances, to be constructed by Pennridge Authority and to be located in accordance with the plan attached hereto as Exhibit "A".

(x) "Telford Authority" means the Telford Borough Authority, Montgomery County, Pennsylvania.

(y) "Total Cost of Operating and Maintaining" shall, with reference to the Treatment Plant, mean the actual costs and expenses required in the operation, repair and maintenance thereof including, in each case, without intending to limit the generality of the foregoing, electric power, labor, materials and supplies, equipment and fixtures, administration costs, and all contract services, less any federal or state grants, which are specifically designated by the granting agency to be reimbursement for operation and maintenance.

(z) "Total Project Cost" means the actual total cost or the estimated total cost, as applicable, of the acquisition of the Treatment Plant and/or construction of any addition, improvements and/or modifications thereto calculated in the following manner:

(i) The amount actually paid or estimated to be paid, as applicable, under the contract or contracts for acquisition or construction of the facilities under consideration; and

(ii) All actual or estimated costs and expenses, as applicable, of engineering, legal costs, site costs, rights-of-way, privilege rights, licenses, easements and other interests in real property, and financing costs, directly attributable to such facilities under consideration.

(aa) "Total Solids" shall mean solids that either float on the surface of or are in suspension or dissolved in water, sewage or other liquid, and which are determined by laboratory analysis.

(bb) "Treatment Plant" means the existing sewage treatment plant and facilities, located in West Rockhill Township and Sellersville Borough, owned or to be owned and operated by Pennridge Authority, together with any additions, modifications and/or improvements thereto.

ARTICLE II

STATEMENT OF INTENT

Section 2.01 Project. The parties hereto understand and agree that, in order to treat the quantity of Sewage Wastes herein contemplated, Pennridge Authority will acquire the Treatment Plant, enlarge and modify it and make additions and improvements thereto. Such currently contemplated additions, improvements and/or modifications to the Treatment Plant shall be made as hereinafter provided, so that there will be available to each party to the Agreement the Reserved Capacity allocated to it in Section 3.02 hereof. The existing Treatment Plant and any additions thereto shall be owned and maintained exclusively by Pennridge Authority. However, each party to this Agreement shall have the exclusive right to the Reserved Capacity allocated to it in Section 3.02 hereof. Each party hereto shall pay its pro-rata share of the project contemplated in this Section, determined by dividing its Reserved Capacity by the total design capacity of the Treatment Plant. Payment of such share shall be made in accordance with Section 6.04 hereof.

Section 2.02 Financing. Pennridge Authority shall have exclusive control over all manner and means of procuring any necessary financing for the additions and modifications contemplated in Section 2.01 or those required pursuant to Sections 4.04, 4.06 or 4.07, subject to provisions hereinafter set forth. Pennridge Authority agrees, however, to provide to each of the other parties to this Agreement such information with respect to said financing as will enable each of said parties to give a timely opinion and recommendation to Pennridge Authority concerning said financing.

Section 2.03 Grants. Each of the parties to this Agreement hereby authorizes Pennridge Authority to apply for and accept any

grants or contributions from any federal, state or other governmental agency for use in modifying or adding to said Treatment Plant based on the increased quantity of Sewage Wastes to be treated as a result of entering into the Agreement.

ARTICLE III

TERMS OF AGREEMENT

Section 3.01 Term. This Agreement shall become effective upon its execution and delivery by all parties hereto and shall remain in effect until terminated by mutual agreement of all parties.

Section 3.02 Reserved Capacity. Subject to the payment of charges, and subject also to the limitations of this Agreement (including but not limited to those set forth in Article VII hereof), Pennridge Authority grants unto each party the right, during the term of this Agreement, to discharge Sewage Wastes into the Pennridge Authority Treatment Plant in the maximum quantities set forth in Exhibit "B" hereto, and Pennridge Authority agrees to treat and dispose of the same in a manner approved by the Pennsylvania Department of Environmental Resources and in accordance with the terms and conditions herein set forth.

Section 3.03 Delivery of Sewage Wastes. Except as herein otherwise provided, all Sewage Wastes originating in each party's Sewage Collection System shall be delivered to a Point or Points of Connection for transportation to and treatment at Pennridge Authority's Treatment Plant; provided, however, that nothing herein shall be construed as requiring any party to deliver to Pennridge Authority any Sewage Wastes originating in its respective area which by good engineering practice cannot be delivered to the Treatment Plant on a practical and economical basis.

Section 3.04 Additional Capacity. (a) If, at any time, any party hereto is determined to be using all of its Reserved Capacity under the terms of this Agreement, it shall have the option, in accordance with the following procedures, to reserve additional capacity in the Treatment Plant under terms and conditions similar to those contained in this Agreement with respect to the initial capacity reserved to it; provided, however, that there is in existence, at the time, unused treatment capacity, which has not been allocated to another municipality or authority, or which has been so allocated but such other municipality or authority is not in need of such capacity and is willing to surrender the same.

(b) Pennridge Authority agrees that, in the event there is unallocated capacity in the Treatment Plant or in the event any party to this Agreement consents to a reduction in the capacity reserved to it, the capacity unallocated or so surrendered shall be offered to the other parties to this Agreement in proportion to the capacity initially reserved to them. If any party to this Agreement does not wish to accept such additional capacity, the capacity so offered shall be made available to the remaining parties on the same prorata basis, until the capacity is fully allocated or until all parties have declined to accept such capacity, at which time Pennridge Authority may offer such capacity to municipalities and/or municipality authorities not parties to this Agreement.

(c) Any party surrendering any portion of its Reserved Capacity shall be reimbursed for that portion of its capital contributions or payments with respect to debt service applicable to said Capacity by the municipality or municipality authority acquiring such Capacity, plus interest charges incurred with respect to the financing of that portion of any capital contributions. Under no

circumstances shall any party hereto, not acquiring any Reserved Capacity surrendered by any other party, be required to make any reimbursement or payments to any party surrendering any portion of its Reserved Capacity.

ARTICLE IV

CONSTRUCTION SCHEDULE, OPERATIONS AND ENFORCEMENT

Section 4.01 Treatment Plant. Pennridge Authority covenants to use its best efforts to obtain financing, if necessary, and to construct the enlargements, modifications, additions and improvements to the Treatment Plant contemplated in Section 2.01 hereof.

Section 4.02 Meter Stations. Meter stations for the purpose of measuring the flow of each party hereto shall be installed at all Points of Connection. The said Points of Connection are set forth in Exhibit "A" to this Agreement. Meters shall be of the continuous reading type which establish daily flows and the expense of procuring, installation and maintenance thereof shall be paid pursuant to the terms of the interceptor agreement among the parties hereto of even date herewith.

Section 4.03 Collection System Insurance. Each party hereto will insure its Sewage Collection System in a responsible company or companies authorized and qualified to do business under the laws of the Commonwealth of Pennsylvania against loss or damage by fire and other risk and casualty in such amounts as are usually carried on like property in Pennsylvania. Immediately after any loss or damage to any such Sewage Collection System, or any part thereof, the respective party owning said System will commence and duly prosecute the repair, replacement or reconstruction of the

damaged or destroyed portion of the Sewage Collection System, all according to the plans and specifications therefore prepared by its engineers.

Section 4.04 Treatment Plant Insurance. (a) Pennridge Authority will insure the Treatment Plant in a responsible company or companies authorized and qualified to do business under the laws of the Commonwealth of Pennsylvania against loss or damage by fire and other risk and casualty and in such amounts as are usually carried on like property in Pennsylvania. Immediately after any loss or damage to the Treatment Plant, or any part thereof, Pennridge Authority will commence and duly prosecute the repair, replacement or reconstruction of the damaged or destroyed portion of the Treatment Plant, according to the plans and specifications therefore prepared by its Consulting Engineers.

(b) In the event that it shall become necessary for Pennridge Authority to make any repair, replacement or reconstruction of the Treatment Plant, or any portion thereof, and there are insufficient funds available from insurance proceeds to pay the costs and expenses thereof, each party hereto shall pay the same share of the costs of such repair, replacement or reconstruction as exceed the insurance proceeds as its Reserved Capacity bears to the total design capacity of the Treatment Plant. Payment of such share shall be made in accordance with Section 6.04 hereof.

Section 4.05 Compliance With Laws. The parties hereto agree to comply with all present and future laws, rules, regulations, permits, orders and requirements lawfully made by the Department of Environmental Resources or any other governmental body having jurisdiction.

Section 4.06 Upgrading of Treatment Plant. If the Department of Environmental Resources or any other governmental

body having jurisdiction orders Pennridge Authority to intensify treatment, then each party hereto shall pay the same share of the costs of such intensification as its Reserved Capacity bears to the total design capacity of the Treatment Plant. Payment of such share shall be made in accordance with Section 6.04 hereof.

Section 4.07 Additions to Treatment Plant. (a) If any party hereto wishes Pennridge Authority to enlarge the Treatment Plant to provide additional treatment capacity, it shall notify Pennridge Authority in writing of the amount of additional capacity it is requesting. Upon receipt of such notification, Pennridge Authority shall notify, in writing, all other parties hereto to determine if they desire additional capacity. Any party hereto who does not respond, in writing, to such notification from Pennridge Authority within sixty (60) days of the date of such notification shall be deemed to have requested no additional capacity.

(b) Pennridge Authority agrees that, after each party hereto has responded or is deemed to have responded, it shall obtain financing, if necessary, and construct the enlargements, additions, improvements or modifications to the Treatment Plant necessary to provide the total additional capacity requested. Each party requesting additional capacity shall pay its pro-rata share of such enlargement determined by dividing its requested additional capacity by the total additional capacity being provided. Payment of such share shall be made in accordance with Section 6.04 hereof.

(c) In no event shall a party hereto not requesting additional capacity be required to make any payments with respect to any additional capacity provided unless, subsequent to the completion of any such enlargement, such party acquires the right to a portion of the additional capacity provided by the enlargement to the

Treatment Plant by the procedure established in Section 3.04 hereof.

Section 4.08 Sewage Waste Samples. Samples of Sewage Wastes and data from the meter stations may be obtained and analyzed by any party at any place and at any time in order to insure compliance with the terms of this Agreement. Each party hereto shall have the right to have a representative present when such samples and/or data are obtained but such right shall not limit any party's right of access to the metering stations to obtain such samples and/or data.

Section 4.09 Flow Records. For the purpose of determining and calculating the volume and/or character of Sewage Wastes discharged from each party's Sewage Collection System into the Treatment Plant, the following methods shall be used:

(i) All meters shall be inspected, calibrated and tested for accuracy at least semi-annually by Pennridge Authority. Reports of such inspections shall be made directly to both Pennridge Authority and any other party jointly using the meter. The cost of such inspection and the cost of any repair or replacement shall be borne by the Pennridge Authority.

(ii) In the case of missing flow records due to faulty meter registration or otherwise, an estimate of flows will be made, for purposes of determining volume of Sewage Waste discharge. This estimate will be based on an evaluation of past flow records as applied to present conditions and as reviewed and approved by the Pennridge Authority and the party whose flows are in question.

(iii) Meter records and meter installations of one party hereto shall be made available and accessible to any other party hereto upon request therefor. The

record of Sewage Wastes flow through recording meters operated and maintained by one party will be forwarded to any other party requesting the same on or before the fifteenth day of the first month of each calendar quarter showing the total and daily Sewage Wastes flows discharged during the previous quarter.

ARTICLE V

MAINTENANCE, SAVE HARMLESS AGREEMENT

Section 5.01 Facilities Maintained. Each party agrees, in connection with its respective sewer facilities, to continuously operate and keep and maintain the same at all times in first-class repair and order and in good and efficient operating condition and to meet the standards prescribed by the Department of Environmental Resources or of any other governmental authority having jurisdiction thereof.

Section 5.02 Indemnity. Each of the parties hereto agrees to indemnify and save harmless any other party against all losses, costs or damages on account of any injury to persons or property occurring in the performance of this Agreement due to the negligence of any such party, its respective servants, agents or employees, or resulting from the failure of the Treatment Plant, and lines leading thereto, to properly function due to such negligence.

Section 5.03 Pennridge Authority Records. The Pennridge Authority agrees to make available at all reasonable times to each party hereto, its agents, servants, employees and representatives, access to all records of the Pennridge Authority pertaining to cost of acquisition, construction, operation and maintenance of the Treatment Plant.

Section 5.04 Sewage Collection System Records. Each party hereto agrees to make available at all reasonable times to the Pennridge Authority, its agents, servants, employees and representatives access to all records of such party insofar as the same relate to matters covered in this Agreement. Each party hereto also agrees that the Pennridge Authority, its agents, servants, employees and representatives shall have access to each party's Sewage Collection System at reasonable times in order to assure compliance with the terms and provisions of this Agreement.

ARTICLE VI

CHARGES AND PAYMENTS

Section 6.01 Pennridge Authority Services. The services rendered by Pennridge Authority to each party hereto are composed of the following:

(i) The treatment of Sewage Wastes from the respective Sewage Collection System of each party hereto.

(ii) The reservation of a portion of the capacity in the Treatment Plant for treatment of Sewage Wastes for each party hereto in the amounts set forth in Exhibit "B" hereto.

Section 6.02 Treatment Charges. (a) Pennridge Authority will charge each party hereto, quarterly in advance, for the services described in Section 6.01, subsection (i), supra, upon the basis of the actual costs of Pennridge Authority for operation and maintenance of the Treatment Plant less any federal or state grants applicable thereto. Such charges shall be determined by applying the percentage computed by dividing the actual metered flow from each party's respective Sewage Collection System by the total metered flow into the Treatment Plant to the Total Cost of Operating and Maintaining the Treatment Plant. Pennridge Authority's Consulting

Engineers shall estimate, using standard engineering procedures, Sewage Wastes flows to be received from any party's Sewage Collection System until records are available to determine actual metered flows. Said charges, when received, shall be deposited in the Operating Fund created under Section 6.05(b) hereof.

(b) The parties hereto agree that, in the event the Sewage Wastes discharged from any party's Sewage Collection System into the Treatment Plant require special handling or treatment, the total costs incident to providing such special handling or treatment shall be borne solely by the party hereto from whose Sewage Collection System the said Sewage Wastes are being discharged.

Section 6.03 Financial Statement and Records. To the end that the costs upon which the charges imposed under Section 6.02 may be readily ascertained, Pennridge Authority covenants to keep accounting records indicating the basis for these charges. Pennridge Authority also covenants to deliver to each party hereto a copy of its annual financial statement within fifteen (15) days of the receipt thereof from Pennridge Authority's accountant.

Section 6.04 Payment of Capital Costs. (a) In order to reserve the capacity set forth for it in Exhibit "B" hereto or to make any payments pursuant to Sections 4.04, 4.06 or 4.07 hereof, each of the parties hereto shall pay to Pennridge Authority, as a capital contribution, its share of the Total Project Cost of the project in question in any one or more of the following three methods:

(1) Commencing during the first bond year following issuance of Bonds by Pennridge Authority to finance any portion of the Total Project Cost for the applicable project, and each bond year thereafter until all such Bonds issued by Pennridge Authority are retired, redeemed or deemed to be no longer outstanding, each party hereto, whose share of the Total Project Cost, or any portion thereof, is

being funded through the issuance of Bonds by Pennridge Authority, shall pay to Pennridge Authority a sum of money determined by applying the percentage, computed by dividing the amount being financed applicable to said party by the total amount being financed, to the annual Debt Service Requirements on all Bonds, whenever issued, to finance said portion of the Total Project Cost for the applicable project, plus any fixed amount attributable to such Bonds required to be transferred in any such year to any Bond Reserve fund and to any other funds under the terms of any trust indenture or financing agreement executed in connection with such Bonds. The total of such payment shall be decreased by the amount of any federal or state grants, applicable to that portion of the Total Project Cost of the project being financed, received by Pennridge Authority during the then current fiscal year of Pennridge Authority as reimbursement for construction, which grants are not to be credited to maintenance and operation under the terms of this Agreement. The sums due pursuant to this subsection shall be paid in semi-annual installments and shall be received by Pennridge Authority not later than the fifth business day prior to the date on which Pennridge Authority must make the total of such sums available to any trustee, paying agent or disbursing agent under any applicable trust indenture or financing agreement. (ii) Any party hereto may elect to pay to Pennridge Authority a single, lump sum payment to be due the day Pennridge Authority first awards contracts for the construction of the applicable project. The amount of the lump sum payment shall be calculated by applying the percentage, computed pursuant to Section 2.01, 4.04, 4.06 or 4.07, as applicable, to the estimated Total Project Cost for the applicable project, less legal and financing charges with respect to any Bonds issued. The estimated Total Project

Cost for the project contemplated in Section 2.01 hereof, less applicable estimated federal grants and other charges, are set forth in Exhibit "B" hereto, together with each party's share thereof. Any party electing to make payments pursuant to this subsection and in respect of the project contemplated in Section 2.01 hereof shall make such payments to Pennridge Authority not later than November 17, 1975. If any party hereto elects to make payments pursuant to this Section 6.04(a)(ii) but is unable to complete financing arrangements necessary to make the funds available on the date due, said party shall be granted an additional seven day period during which to complete said financing and pay the sums due hereunder; provided, however, all parties hereto agree to such extension of time and provided, further, that any party granted such an extension shall pay to Pennridge Authority, in addition to its share of the Total Project Cost, a sum of money to compensate Pennridge Authority for investment income lost, to be computed by applying the net interest rate being paid for financing by the party granted the extension to the amount of its lump sum payment for the period of time from the due date to the date of actual payment. The parties hereto agree that, in the event any party is granted an extension of time, Pennridge Authority may, on the due date or during the seven day extension, and shall, if the party granted the extension does not make payment on the seventh day after the due date hereunder, borrow sufficient money to fund the payments due from the party granted the extension of time, including sums due in respect of lost investment income, in which case Pennridge Authority shall be reimbursed pursuant to either Section 6.04(a)(i) or Section 6.04(a)(iii).

(iii) Any party hereto may elect to pay to Pennridge Authority a single, lump sum payment subsequent to the date Pennridge Authority issues Bonds to finance any portion of said party's share of the Total Project Cost of the applicable project. The amount of the lump sum payment shall consist of the sum of (1) any payment required pursuant to Section 6.04(b) hereof, and (2) that percentage of the Bonds remaining

outstanding at the time of payment applicable to said party's share of the Total Project Cost financed by the issuance of the Bonds, such percentage to be determined in accordance with the formula set forth in subsection (i) above.

(b) In the event that the party making a payment pursuant to Section 6.04(a)(iii) above has not, by agreement among said party, Pennridge Authority and one or more other parties hereto, made the payments required of it under Section 6.04(a)(i) above, then said party shall pay to Pennridge Authority, at the time of making the payment pursuant to Section 6.04(a)(iii) above, a sum of money equal to the total amount of the payments made prior thereto pursuant to Section 6.04(a)(i) by any other party for or on its behalf. Pennridge Authority shall, within five (5) business days thereafter, distribute to any party hereto, who made payments under Section 6.04(a)(i) for or on behalf of the party making the lump sum payment pursuant to Section 6.04(a)(iii), its share of the amount received hereunder.

Section 6.05 Construction Fund and Operating Fund: (a)

Pennridge Authority shall deposit all amounts delivered by all parties to it pursuant to Section 6.04(a)(ii), except for any sums paid as working capital or operating costs, together with the proceeds of any Bonds issued and all amounts received in payment of federal and state grants allocable to the cost of the applicable project, in a Bank designated by Pennridge Authority in a Treatment Plant Construction Fund (hereinafter called "Construction Fund"). Such Construction Fund moneys shall be held and invested by the Bank on behalf of Pennridge Authority and, to the extent not insured by the Federal Deposit Insurance Corporation or other federal agency or invested as hereinafter provided, shall be continuously secured by the pledge of direct obligations of the United States of America

or of the Commonwealth of Pennsylvania or as otherwise permitted by law, which security shall have an aggregate market value (exclusive of accrued interest) at all times at least equal to the amount of such moneys. Such moneys may be wholly or partially invested by said Bank only in direct obligations of the United States of America and certificates of deposit which shall mature or shall be subject to redemption at the option of the holder not later than the day before such moneys are required to be available. Any securities so purchased shall be a part of the Construction Fund. The interest and income received from time to time upon investments and any profit realized or loss sustained from the sale of such securities shall be added or charged to the Construction Fund and such interest, income, profit or loss shall be considered in the computation of any surplus or deficiency as provided in Section 6.08. Moneys paid pursuant to this Section 6.04(a) shall at all times be segregated in books of account from Pennridge Authority moneys received for any other purpose.

(b) Pennridge Authority shall deposit all amounts delivered by all parties to it as working capital or operating costs in a Bank designated by Pennridge Authority in a Treatment Plant Operating Fund (hereinafter called "Operating Fund"). Said Operating Fund shall be held and invested by said Bank on behalf of Pennridge Authority in the same manner as set forth above for moneys in the Construction Fund. Payments from the Operating Fund shall be made by or at the direction of Pennridge Authority only for or on account of the costs of operating and maintaining the Treatment Plant, including the cost of insurance thereon. Pennridge Authority agrees to keep and maintain accurate records and accounts, available to the parties hereto, showing all receipts and disbursements with respect to the Operating Fund.

Section 6.06 Payments from the Construction Fund. (a)

Pennridge Authority agrees that payments from the Treatment Plant Construction Fund shall be made only upon requisitions, copies of which shall be available to the parties hereto, duly executed by the Chairman, Vice Chairman or other designated representative of Pennridge Authority stating: (a) the amount requested; (b) the obligation for or on account of which the requisition is made, showing separately the total obligation, the amount already paid, if any, and the balance remaining to be paid; (c) the person to whom the payment shall be made and his address; (d) that the item for which requisition is made has not been paid; and (e) that, with respect to a final payment of such item, there are no vendors', mechanics' or other liens or secured transactions which will not be discharged by such payment.

(b) In the case of payments under construction contracts, such requisitions shall also contain a certificate of the Consulting Engineers certifying approval of the requisition and further certifying that such obligation has been properly incurred and is then due and unpaid and that insofar as such obligation was incurred for work, materials, supplies or equipment such work was actually performed or such materials, supplies or equipment were actually installed in or about the construction of the Treatment Plant, or delivered at the site of the work for that purpose, or delivered for fabrication at the place approved by the Consulting Engineers; and that all work done and materials, supplies or equipment furnished for which such obligation was incurred are, in the Consulting Engineers' opinion, in accordance with the plans and specifications.

Section 6.07 Change Orders. Pennridge Authority agrees to notify the parties hereto of all changes or alterations in the Treatment Plant plans and specifications. Pennridge Authority

further agrees that, without the prior approval of the parties hereto, no change or alteration will be made in any of the plans and specifications of the Consulting Engineers, with respect to the Treatment Plant, which will cause the cost of construction to exceed the amount available in the Treatment Plant Construction Fund.

Section 6.08 Completion. Upon completion of the construction of any project, Pennridge Authority shall deliver to each party hereto a certificate of the Consulting Engineers stating: (i) the fact of such completion and (ii) in reasonably itemized form, the actual Total Project Cost of the project, the amount of any applicable insurance proceeds or federal or state grants received or to be received and appropriate adjustments in respect of net income, gain or loss from investment of the Construction Fund. If any party's share of the actual Total Project Cost of any project, except for any amount paid as working capital or operating costs, is less than the total amount deposited by it pursuant to Section 6.04(a)(ii) of this Agreement, the excess of such deposits shall be refunded within forty-five (45) days to such party unless any party, within thirty (30) days of receipt of said certificate, has requested a readjustment or audit and, in the event of such a request, said excess share shall be refunded within fifteen (15) days after the matter is resolved. A deficiency, if any, incurred in accordance with this Agreement shall be charged to and paid by each party hereto in the same percentages as its share of the Total Project Cost and shall be due within forty-five (45) days of notice to pay, unless any party, within thirty (30) days of receipt of said certificate, has requested a readjustment or audit and, in the event of such request, the payment shall be made within fifteen (15) days after the matter is resolved, and if not then paid, shall be subject to interest

at the rate of six per cent (6%) per annum until paid. Prior to completion of the Treatment Plant, Pennridge Authority may make one or more interim distributions on the basis of information then available, which distributions shall be subject to adjustment at the time of final distribution.

Section 6.09 Maintenance Reserve Fund. (a) Upon completion of the construction of the project contemplated in Section 2.01, Pennridge Authority may establish a reserve for contingencies (hereinafter the "Maintenance Reserve Fund") in an amount from time to time to be determined by Pennridge Authority. Said Maintenance Reserve Fund moneys shall be kept separate and apart from all other moneys of Pennridge Authority and may be deposited and invested in the same manner as the Construction Fund above. Any income earned on the deposit or investment of the Maintenance Reserve Fund shall be transferred to the Operating Fund created under Section 6.05 (b) hereof. Each party hereto shall pay to Pennridge Authority the same percentage of the Maintenance Reserve Fund as its Reserved Capacity bears to the total design capacity of the Treatment Plant. Payment of all parties' shares shall be made in single, lump sum payments due one year after receipt of notification, in writing, by Pennridge Authority of the establishment of such Fund, or in five equal annual installments, each installment to be due on the anniversary of such notification. The manner of payment shall be determined by the mutual agreement of all parties hereto, except Pennridge Authority, and, in the event said parties cannot mutually agree, shall be determined by Pennridge Authority.

(b) Disbursements from the Maintenance Reserve Fund shall be made only to pay, or reimburse Pennridge Authority for, the costs of making repairs, alterations, renewals or replacements to or of

the Treatment Plant, not ordinarily payable as current operating and maintenance expenses, or to pay indebtedness of Pennridge Authority incurred therefor.--Pennridge Authority shall keep accurate books and records of all disbursements from the Maintenance Reserve Fund. After any disbursements from said Fund, Pennridge Authority may require all other parties hereto to make up the deficiency thereby created in said Fund in accordance with the manner of payment established in (a) above.

Section 6.10 Audit. The said certificate of the Consulting Engineers as to the actual Total Project Cost of any project and the records from which it is compiled shall be audited by a certified public accountant selected by the Pennridge Authority with the approval of the other parties hereto, and the expense of such audit shall constitute part of the Total Project Cost.

Section 6.11 Sale of Treatment Plant. (a) In the event that Pennridge Authority, at any time, sells the Treatment Plant, Pennridge Authority agrees to reimburse to each party hereto such amounts paid by said party to Pennridge Authority pursuant to Sections 6.04 and 6.08 hereof in accordance with the following procedure:

(i) The proceeds of said sale shall first be applied by Pennridge Authority to retire or redeem such debt incurred by Pennridge Authority with respect to the Treatment Plant as may then be outstanding;

(ii) Such proceeds as may exceed the requirements of subsection (i) above shall be distributed proportionately to each party hereto (or such other municipalities and/or authorities as may have made capital contributions with respect to the Treatment Plant); each such party to receive the same proportion of said excess proceeds as its Reserved Capacity bears to the total design capacity of the Treatment Plant.

(b) Each party hereto agrees that it shall not be entitled to any reimbursement pursuant to sub-section (a) upon the mutual termination of this Agreement pursuant to Section 3.01 hereof unless said termination occurs in conjunction with the sale of the Treatment Plant.

Section 6.12 Industrial Wastes. (a) It is understood and agreed that the sewage treatment charges hereinbefore provided pertain to the treatment of Sanitary Sewage only. Industrial Wastes are usually more concentrated in nature, and as a result, the treatment thereof becomes more complex than treatment with respect to Sanitary Sewage.

(b) The sewer rentals and charges for treatment of Industrial Wastes treated at the Treatment Plant shall be made in accordance with Section 6.02 and in accordance with the rules and regulations to be adopted by Pennridge Authority.

(c) Each party hereto agrees to take appropriate measures to prohibit any connection to its respective Sewage Collection System of any industrial establishment from which Industrial Wastes are or may be discharged into the system, except subject to the following conditions: The industrial establishment shall first make application to the party hereto owning the applicable Sewage Collection System for a permit for such connection. Such application shall state the name and address of the establishment and its location, the nature of its business and the characteristics of the Industrial Wastes which it proposes to discharge. A copy of such application shall be immediately furnished to the Pennridge Authority. Should both of the above parties hereto then agree that the proposed Industrial Wastes may be received into the system, then the party hereto to whom the application shall first have been made shall issue a permit to the industrial establishment. After the Industrial Waste connection has been made, meter readings and Industrial Waste samples shall

be made and taken as hereinafter provided.

Section 6.13 Budget. Pennridge Authority shall prepare, subject to the approval of its Consulting Engineers, and furnish to each of the parties hereto by November 1 of each year, a budget for the next calendar year setting forth (i) Debt Service Requirements, if any, for such year (ii) the estimated Total Cost of Operating and Maintaining the Treatment Plant for such year, and (iii) each party's share of (1) such Total Cost, determined by using the formula set forth in Section 6.02 hereof and (2) such Debt Service Requirements.

Section 6.14 Billing. Bills for one-quarter (1/4) of the charges with respect to the Total Cost of Operating and Maintaining the Treatment Plant, due pursuant to Section 6.13 hereof, shall be delivered by Pennridge Authority to each party hereto on the first day of January, April, July and October. Bills for charges with respect to Debt Service Requirements shall be delivered by Pennridge Authority thirty (30) days prior to the date such payments are due under Section 6.04(a)(i) hereof. The bill delivered to each party on April 1 of each year shall be adjusted to reflect any overpayment or underpayment made by said party for the preceding calendar year. All bills shall itemize what portion of the charges, if any, represent treatment charges, payments with respect to interest and payments with respect to principal.

Section 6.15 Payment of Bills. Bills shall be payable at the office of the Pennridge Authority within thirty (30) days of the date of delivery of the bill. There shall be added a penalty of ten (10) percent to bills remaining unpaid after thirty (30)

days of the date of actual delivery of the bill.

ARTICLE VII

INFILTRATION AND INDUSTRIAL WASTES

Section 7.01 Infiltration/Inflow. (a) Each party hereto agrees that the waters or wastes discharged by any user into its Sewage Collection System shall not contain storm water, sump pump discharges, roof or surface drainage, or any discharges other than Sewage Wastes as herein defined.

(b) The source of excessive infiltration shall be located and corrected in order that the Treatment Plant capacity shall not be needlessly overtaxed.

Section 7.02 Prohibited Discharges. No Industrial Wastes, chemicals or other matter having any one of the following characteristics shall be discharged into any Sewage Collection System with or without pretreatment:

(a) Any liquid or vapor having a temperature higher than 150° F.

(b) Any water or waste which may contain more than 100 parts per million by weight of fat, oil, or grease.

(c) Any gasoline, benzene, naphtha, fuel oil or other inflammable or explosive liquid, solid or gas.

(d) Any garbage that has not been properly shredded.

(e) Any ashes, cinders, sand, mud, straw, wood or metal shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure or any other viscous substance capable of causing obstruction to the flow in the sewer system or other interference with the proper operation of the sewer system.

(f) Any waters or wastes having a pH lower than 6.0 or higher than 8.4 or having any other corrosive property capable of causing damage or hazard to structures, equipment, or personnel of the sewer system.

(g) Any waters or wastes containing a toxic or poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals or create any hazard in the receiving waters of the sewer system. Toxic wastes shall include, but not be limited to, wastes containing cyanide, lead, copper and/or chromium ions.

(h) Any waters or wastes of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment works except as may be approved by Pennridge Authority.

(i) Any noxious or malodorous gas or substance capable of creating a public nuisance.

(j) No rates of flow taking on the proportions of a slug. This applies likewise to Domestic Sewage.

(k) Radioactive materials.

(l) Highly colored wastewaters.

Section 7.03 Industrial Waste Samples. Pennridge Authority or the party hereto owning the Sewage Collection System into which the Industrial Wastes are discharged may request the collection and analysis of samples of Industrial Wastes. This collection and analysis shall be made by or under the supervision of a professional sanitary engineer acceptable to Pennridge Authority and said party. The analysis of samples obtained shall be made in accordance with the latest edition of the Standard Methods for the Examination of Water and Sewage as published by the American Public Health Association.

Section 7.04 Manholes. When required by Pennridge Authority or the party hereto owning the Sewage Collection System into which the Industrial Wastes are discharged, the owner of any property discharging Industrial Wastes into the respective Sewage Collection System shall install a suitable control manhole in the building sewer to facilitate observation, sampling and measurement of the Industrial Wastes. Such manhole, when required, shall be accessible and safely located and shall be constructed in accordance with the plans approved by the parties hereto. The manhole shall be installed by the property owner, at his expense, and shall be maintained by him so as to be safe and accessible at all times.

Section 7.05 Entry to Property. Any party hereto or their or its duly authorized representative or representatives shall, at all reasonable times, be permitted to enter upon all properties jointly used with another party hereto for the purpose of inspection, observation, measurement, sampling and testing in accordance with the provisions and terms of this Agreement.

Section 7.06 Change in Wastes. Each party hereto shall notify Pennridge Authority in writing when it is contemplated that the character of a waste will be altered from that previously discharged into its Sewage Collection System. Such notification shall be made ten (10) days prior to such change to enable the waste to be analyzed, in accordance with Section 7.03, immediately after such change takes place to determine its acceptability.

Section 7.07 Special Treatment. No provisions of this Agreement shall be construed as preventing any special arrangement or agreement between the Pennridge Authority and any other party hereto whereby Industrial Wastes of unusual strength or character may be accepted for treatment; provided, however, that the costs

incident to accepting and treating such Industrial Wastes of unusual strength or character shall be borne by the industrial establishment so discharging.

Section 7.08 Prohibited Connections. No party hereto will connect to its Sewage Collection System any user discharging any Industrial or other process Wastes whose quantity or quality may be deemed to have a deleterious effect on the sewage treatment or sludge handling process or which cannot be processed by the Treatment Plant in the normal and ordinary course of operation.

ARTICLE VIII

PARTICULAR COVENANTS

Section 8.01 Covenants. Upon the execution of this Agreement, each party hereto, other than the Pennridge Authority, covenants as follows:

(a) To maintain its Sewage Collection System in good repair and operating condition, and continuously to operate the same;

(b) To so operate its facilities as to prevent any sludge from collecting therein;

(c) To cause to be enacted and to be kept in force an ordinance compelling all possessors of properties to permit the entries and inspections described in Section 7.05 hereof and imposing a penalty for the interference with any entry and inspection at all reasonable times.

(d) To enact Rules and Regulations using the standards of Section 7.02 hereof.

(e) To collect, on behalf of Pennridge Authority, any Industrial Wastes surcharges established by Pennridge Authority and any Industrial Cost Recovery Charges required

by applicable laws, regulations or agreements to be paid by users of its Sewage Collection System, to promptly notify Pennridge Authority, in writing, of any failure to pay said Charges as required and to take, as directed by Pennridge Authority, or to assist Pennridge Authority in taking, such appropriate legal action as may be required to enforce the collection of said surcharges or Industrial Cost Recovery Charges.

(f) To prohibit all connections to its Sewage Collection System once the maximum hydraulic capacity reserved to it in Exhibit "B" is reached.

ARTICLE IX

PARTICULAR COVENANTS OF PENNRIDGE AUTHORITY

Section 9.01 Pennridge Authority Covenants. Upon the execution of this Agreement, Pennridge Authority covenants as follows:

- (a) To purchase the Treatment Plant for \$203,300; subject, however, to the completion of the necessary financing therefor and the receipt of applicable governmental approvals of the project contemplated in Section 2.01 hereof.
- (b) To diligently proceed with the design, approvals, financing and construction of the enlargements, modifications, additions and improvements to the Treatment Plant which shall be needed to carry and treat up to, but not exceeding, each party's Reserved Capacity.
- (c) To maintain the Treatment Plant in good repair and operating condition and continuously operate the same;
- (d) After completion of the enlargements, modifications, additions and improvements contemplated by this Agreement, to accept and treat the Reserved Capacity of the parties hereto subject to the provisions of this Agreement.

(e) To require capital contributions in accordance with Sections 6.04 and 6.08 hereof and to promptly make the appropriate reimbursement called for therein.

(f) To diligently proceed with the application, processing and obtaining of all federal and state grants.

ARTICLE X

MISCELLANEOUS

Section 10.01 Penalty. When the average of the measured actual daily discharge from the Sewage Collection System of any party hereto, for a period of thirty (30) consecutive days, exceeds its Reserved Capacity, Pennridge Authority shall give to such party three days written notice to terminate such excess discharge and thereafter such party shall pay to Pennridge Authority 125% of the charges imposed pursuant to Section 6.02 hereof with respect to the treatment of such excess for each such day, plus any fines levied by the Pennsylvania Department of Environmental Resources due to such excess discharge, until such time as the average of the measured actual daily discharge of such party over a period of thirty (30) consecutive days is reduced below the level of said Reserved Capacity. In the event such excess discharge is not terminated within ninety (90) days of receipt of the notice to terminate, the penalty for treating such excess shall be increased from 125% to 150% for each day thereafter until said excess is terminated. Such penalties received by Pennridge Authority shall be credited by Pennridge Authority against the payments with respect to operating and maintaining the Treatment Plant due from the parties hereto not exceeding their Reserved Capacity, each party to receive the same proportion of the penalties received as its unused Reserved Capacity bears to the total unused treatment

capacity in the Treatment Plant.

Section 10.02 Notice of Use. Pennridge Authority agrees to advise all parties hereto, in writing, the first time the flow of Sewage Wastes from any party's Sewage Collection System is approximately 85% of its Reserved Capacity.

Section 10.03 Inspection of Books and Records. Each party hereto, by a duly authorized representative, shall have the right at any time during business hours to inspect the books and records of any other party in order to ascertain the correctness of any figures used in computing the liability of any party to any other party.

Section 10.04 Waiver of Rights. The failure of any party hereto to insist upon strict performance of this Agreement or any of the terms or conditions thereof shall not be construed as a waiver of any of its rights hereunder.

Section 10.05 Modification. This writing constitutes the entire Agreement between the parties as to the treatment of Sewage Wastes and there are no other representations or agreements, verbal or written other than those contained herein. This Agreement may only be modified, amended or supplemented by the written agreement of all the parties hereto.

Section 10.06 Addresses. Whenever a notice is required to be given by mail, the following addresses shall be used unless a different address is specifically called for:

Perkasie Borough Authority	:	219 S. 7th St., Perkasie, Pa. 18944
Borough of Sellersville	:	Church Street, Sellersville, Pa. 18960
Telford Borough Authority	:	Borough Building, Penn Street, Telford, Pa. 18969
Borough of Silverdale	:	c/o Millard Tyson, 112 E. Main St. Silverdale, Pa. 18962
Hilltown Township	:	113 State St., Blooming Glen, Pa. 18911
Township of East Rockhill	:	1622 Ridge Rd., Perkasie, Pa. 18944
Pennridge Authority	:	607 Chestnut St., Perkasie, Pa. 18944

Section 10.07 Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be properly executed by the parties hereto and all of which shall be regarded for all purposes as one original and all of which shall constitute and be but one and the same.

Section 10.08 Necessity of Permits. In the event that the Department of Environmental Resources of the Commonwealth of Pennsylvania or any other regulatory body or governmental agency shall fail or refuse to issue any permits which may be necessary to accomplish the intent and purpose of this Agreement, then the parties hereto shall be relieved from further compliance with the terms of this Agreement until such time when such permit or permits shall be issued; and then this Agreement shall become operative and the parties hereunder shall be bound by the terms of this Agreement.

Section 10.09 Restructuring Pennridge Authority. All parties to this Agreement, other than Pennridge Authority, enter into it in reliance upon a Resolution enacted by the Borough Council of the Borough of Perkasio on October 27, 1975, providing that voting representation on the Pennridge Authority from the time this Agreement is executed and the capital contributions are paid shall be three representatives from Perkasio, two from Sellersville, and one each from Silverdale, Hilltown, East Rockhill and Telford and that, when all municipalities become customers of Pennridge Authority paying for the treatment of sewage, Pennridge Authority shall be restructured so that there shall be one voting representative from each of the following municipalities: Perkasio, Sellersville, Silverdale, Telford, East Rockhill and Hilltown. All parties agree to use their best efforts to cause this restructuring promptly.

T

Section 10.10 Severability. Should any one or more of the provisions of this Agreement for any reason be held illegal, invalid or unenforceable, such illegality, invalidity or unenforceability shall not affect any other provision of this Agreement and this Agreement shall, in such circumstances, be construed and enforced as if such illegal, invalid or unenforceable provision had not been contained herein.

Section 10.11 Joinder of Authority. A municipality authority formed by any municipality who is a party hereto may undertake, perform or do any action required hereunder to be done by said municipality and succeed to all of said municipality's rights, liabilities and obligations hereunder; provided, however, such municipality authority shall have first joined in this Agreement by the execution of an instrument of joinder satisfactory in form to Pennridge Authority.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed and their respective corporate seals affixed the day and year first above written.

ATTEST:

Robert S. Nese
Secretary

PENNRIDGE WASTEWATER TREATMENT
AUTHORITY

By: [Signature]

ATTEST:

Joseph L. Stetson
Secretary

PERKASIE BOROUGH AUTHORITY

By: [Signature]

ATTEST:

P. D. Cell
Secretary

BOROUGH OF SELLERSVILLE

By: [Signature]

TELFORD BOROUGH AUTHORITY

ATTEST:

[Signature]
Secretary

By: *[Signature]*

BOROUGH OF SILVERDALE

ATTEST:

[Signature]
Secretary

By: *[Signature]*

HILLTOWN TOWNSHIP

ATTEST:

[Signature]
Secretary

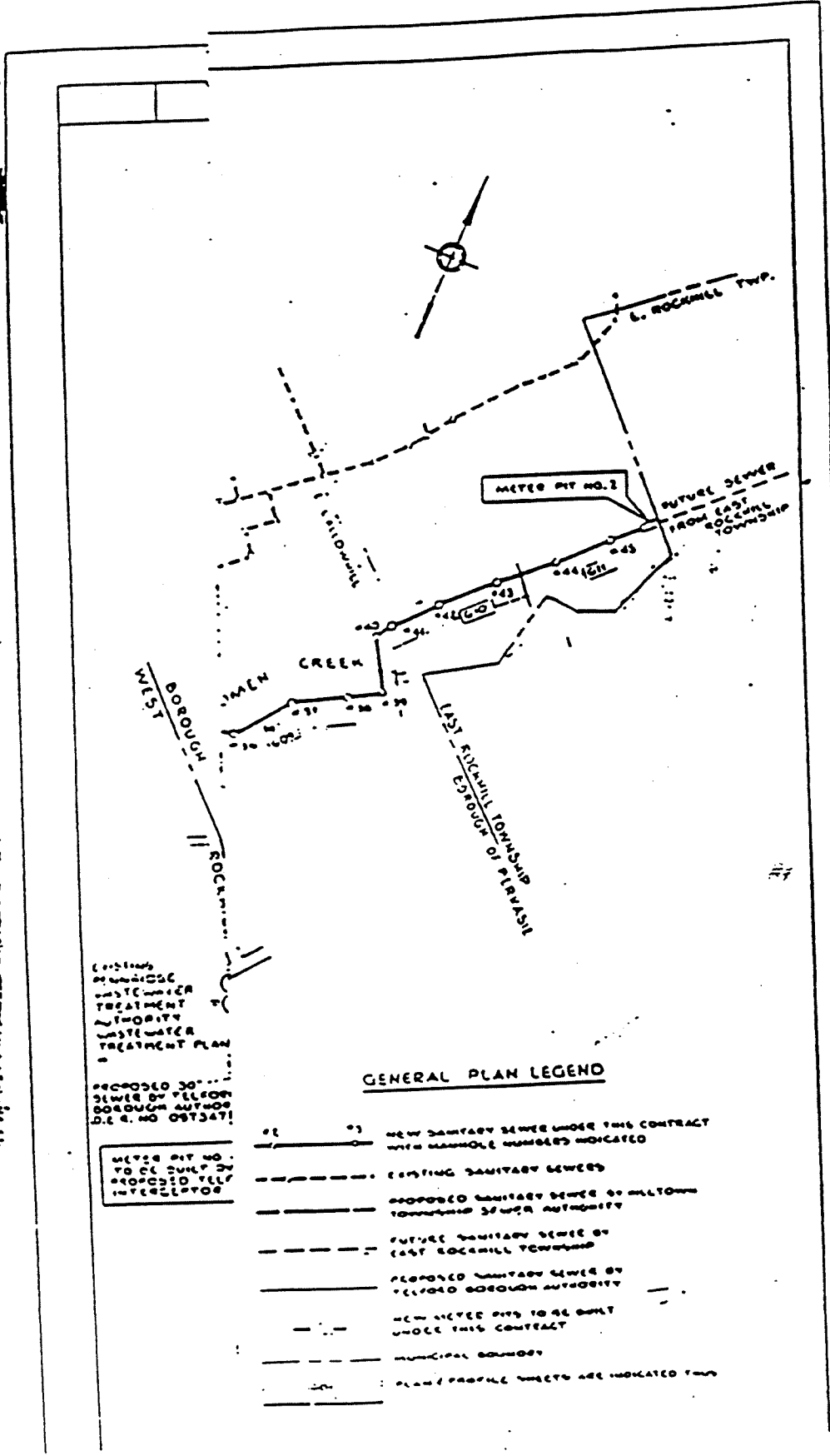
By: *[Signature]*

TOWNSHIP OF EAST ROCKHILL

ATTEST:

[Signature]
Secretary

By: *[Signature]*



EXISTING
PROPOSED
SANITARY
SEWER
TREATMENT
PLANT
TREATMENT
PLANT
TREATMENT
PLANT

PROPOSED 30"
SEWER BY TELFORD
BOROUGH AUTHORITY
D.E. NO. 087347

METER PIT NO. 2
TO BE BUILT BY
PROPOSED TELFORD
BOROUGH AUTHORITY

GENERAL PLAN LEGEND

- NEW SANITARY SEWER UNDER THIS CONTRACT WITH MANHOLE NUMBERS INDICATED
- EXISTING SANITARY SEWERS
- PROPOSED SANITARY SEWER TO MILLTOWN TOWNSHIP SEWER AUTHORITY
- FUTURE SANITARY SEWER BY EAST ROCKMILL TOWNSHIP
- PROPOSED SANITARY SEWER BY TELFORD BOROUGH AUTHORITY
- - - - - NEW METER PIT TO BE BUILT UNDER THIS CONTRACT
- MUNICIPAL BOUNDARY
- PLAN PROFILE SHEETS ARE INDICATED THIS WAY

ACQUISITION AND IMPROVEMENT OF WASTEWATER TREATMENT PLANT
PROJECT COST ESTIMATE

Total
Project Costs

<u>Construction Costs</u>		
Contract No. 4 - Structural & Mechanical		\$4,884,900
Contract No. 5 - Electrical		<u>405,000</u>
<u>Total Construction Costs</u>		<u>\$5,289,900</u>
<u>Transfer of Existing Perkasic Wastewater Treatment Plant</u>		\$ 203,300
<u>Total Pennridge Engineering Costs</u>	\$549,846	
<u>Less: Prepaid Engineering Costs</u>	<u>114,109</u>	
<u>Net Engineering Costs Payable</u>		\$ 435,737
<u>Perkasic Infiltration/Inflow Work</u>		\$ 539,728
<u>Sellersville Infiltration/Inflow Work</u>		\$ 38,900
<u>Telford Pumping Station Redesign</u>		\$ 4,049
<u>Reimbursement to Perkasic for Prepaid Engineering Costs</u>		\$ 114,109
<u>Local Counsel</u>		\$ 15,600
<u>Bond Counsel</u>		\$ 10,000
<u>Interest on Interim Financing</u>		\$ 43,500
<u>Interest on Perkasic Loan</u>		\$ 13,000
<u>Financial Advisor</u>		\$ 5,000
<u>Working Capital</u>		\$ 20,000
<u>Contingency</u>		<u>\$ 262,693</u>
 <u>TOTAL PROJECT COSTS</u>		 <u>\$6,995,516</u>
<u>Less:</u>		4,573,500
Federal Share		
Engineering Costs Attributable to Perkasic Borough Authority		524,409
Engineering Costs Attributable to Borough of Sellersville		9,725
Engineering Costs Attributable to Borough of Telford		<u>1,013</u>
 <u>NET PROJECT COSTS</u>		 <u>\$1,886,869</u>

<u>Municipality</u>	<u>RESERVED CAPACITY *</u>			<u>Percent of Design Total</u>	<u>Share of Net Project Costs</u>
	<u>Hydraulic (MGD)</u>	<u>BOD (lbs./day)</u>	<u>S. S. (lbs./day)</u>		
East Rockhill	.371	618.3	741.6	9.27%	\$ 174,913
Hilltown	.318	530.3	636.0	7.95%	150,006
Perkasic	1.427	2,379.2	2,853.6	35.67%	673,046
Sellersville	1.142	1,905.6	2,285.6	28.57%	539,078
Silverdale	.106	176.7	212.0	2.65%	50,002
Telford	.636	1,059.9	1,271.2	15.89%	<u>299,821</u>
TOTAL	4.000	6,670.0	8,000.0	100.00%	<u>\$1,886,869</u>

2.04 (c)

JOINDER OF HILLTOWN TOWNSHIP SEWER AUTHORITY
AS A PARTY TO THE PENNRIDGE WASTEWATER TREAT-
MENT AUTHORITY TREATMENT PLANT AGREEMENT AND
TO THE SOUTH SIDE INTERCEPTOR AGREEMENT

WHEREAS, on November 1, 1975, the Township of Hilltown became a party to two executed documents known as the Pennridge Wastewater Treatment Authority Treatment Plant Agreement (Treatment Agreement) and the South Side Interceptor Agreement (Interceptor Agreement) respectively; and

WHEREAS, Section 10.11 of the Treatment Agreement and Section 10.10 of the Interceptor Agreement provide for the joinder of a municipal authority formed by any municipality who is a party to said Agreements and said authority may undertake, perform or do any action required by said Agreements to be done by said municipality and shall succeed to all of said municipality's rights, liabilities and obligations under said Agreements; and

WHEREAS, the Hilltown Township Sewer Authority has been formed by the Township of Hilltown and desires to join in the hereinabove mentioned Agreements.

NOW THEREFORE, this 12th day of October, 1977, it is hereby resolved as follows:

1. The Hilltown Township Sewer Authority, formed by Hilltown Township, desires to join in the Treatment Authority and in the Interceptor Agreement.

2. The Hilltown Township Sewer Authority hereby agrees to abide by all provisions of both the Treatment Agreement and the Interceptor Agreement and hereby assumes and succeeds to all of Hilltown Township's rights, liabilities and obligations under said Agreements.

IN WITNESS WHEREOF, the Hilltown Township Sewer Authority hereby has caused this Joinder to be executed this 12th day of October, 1977.

HILLTOWN TOWNSHIP SEWER AUTHORITY

By William M. Biele
Chairman

Attest:

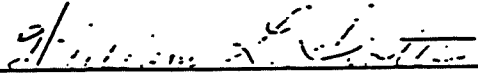
William M. Biele
Secretary

CONSENT

AND NOW this 24th day of October, 1977, the Penridge Wastewater Treatment Authority hereby accepts the Joinder of the Hilltown Township Sewer Authority as a party to the Penridge Wastewater Treatment Plant Agreement and to the South Side Interceptor Agreement and consents to the same.

PENNRIDGE WASTEWATER TREATMENT AUTHORITY

By



Attest:



ORDINANCE NO. 172

AN ORDINANCE AMENDING THE EAST ROCKHILL TOWNSHIP ZONING ORDINANCE OF 1987, AS AMENDED, AMENDING THE ZONING MAP OF EAST ROCKHILL TOWNSHIP REZONING A PORTION OF THE C-E (CULTURAL/EDUCATIONAL) ZONING DISTRICT TO RA (RESIDENTIAL AGRICULTURAL) ZONING DISTRICT

Preamble

The East Rockhill Township Board of Supervisors, upon review by the East Rockhill Township Planning Commission and the Bucks County Planning Commission, hereby adopts the following ordinance amending the East Rockhill Township Zoning Map.

ARTICLE I.

The Zoning Map of East Rockhill Township is hereby amended, rezoning the following tax map parcels from Cultural/Educational (C-E) to Residential Agrigultural (RA), as shown on the attached Exhibit "A":

Tax Parcel No. 12-14-23, property of Naomi Kraus.

Tax Parcel No. 12-14-23-2, property of Perkasio Borough Industrial Development Authority.

Tax Parcel No. 12-14-23-3, property of Willard G. and Elaine Wismer.

Tax Parcel No. 12-14-23-4, property of Kenenth and Anna Mae Texter.

Tax Parcel No. 12-14-23-5, property of William F. Pilgermayer, Jr.

Tax Parcel No. 12-14-23-6, property of John and Margaret Hensel.

Tax Parcel No. 12-14-24, property of Pennridge Waste-water Treatment Authority.

ARTICLE II.

All ordinances and maps or parts of ordinances and maps which are inconsistent herewith are repealed to the extent of such inconsistency.

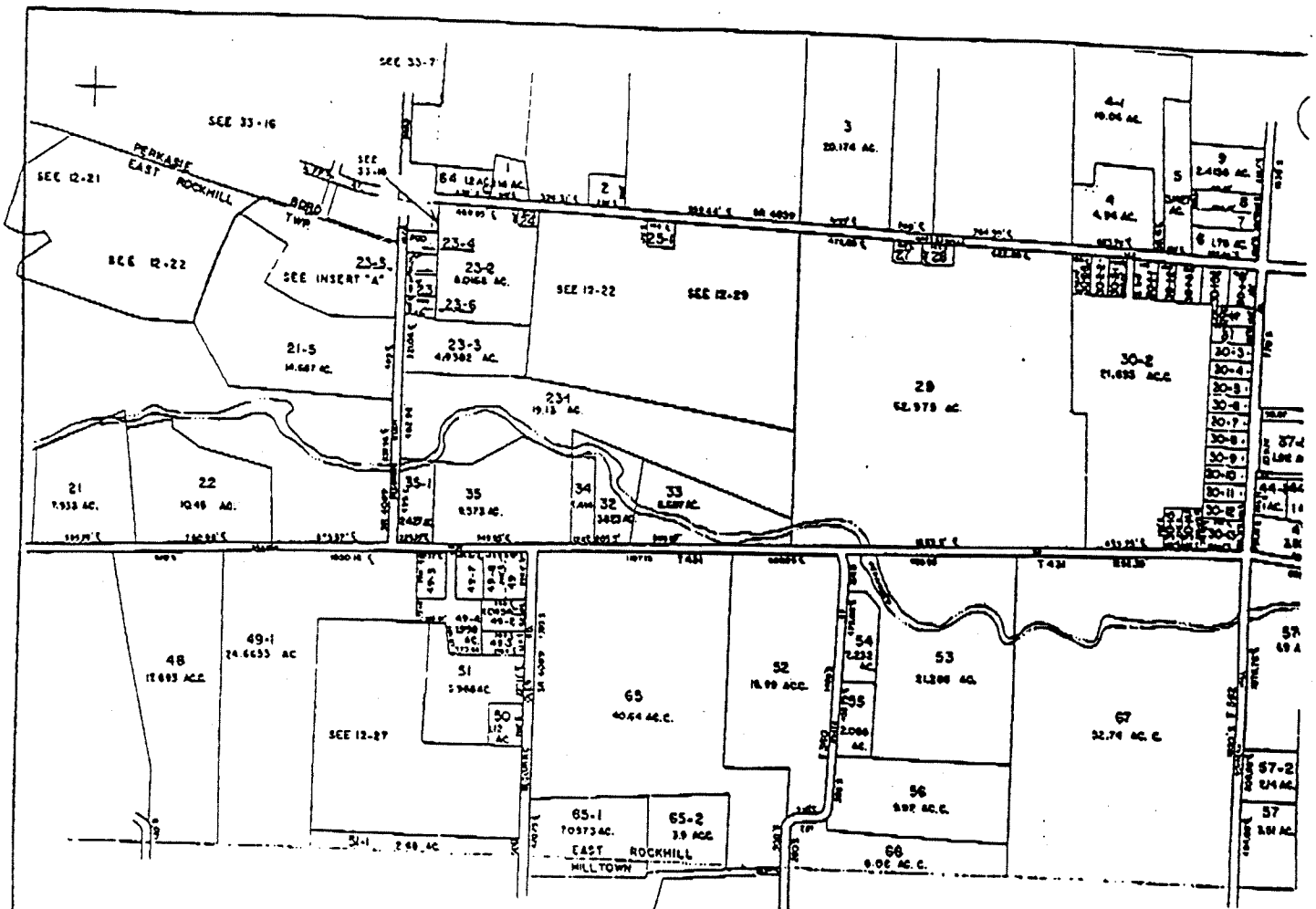
ARTICLE III.

If any sentence, clause, section, or part of this ordinance is for any reason found to be unconstitutional, such infirmity shall not effect or impair the remaining provisions, sentences, clauses, sections or parts of this ordinance.

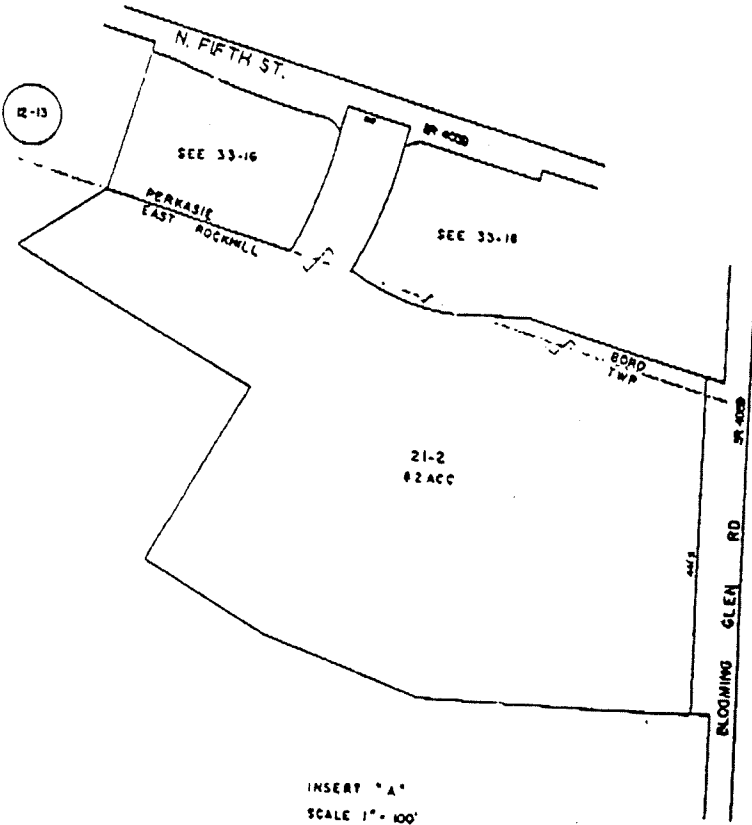
SO ORDAINED this
15th day of
October, 1991.

EAST ROCKHILL TOWNSHIP
BOARD OF SUPERVISORS

Larry W. Volante
John R. Cassman
Roger E. Arnold



BUCKS COUNTY TAX MAP



INSERT "A"
SCALE 1" = 100'

ORDINANCE NO. 148

ORDINANCE AMENDING THE EAST ROCKHILL TOWNSHIP ZONING ORDINANCE OF 1987, AS AMENDED, AMENDING THE ZONING MAP OF EAST ROCKHILL TOWNSHIP TO EXPAND THE COMMERCIAL ZONING DISTRICTS OF THE TOWNSHIP; TO PROVIDE FOR ADDITIONAL DISTRICTS WITHIN THE TOWNSHIP FOR MOBILE HOME PARKS, LIFE CARE FACILITIES AND FULL CARE FACILITIES

Preamble

The East Rockhill Township Board of Supervisors, upon review by the East Rockhill Township Planning Commission and the Bucks County Planning Commission, and pursuant to Section 609.2 of the Pennsylvania Municipalities Planning Code, hereby adopts the following Ordinance amending the East Rockhill Township Zoning Ordinance, as amended.

ARTICLE I.

Section 306 - Table of Use Regulations is hereby amended by changing certain specific uses as set forth below from permitted by right to permitted by conditional use to read as follows:

Section 306 - Table of Use Regulations

Table with columns: RP, RA, S, R-1, VR, VC, C-E, C-O, I, E. Rows include Agricultural Uses (A4 Forestry, A10 Kennel-Noncommercial) and Residential Uses (B4 Mobile Home Park, B6 Life Care Facility, B7 Full Care Facility).

		<u>RP</u>	<u>RA</u>	<u>S</u>	<u>R-1</u>	<u>VR</u>	<u>VC</u>	<u>C-E</u>	<u>C-O</u>	<u>I</u>	<u>E</u>
F.	Commercial & Consumer Service Uses										
F4	Adult Commercial	N	N	N	N	N	N	N	C	N	N
F14	Theater	N	N	N	N	N	N	N	C	N	N
F16	Amusement Halls and Arcades	N	N	N	N	N	N	N	C	N	N
F17	Outdoor Entertainment	N	N	N	N	N	N	N	C	C	N
F30	Shopping Center	N	N	N	N	N	N	N	C	N	N
I.	General Accessory Uses & Structures										
I2	Outside Storage or Display	N	N	N	N	N	N	N	C	P	P
I8	Towers, Masts, Etc.	C	C	C	C	C	C	C	C	P	P

ARTICLE II.

Section 601 - Use Regulations is hereby amended, adding the following additional uses to subsection b.:

Section 601 - Use Regulations

b. Uses Permitted by Conditional Use

- (11) B6 Life Care Facility
- (12) B7 Full Care Facility

ARTICLE III.

A. Section 401 - Use Regulations is hereby amended by revising subsections a. and b., eliminating Section 401a.(24) I8 Towers, Masts, Etc. as a use permitted by right and including use I8 in Section 401b. as a use permitted by conditional use as follows:

Section 401 - Use Regulations

b. Uses Permitted by Conditional Use

- (14) I8 Towers, Masts, Etc.

B. Section 501 - Use Regulations is hereby amended by revising subsections a. and b., eliminating Section 501a.(24) I8 Towers, Masts, Etc. as a use permitted by right and including use I8 in Section 501b. as a use permitted by conditional use as follows:

Section 501 - Use Regulations

b. Uses Permitted by Conditional Use

(14) I8 Towers, Masts, Etc.

C. Section 601 - Use Regulations is hereby amended by revising subsections a. and b., eliminating Section 601a.(14) I8 Towers, Masts, Etc. as a use permitted by right and including use I8 in Section 601b. as a use permitted by conditional use as follows:

Section 601 - Use Regulations

b. Uses Permitted by Conditional Use

(11) I8 Towers, Masts, Etc.

D. Section 701 - Use Regulations is hereby amended by revising subsections a. and b., eliminating Section 701a.(20) I8 Towers, Masts, Etc. as a use permitted by right and including use I8 in Section 701b. as a use permitted by conditional use as follows:

Section 701 - Use Regulations

b. Uses Permitted by Conditional Use

(9) I8 Towers, Masts, Etc.

E. Section 801 - Use Regulations is hereby amended by revising subsections a. and b., eliminating Section 801a.(17) I8 Towers, Masts, Etc. as a use permitted by right and including use I8 in Section 801b. as a use permitted by conditional use as follows:

Section 801 - Use Regulations

b. Uses Permitted by Conditional Use

(9) I8 Towers, Masts, Etc.

F. Section 901 - Use Regulations is hereby amended by revising subsections a. and b., eliminating Section 901a.(17) I8 Towers, Masts, Etc. as a use permitted by right and including use I8 in Section 901b. as a use permitted by conditional use as follows:

Section 901 - Use Regulations

b. Uses Permitted by Conditional Use

(11) I8 Towers, Masts, Etc.

G. Section 1001 - Use Regulations is hereby amended by revising subsections a. and b., eliminating Section 1001a.(24) I8 Towers, Masts, Etc. as a use permitted by right and including use I8 in Section 1001b. as a use permitted by conditional use as follows:

Section 1001 - Use Regulations

b. Uses Permitted by Conditional Use

(10) I8 Towers, Masts, Etc.

H. Section 1101 - Use Regulations is hereby amended by revising subsections a. and b., eliminating Section 1101a.(28) I8 Towers, Masts, Etc. as a use permitted by right and including use I8 in Section 1101b. as a use permitted by conditional use as follows:

Section 1101 - Use Regulations

b. Uses Permitted by Conditional Use

(8) I8 Towers, Masts, Etc.

ARTICLE IV.

Section 1101 - Use Regulations a. and b. is hereby amended by changing certain specific uses from permitted by right to permitted by conditional use to read as follows:

Section 1101 - Use Regulations

a. Uses Permitted by Right

- (1) D3 Private Club
- (2) E1 Medical Office
- (3) E3 Office

- (4) E4 Office Park
- (5) F1 Commercial School
- (6) F2 Day Care Center
- (7) F3 Retail Store
- (8) F6 Service Business
- (9) F7 Financial Establishment
- (10) F8 Funeral Home
- (11) F9 Eating Place
- (12) F10 Drive-Ins & Other
- (13) F12 Repair Shop
- (14) F15 Indoor Athletic Club
- (15) F26 Automobile Sales
- (16) F28 Automotive Accessories
- (17) F32 Dwelling in Combination
- (18) F33 Nonresidential Conversion
- (19) I1 Non Residential Accessory Building
- (20) I9 Off-Street Parking
- (21) I10 Signs

b. Uses Permitted by Conditional Use

- (1) D1 Recreational Facility
- (2) D2 Private Recreational Facility
- (3) G1 Utilities
- (4) G2 Emergency Services
- (5) G3 Terminal
- (6) I3 Temporary Structure
- (7) I4 Temporary Community Event
- (8) A4 Forestry
- (9) A10 Kennel-Noncommercial
- (10) F4 Adult Commercial
- (11) F14 Theater
- (12) F16 Amusement Halls & Arcades
- (13) F17 Outdoor Entertainment
- (14) F30 Shopping Center
- (15) I2 Outside Storage & Display
- (16) I8 Towers, Masts, Etc.

ARTICLE V.

Section 1301 - Use Regulations is hereby amended, adding the following additional use to subsection b.:

Section 1301 - Use Regulations

b. Uses Permitted by Conditional Use

- (4) B4 Mobile Home Park

ARTICLE VI.

The Zoning Map of East Rockhill Township is hereby amended, creating two (2) new Commercial Office Zoning Districts (C-O) as shown on the attached Exhibits "A" and "B".

A. Exhibit "A" includes the following tax parcels:
12-5-49, 12-5-50, 12-5-51 and 12-5-72.

B. Exhibit "B" includes the following tax parcels:
12-9-188, 12-9-188-2, 12-9-232, 12-9-259, 12-9-260 and
12-9-260-2.
260

C. The Zoning Map of East Rockhill Township is hereby further amended, expanding the existing Village Commercial Zoning District (VC) as shown on the attached Exhibit "C" to include the following tax parcels: 12-14-15, 12-14-15-1 and 12-14-15-2.

ARTICLE VII.

All ordinances, parts of ordinances and amendments thereof are ~~appealed~~ insofar as they are inconsistent with this Ordinance. *Repealed*

ARTICLE VIII.

If any sentence, clause, section or part of this Ordinance is for any reason found to be unconstitutional, illegal or invalid, such unconstitutionality, illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections or parts of this Ordinance.

ARTICLE IX.

This Ordinance shall become effective immediately.

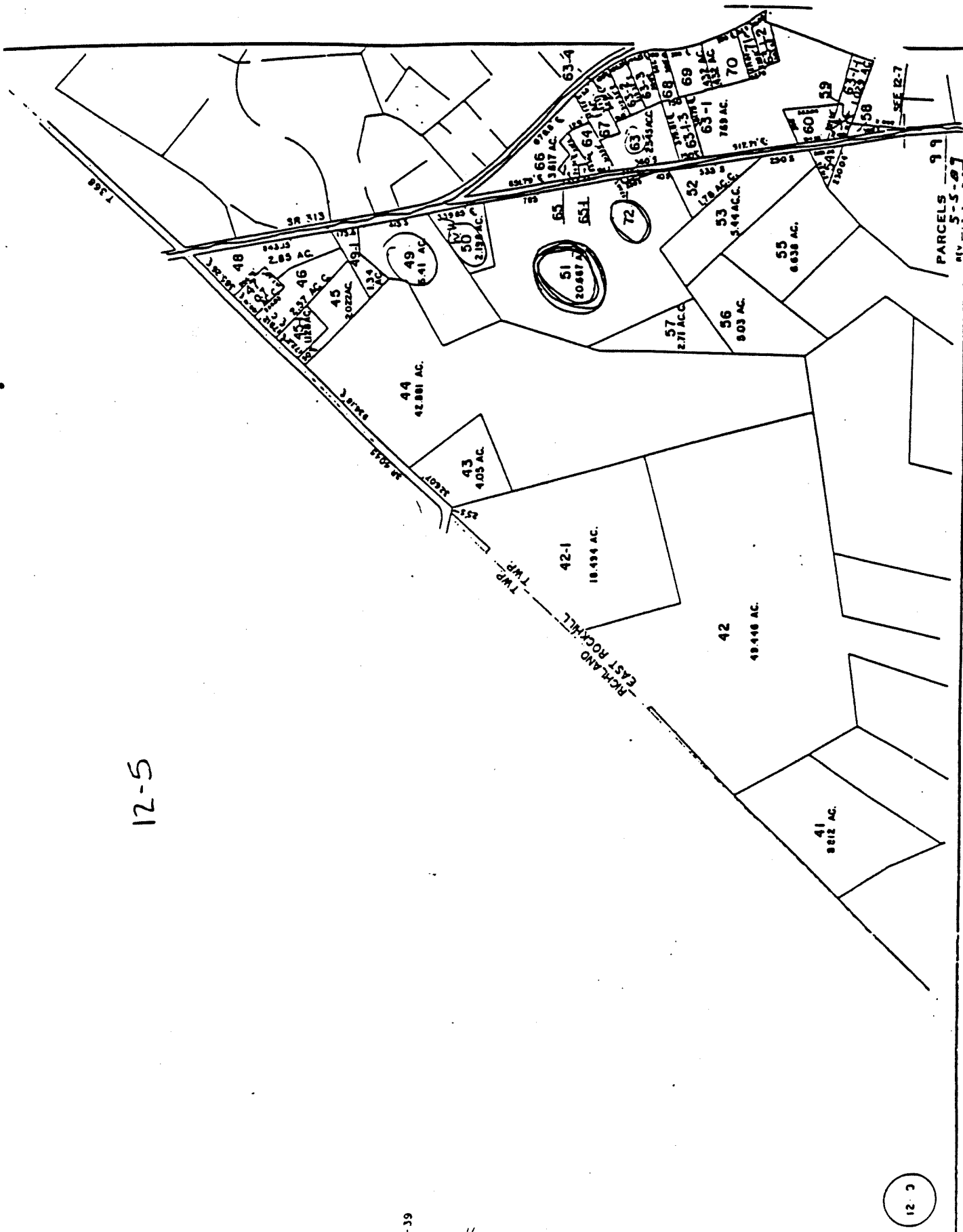
ENACTED and ORDAINED this 20 day of *October*, A.D., 1992.

EAST ROCKHILL TOWNSHIP
BOARD OF SUPERVISORS

12-5

16-39

"A"



SCALE: 1"=400'

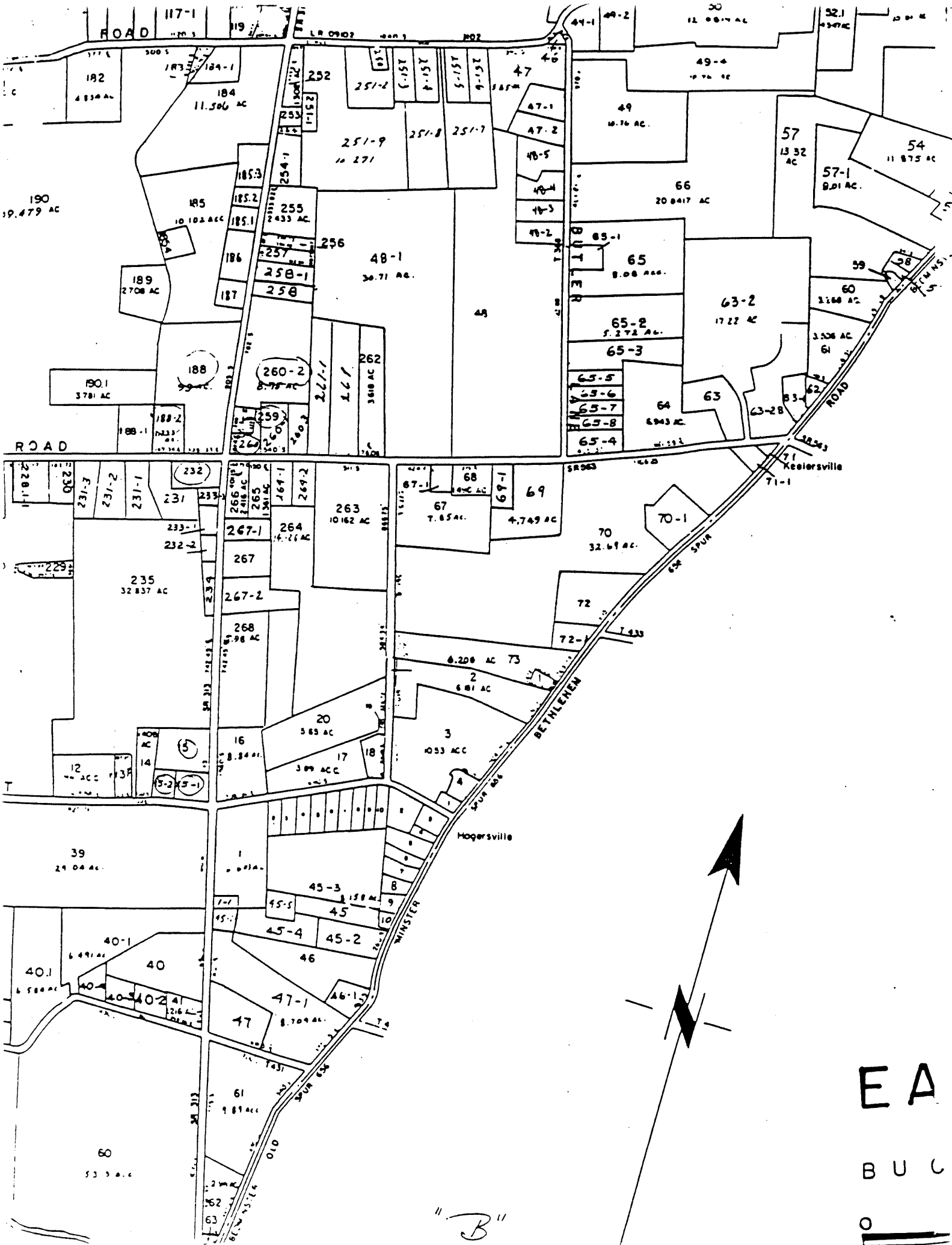
PARCELS 99

5-5-07

SEE 12-7

THIS MAP PREPARED FOR ASSESSMENT PURPOSES ONLY. IT IS NOT A PROPERTY MAP AND IS NOT DESIGNED TO PROVIDE ENGINEERING DATA. 12-5

12-3

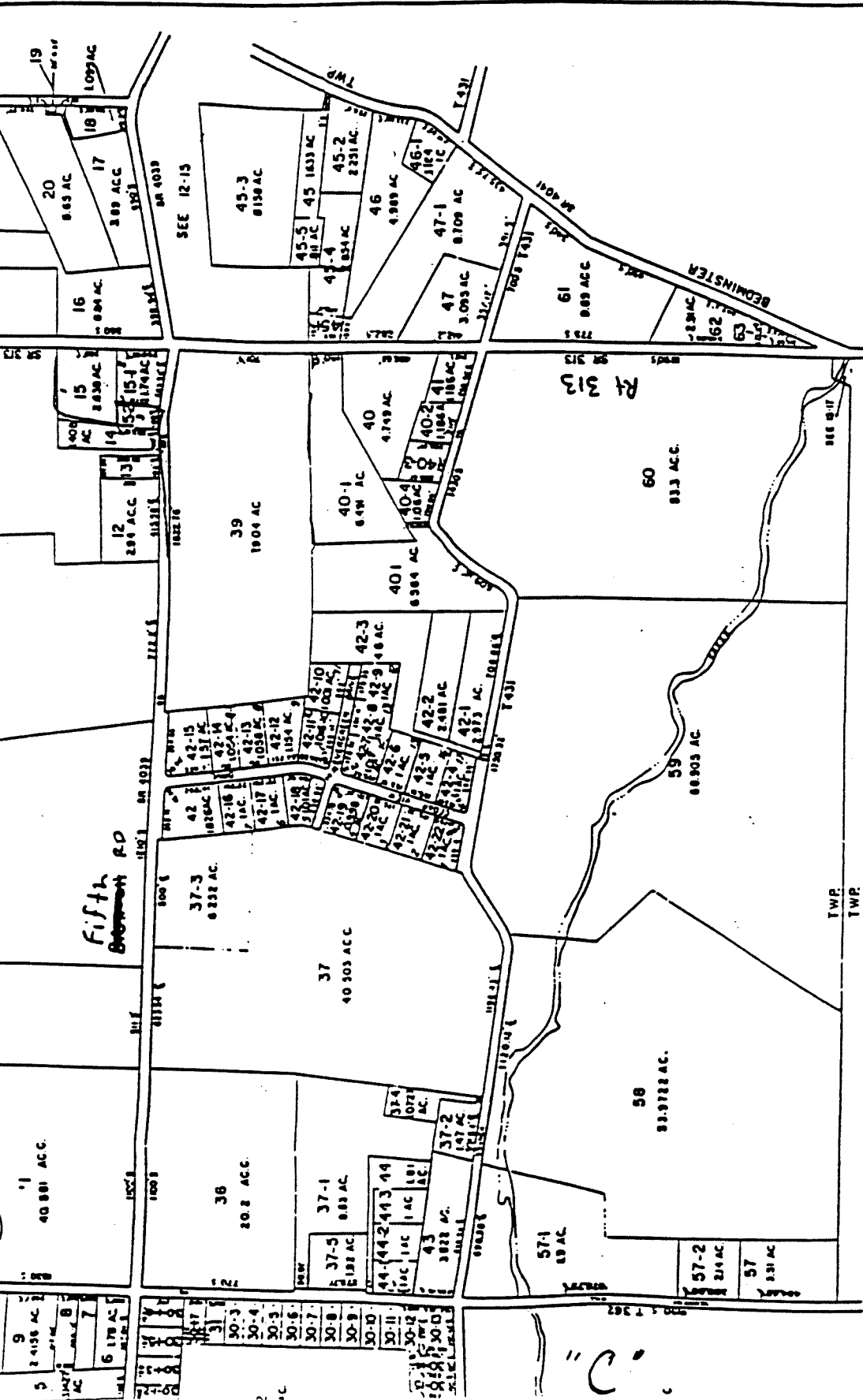


EA
 BUC
 O

"B"

12-14

12-3



SEE 1-4

12-16

ORDINANCE NO. 150

AN ORDINANCE AMENDING THE EAST ROCKHILL TOWNSHIP ZONING ORDINANCE OF 1987, AS AMENDED, AMENDING THE ZONING MAP OF EAST ROCKHILL TOWNSHIP TO EXTEND THE R-1 RESIDENTIAL ZONING DISTRICT WITHIN THE TOWNSHIP; AND TO PROVIDE FOR NEW USES AND DIMENSIONAL REGULATIONS WITHIN THE R-1 RESIDENTIAL ZONING DISTRICT

ARTICLE I.

Section 304 B3 k. is hereby revised to read as follows:

B3 k. Village Townhouse - An attached dwelling unit from ground to roof having individual outside access. A row of attached townhouses shall not exceed eight (8) dwelling units. Village Townhouses shall be served by alleys. No driveways or parking areas shall be permitted within the front yard area of a Village Townhouse. Village Townhouses are a separate and distinct use from townhouses.

(1) Dimensional Requirements:

Minimum lot area:	2,500 sq. ft.
Minimum lot width:	20 ft.
Maximum building coverage:	50% (ratio to lot area)
Minimum building setback:	
Street	15 ft.
Parking area	10 ft.
Pedestrian walkway	5 ft.
Alley	10 ft.
Minimum front yard:	15 ft.
Minimum rear yard:	40 ft.
Minimum side yard (end units)	15 ft.

* Alley right-of-way shall be included in determination of lot area.

(2) Each unit shall include one or more of the following characteristics:

(a) A shared detached two (2) car garage centered on the side lot line and fronting on an alley. Garage must include center partition wall.

(b) A shared five (5) feet by ten (10) feet long (minimum dimensions) storage unit centered on the side lot line and attached to the dwelling unit. [Total width of storage unit must be at least ten (10) feet.] Independent access to the storage unit shall be provided for each lot.

(c) Individual walkout basement access.

(3) Every two (2) Village Townhouse units must be staggered (front and rear building wall) at least two (2) feet.

(4) Parking of vehicles shall be permitted in the rear yard within thirty (30) feet of the alley centerline only.

ARTICLE II.

Section 304 B3 is further revised as follows:

Section 304 B3 k. is hereby renumbered to Section 304 B3 l.

Section 304 B3 l. is hereby renumbered to Section 304 B3 m. and is amended to read as follows:

m. Performance Standards. The following requirements apply to subsection a. through m.

<u>District</u>	<u>Min. Site Area (acres)</u>	<u>Max. Density (du/ac)</u>	<u>Min. Open Space (%)</u>	<u>Max. Imp. Surface (%)</u>	<u>Dwelling Types</u>
S	10	2.0	50	20	Detached, Off-Center, Village House
R-1	5	3.0	35	25	All
VR	5	3.0	25	30	Detached, Off-Center, Village House, Twin, Duplex

ARTICLE III.

Section 304 B3 m. is hereby renumbered to Section 304 B3 n. and further revised to read as follows:

Dwelling Unit Mix. A mix of dwelling unit types is necessary to promote a balanced community. Therefore, a mix is required based on the number of dwelling units as set forth in the accompanying table:

<u>Number of Dwellings in Development</u>	<u>Min. Required No. of D.U. Types</u>	<u>Max. Percent of any D.U. Type</u>	<u>Min. Percent of any D.U. Type</u>
1 - 150	1	100%	25%
151 - 400	2	65%	10%
400 or more	3	40%	5%

ARTICLE IV.

Section 304 B3 n. is hereby renumbered to Section 304 B3 o. and revised to read as follows:

Parking Requirements

(1) Off-street parking:

<u>Dwelling Type</u>	<u>Min. Number of Spaces</u>
Detached Dwelling, Detached Dwelling - Off Center, Village House, Twins, Duplex, Patio House, Atrium House	2
Multiplex, Weak-Link Townhouse, Townhouse, Village Townhouse, Apartment	
Efficiency	1
3 BR or less	2
4 BR or more	3

(2) Spillover Parking*

<u>Dwelling Type</u>	<u>Min. Number of Spaces</u>
Detached Dwelling, Detached Dwelling-Off Center, Village House, Twins, Duplex, Patio House, Atrium House	2
Multiplex, Weak-Link Townhouse, Townhouse, Village Townhouse, Apartment	1.5

* Spillover Parking may be located on-lot, within common parking areas, or on-street. Where determination of the number of spaces results in a requirement of a fractional space, any fraction of one-half or less may be disregarded, while a fraction in excess of one-half or more shall be counted as one parking space.

ARTICLE V.

Section 304 B3 is revised adding a new subsection to read as follows:

304 B3 p. General Requirements. The following general requirements apply to Performance Standard Developments.

(1) Fencing type and specifications including ten (10) feet in length of privacy fence attached to the Village Townhouse units extending along property line shall be subject to approval by the Township Board of Supervisors and such requirements shall be recorded as deed restrictions against the Village Townhouse units.

(2) The following house types within Performance Standard Developments (Use B3) shall be required to be constructed with basements: Twins, Duplex, Weak-Link Townhouse, Townhouse and Village Townhouse.

(3) In addition to Buffer Yard requirements contained within Section 1705 of this Ordinance, where a Performance Standard Development alley or rear yard abuts or is located within fifty (50) feet of the rear or side yard of an existing single family dwelling, additional buffering will be provided including berms and/or evergreen plantings to visually seclude the proposed alley or rear yard from the existing single family dwelling.

(4) Public streets within Performance Standard Developments shall have a right-of-way width of fifty-four (54) feet. This requirement does not apply to alleys.

ARTICLE VI.

Article XV Area, Dimensional and Parking Requirements are hereby revised adding the following new section:

Section 1517 Alleys. Alleys may be permitted upon approval of the Board of Supervisors in limited circumstances as a means of providing direct off-street parking and access for narrow lots.

(1) Alleys are intended to provide access to the rear of residential lots for service and on-lot parking.

(2) Frontage on an alley shall not be construed to satisfy the requirements of the ordinance for frontage on a street.

(3) No parking shall be provided for or permitted within the cartway of the alley.

(4) Street systems which contain alleys shall be designed to discourage through traffic on the alleys.

(5) Any portion of an alley located between two (2) points of ingress and egress shall provide rear access to no more than fifty (50) dwelling units.

(6) Alleys may only intersect secondary or primary streets.

(7) Alley length shall not exceed a distance of six hundred sixty (660) feet as measured between two (2) points of ingress and egress.

(8) Alleys shall be centered on a rear or side lot line and shall be designed with a twenty (20) feet wide easement and a paved cartway width of twelve (12) feet. Except where specifically approved by the Board of Supervisors, all alleys shall be designed for one way traffic. Where two way traffic is permitted by the Board of Supervisors, a cartway width of twenty (20) feet shall be provided.

(9) Parking shall be limited to a distance not to exceed thirty (30) feet from the alley centerline.

ARTICLE VII.

Section 1700 is hereby revised and amended to read as follows:

All uses and activities established after the effective date of this Ordinance, except recreational development of open space area pursuant to Section 1703 d.(3) of this Ordinance, shall comply with the following standards. Development of Open Space Recreation Areas may exceed the protection standards established for Steep Slopes and Woodlands if approved by the Board of Supervisors.

Site alterations, regrading, filling or clearing of vegetation prior to the submission of applications for zoning or building permits or the submission of plans for subdivision or land development shall be a violation of this Ordinance. In the event that two (2) or more resources overlap, the resource with the greatest protection standard (the least amount of alteration, regrading, clearing or building) shall apply to the area of overlap.

ARTICLE VIII.

The Zoning Map of East Rockhill Township is hereby amended rezoning Bucks County Tax Map Parcel No. 12-14-29 from RA Residential Agricultural District to R-1 Residential District.

ARTICLE IX.

If any sentence, clause, section, or part of this Ordinance is for any reason found to be unconstitutional illegal or invalid, such unconstitutionality, illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections or parts of this Ordinance. It is hereby declared as the intent of the Board of Supervisors that this Ordinance would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not be included herein.

ARTICLE X.

All ordinances or parts of ordinances which are inconsistent herewith are hereby repealed.

ARTICLE XI.

This Ordinance shall become effective on the 15th day
of June, A.D., 1993.

EAST ROCKHILL TOWNSHIP
BOARD OF SUPERVISORS

L. P. Lussman
Larry W. Volonte
David R. Nye

AN ORDINANCE PROVIDING FOR THE ESTABLISHMENT OF WATER CONSERVATION REQUIREMENTS FOR ALL NEW STRUCTURES WITHIN EAST ROCKHILL TOWNSHIP.

BE IT ORDAINED by the Board of supervisors of East Rockhill Township, Bucks County, Pennsylvania, and it is hereby enacted and ordained by the authority of same:

Section 1. Definitions

The following words, terms, and phrases used in this ordinance shall be defined and construed as follows:

- A. "Business" shall include commercial, industrial, and professional activity.
- B. "Consumer" shall include a person, partnership, association or corporation, and shall mean anyone to whom water is supplied by the Authority, whether as owner or tenant.
- C. "Property" shall mean the following:
 - 1. a building or enclosure occupied as a single dwelling unit or business;
 - 2. a combination of buildings in common enclosure occupied as a single dwelling or business;
 - 3. one side of a double house with a solid vertical partition wall occupied as a single dwelling unit;
 - 4. each dwelling unit, business, or profession in addition to the first dwelling unit, business, or profession occupying the same building or enclosure, regardless of whether or not any additional plumbing facilities are existing with respect to such dwelling units, businesses, or professions in addition to those installed or existing in the first year there of; provided, however, that during the first year following the date upon which newly constructed or reconstructed commonly owned multiple dwelling, business, or professional unit in addition to the first such unit shall be considered as property for purposes of this Ordinance only upon its having been rented for occupancy. Upon the expiration of such first year, such additional dwelling, business or professional unit shall be considered a property hereunder, regardless of whether or not it has been so rented.

D. "New Construction" shall mean construction pursuant to a valid building permit issued subsequent to date of enactment hereof.

Section 2. Water Conservation Requirements

Water saving fixtures and devices shall be required in all new construction regardless of public or private water supply pursuant to the following specifications:

A. Water closets operated by flush tanks.

Water closets and associated flushing mechanisms shall not exceed an average maximum volume of one and sixteenth gallons per flushing cycle when tested in accordance with a hydraulic performance requirements of ANSI A112.91.2m and ANSI A112.19.6m.

B. Urinals and Associates Flushing Mechanisims

Urinal water consumption shall not exceed an average of 1.5 gallons per flush cycle over a range of test pressures from 20 to 80 psi. The fixtures shall perform in accordance with the test requirements of the ANSI A122.19.2M and ANSI A112.19.6M.

C. Special Performance Equipment

The performance standards of Section two shall not apply to fixtures and fittings such as emergency showers, aspirator faucets, and blowout fixtures that, in order to perform a specialized function, cannot meet the specified standards.

D. Showerheads

Showerhead discharge rates shall not exceed 3 gallons of water per minute when tested in accordance with ANSI A112.18.1m.

E. Sink Faucets

1. Kitchen sink faucet discharge rates shall not exceed 3 gallons of water per minute over a range of test pressure from twenty (20) to eighty (80) psig. The fixture shall perform in accordance with the test requirements cited in the ANSI 112.18.1m Finished Rough Brass Plumbing Fixture Fittings standard.

2. Residential lavatory sink faucet discharge rates shall not exceed 3 gallons of water per minute over a range of test pressures from twenty (20) to eighty (80) psig. The fixture shall perform in accordance with the test requirements cited in the ANSI 112.18.1m Finished Rough Brass Plumbing Fixture Fittings standard.

Section 3. Penalty

The provisions of this Ordinance are declared to be for the health, safety and welfare of the citizens of the Township and persons violating any provisions, upon conviction before any District Justice of Bucks County, shall be fined the sum of Three Hundred (\$300.00) Dollars and costs. Each day during which such violation of any provisions shall continue, shall be deemed to be a separate offense.

Section 4. Severability

If any provision, sentence, clause, section or part of this Ordinance, or the application of any provision hereof, is for any reason found to be unconstitutional, illegal or invalid, such unconstitutionality, illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections or parts of this Ordinance. It is hereby declared as the intend of the Township that this Ordinance would have been enacted had such unconstitutional, illegal or invalid provision, sentence, clause, section or part hereof not been included.

Section 5. Repealer

All Ordinances or parts of Ordinances in conflict or inconsistent herewith, be and the same are hereby repealed absolutely.

Section 6. Effective Date

This Ordinance is hereby declared to be urgent for the preservation of the peace, health and comfort of the people of the Township and shall take effect and be enforced five (5) days after it is enacted by the Board of Supervisors of the Township.

SO . ORDAINED AND ENACTED into ordinance this 21st
day of *April* A.D. 1992.

EAST ROCKHILL
BOARD OF SUPERVISORS

John R. Lusman
Larry W. Volonik

Attest:

Township Secretary

ORDINANCE NO. 165

AN ORDINANCE OF EAST ROCKHILL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA, REGULATING THE INSTALLATION AND OPERATION OF HOLDING TANKS WITHIN THE TOWNSHIP, ESTABLISHING REGULATIONS AND PERMIT FEES, PROVIDING PENALTIES FOR VIOLATIONS AND REPEALING ORDINANCE NO. 33.

The East Rockhill Township Board of Supervisors hereby ordains:

Section 1. Purpose: The purpose of this Ordinance is to establish procedures for the use and maintenance of holding tanks when East Rockhill Township, the Bucks County Department of Health or the Pennsylvania Department of Environmental Resources determines that the use of a holding tank is necessary to abate a nuisance or public health hazard; or for use by an institutional, recreational, or commercial establishment with a sewage flow of four hundred (400) gallons per day or less; or for temporary installation when an Act 537 Revision provides for replacement of the temporary holding tank by adequate sewerage services in accordance with a schedule approved by East Rockhill Township and the Pennsylvania Department of Environmental Protection. It is hereby declared that the enactment of this Ordinance is necessary for the protection, benefit and preservation of the health, safety and welfare of the residents of East Rockhill Township.

Section 2. Definitions: Unless the context specifically and clearly indicates otherwise, the meaning of terms used in this Ordinance shall be as follows:

A. Holding Tank - A watertight receptacle which receives and retains sewage and is designed and constructed to facilitate ultimate disposal of the sewage at another site. Holding tanks include, but are not limited to, the following:

1. Chemical Toilet - A permanent or portable non-flushing toilet using chemical treatment in the retaining tank for odor control.

2. Composting Toilet - A device for holding and processing human and/or organic kitchen waste employing the process of biological degradation through the action of the microorganisms to produce a stable, humous-like material.

3. **Incinerating Toilet** - A device capable of reducing waste materials to ashes.

4. **Recycling Toilet** - A device in which the flushing medium is restored to a condition stable for re-use and flushing.

5. **Retention Tank** - A holding tank where sewage is conveyed to it by a water carrying system.

6. **Vault Pit Privy** - A holding tank designed to receive sewage where water under pressure is not available.

B. **Improved Property** - Any property within the Township upon which there is, or is to be, erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or animals and from which structure sewage shall or may be discharged.

C. **Owner** - Any person vested with ownership, legal or equitable, sole or partial, of any property located in the Township.

D. **Person** - Any natural person, partnership, association or corporation. Whenever used in any clause prescribing and imposing a penalty, or imposing a fine or imprisonment, or both, the term "person" shall include the members of an association and the officers of a corporation.

E. **Sewage** - Any substance that contains any of the waste produces or excrement or other discharge from the bodies of human beings or animals, and any noxious or deleterious substance being harmful or inimical to the public health, or to animal or aquatic life or to the use of water for domestic water supply or for recreation.

F. **Temporary Holding Tank** - A holding tank installed pending installation of a replacement system or public sewer facilities.

G. **Township** - East Rockhill Township, Bucks County, Pennsylvania.

Section 3. Rights and Privileges: The Township Supervisors and/or their designees are authorized to adopt such rules and regulations by separate Resolution as they deem necessary to control, regulate and inspect the methods of holding tank sewage disposal and the collection and transportation of sewage from such tanks.

Section 4. Other Regulations: The collection and transportation of all sewage from any use utilizing a holding tank shall be performed under the direction and control of

the Township by a hauler licensed by the Bucks County Department of Health. The disposal thereof shall be made only at such site or sites as may be approved by the Bucks County Department of Health.

Section 5. Procedure for Obtaining Holding Tank Permit: Before a holding tank may be installed to service any use, the property owner shall:

A. Obtain a permit for the holding tank from the Bucks County Department of Health and/or Pennsylvania Department of Environmental Protection.

B. File a copy of the Bucks County Department of Health and/or Pennsylvania Department of Environmental Protection permit and plan with the Township.

C. File with the Township a copy of a written agreement between the property owner, hauler and acceptor covering the periodic cleaning of the tank.

D. Submit such additional information on size, location or otherwise as the Township may require in order to complete this review.

E. Deposit and/or post the sum of money or security, in the form and/or amount as provided by the rules and regulations promulgated for this Ordinance. These funds are to be held by the Township and used only in the event the Township is required to perform any services, or pay for any services, relative to the holding tank. The Board of Supervisors shall have the right to claim the entire escrow deposit as reimbursement for Township expenses.

F. Pay a fee to the Township for the holding tank permit in accordance with the appropriate Resolution as adopted by the Board of Supervisors from time to time.

G. Execute an agreement to hold the Township harmless in the event of a claim against the Township arising from the operation of the holding tank.

H. A permit issued under the terms of this agreement shall become null and void if the holding tank installation has not been completed to the satisfaction of the Township within one (1) year of the date of issuance.

Section 6. Duties of Improved Property Owner: The owner of a property that utilizes a holding tank shall:

A. Maintain the holding tank in conformance with this or any Ordinance of the Township, the provisions of any applicable law and the rules and regulations of the Township and any administrative agency of the Commonwealth of Pennsylvania.

B. Permit only persons authorized by the Bucks County Department of Health and/or Pennsylvania Department of Environmental Protection to collect, transport and dispose of the contents therein.

C. Be responsible for the periodic cleaning or emptying of the holding tank as well as the cost thereof.

D. Be responsible for the periodic testing of sewerage and cost when deemed necessary by the Township.

Section 7. Township Regulation: Any obligation or duty assumed by the Township under this Ordinance shall be limited to holding tanks installed and used after the effective date hereof.

Section 8. Public Sewer Connections: From time to time in the future, as public sewage services become available to any property utilizing a holding tank, each and every owner of such property shall be required to make the necessary connection to the abutting or adjoining sewer lines. The holding tank must be disconnected and disposed of in accordance with applicable Pennsylvania Department of Environmental Protection regulations and connection to the public sewer system shall be made upon notice by the Township.

Section 9. Abatement of Nuisances: In addition to any other remedies provided in this Ordinance, any violation of the Ordinance shall constitute a nuisance and may be abated by the Township through equitable or legal relief from the Bucks County Court of Common Pleas.

Section 10. Violations: Any person who violates any provision of this Ordinance shall, upon conviction thereof in summary proceedings, be sentenced to pay a fine of not more than Six Hundred Dollars (\$600.00) and costs, or to undergo imprisonment in the Bucks County Prison for a period not in excess of fifteen (15) days. Each day that a violation of this Ordinance continues shall constitute a separate offense.

Section 11. Repealer: All ordinance or parts of ordinances which are inconsistent herewith are hereby repealed. The following Ordinances are specifically repealed:

Ordinance No. 33

Section 12. Severability: If any sentence, clause, section or part of this Ordinance is for any reason found to be unconstitutional, illegal or invalid, such unconstitutionality,

illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections or part of this Ordinance. It is hereby declared as the intent of the Board of Supervisors of East Rockhill Township, that this Ordinance would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not been included therein.

Section 13. Effective Date: This Ordinance shall become effective five (5) days after its adoption.

ENACTED AND ORDAINED into an Ordinance this 20th day of August, 1996 A.D., 1996, by the Board of Supervisors of the Township of East Rockhill in lawful session duly assembled.

EAST ROCKHILL TOWNSHIP

David Nyman

John R. Cressman

Gary Volovnik

RESOLUTION NO. 96-14

**A RESOLUTION OF THE BOARD OF SUPERVISORS
OF EAST ROCKHILL TOWNSHIP
ESTABLISHING RULES AND REGULATIONS
FOR HOLDING TANK**

WHEREAS, East Rockhill Township Board of Supervisors have recently enacted an Ordinance governing the installation of holding tanks within the Township subject to rules and regulations, and

WHEREAS, the recently enacted Ordinance No. 165 provides for the promulgation of rules and regulations by Resolution of the Board of Supervisors;

NOW, THEREFORE, BE IT RESOLVED, the following rules and regulations shall, together with Ordinance No. 165, govern holding tanks in East Rockhill Township. These regulations are to be in addition to those rules and regulations enacted by the Bucks County Department of Health, Pennsylvania Department of Environmental Protection, and other applicable agencies; and shall remain in effect until repealed by the East Rockhill Township Board of Supervisors.

ARTICLE I GENERAL REQUIREMENTS:

1. Proposed disposal site, method of disposal, and waste hauler for holding tank waste shall be approved by the Bucks County Department of Health and/or Pennsylvania Department of Environmental Protection in a manner consistent with the Solid Waste Management Act, prior to final approval for installation of the holding tank.
2. Whenever East Rockhill Township issues permits for holding tanks, the Township may impose other conditions it deems necessary for operation and maintenance of the tanks in order to prevent a nuisance or public health hazard.
3. Holding tanks require regular service and maintenance to prevent their malfunction and overflow and shall be used in lieu of other methods of sewage disposal only when the following conditions are met:
 - A. A temporary holding tank may be installed only when an Act 537 Revision provides for replacement of the holding tank by adequate sewerage services in accordance with a schedule approved by East Rockhill Township and the Pennsylvania Department of Environmental Protection;

- B. When the Township, Bucks County Department of Health, or the Pennsylvania Department of Environmental Protection determines that the use of a holding tank is necessary to abate a nuisance or public health hazard; or
 - C. For use by an institutional, recreational, or commercial establishment with a sewage flow of 400 gallons per day or less.
4. An agreement shall be executed with East Rockhill Township in a manner acceptable to the Township guaranteeing future maintenance of the holding tank. Said agreement to include provision for Township to receive and review pumping receipts for the holding tank, periodic inspection, and procedures and penalties for correction of malfunctions or public health hazards from use of the holding tank.
 5. Applicant shall deposit and/or post a sum of money or security, in the form and amount as determined by the Township. These funds are to be held by the Township to perform any services, or pay for any services relative to the holding tank.
 6. These regulations do not apply to temporary use of portable retention tanks or portable chemical toilets when their use is proposed at construction sites or at the site of public gathering and entertainment.

ARTICLE II STANDARDS FOR HOLDING TANKS:

1. The holding tank shall be constructed to meet specifications of Title 25, Chapter 73, Department of Environmental Protection, Rules and Regulations relating to standards for septic tanks.
2. Minimum capacity of a holding tank shall be 1,000 gallons or a volume equal to the quantity of waste generated within three days, whichever is larger.
3. Holding tanks shall be equipped with a warning device to indicate when the tank is filled to within 75% of its capacity. Such warning device shall create an audible and visual sign at an exterior location frequented by the homeowner or responsible individual.
4. Disposal of the waste from a holding tank shall be at a site approved by the Bucks County Department of Health and/or Department of Environmental Protection.

ARTICLE III PERMIT PROCESSING:

1. Upon receipt of approval by the Department of Environmental Protection and/or Bucks County Department of Health for the installation of a holding tank, applicant shall secure a Holding Tank Permit for tank installation from East Rockhill Township and make payment of required permit fee. All applications for permit shall include the following:
 - A. Completed Holding Tank Application
 - B. Application Fee - \$100.00 for residential use
- \$300.00 for non-residential use
 - C. Project Description
 - D. Detailed Construction Plan
 - E. Written approval from the Bucks County Department of Health
 - F. Holding Tank Hauling Agreement executed by the Owner, Hauler, and Acceptor
2. A cash escrow shall be established with East Rockhill Township pursuant to Article I, 5. above as determined by the Board of Supervisors within the written agreement, subject to the following minimum requirements:
 - A. Single-family residential use - \$ 250.00
 - B. All other uses - \$1,000.00

ARTICLE IV TANK INSTALLATION:

1. Tank installation shall not commence until receipt of a Holding Tank Installation Permit approved by East Rockhill Township.
2. Applicant shall give no less than 48 hours notice to East Rockhill Township prior to commencement of installation.
3. All holding tank installations shall conform with the rules and regulations as adopted as part of the Holding Tank Ordinance. East Rockhill Township reserves the right to suspend installations at any time by way of verbal and/or written notification should the tank installation at any time be in violation of the Holding Tank Ordinance or Resolution, State, County, or local regulations, including but not limited to the East Rockhill Township Building and Plumbing Codes.

ARTICLE V TANK REMOVAL AND/OR DISPOSAL:

Removal and/or disposal of a holding tank shall be in compliance with applicable regulations of the Pennsylvania Department of Environmental Protection and shall require notice to East Rockhill Township no less than 15 days prior to the start of removal or disposal.

ARTICLE IV TRANSFER OF OWNERSHIP:

The owner of each holding tank shall agree to maintain and be responsible for the holding tank subject to the terms and conditions stated in the previous sections, until such time as a new agreement and escrow has been established between the next property owner and East Rockhill Township.

ARTICLE VII AMENDMENTS:

The Board of Supervisors of East Rockhill Township reserves the right to amend these regulations from time to time as deemed necessary.

SO RESOLVED this 20th day of August, A.D., 1996, by the Board of Supervisors of East Rockhill Township, Bucks County, PA.

ATTEST:

EAST ROCKHILL TOWNSHIP
BOARD OF SUPERVISORS

Chairman

Vice Chairman

Supervisor

SEWAGE SYSTEM MAINTENANCE
AGREEMENT

THIS AGREEMENT is made this 21st day of August, A.D., 1991, by and between EAST ROCKHILL TOWNSHIP, 1622 Ridge Road, Perkasio, Bucks County, Pennsylvania, (hereinafter referred to as "Township"), and HELENE CLYMER, P.O. Box 322, Quakertown, Pennsylvania, (hereinafter referred to as "Owner").

WHEREAS, Owner warrants that she is the owner and has title in fee simple to a parcel of land situate in East Rockhill Township, Bucks County, Pennsylvania, which tract contains a commercial building that includes residential and nonresidential facilities and which tract is more particularly identified as Bucks County Tax Map Parcel No. 12-6-37, which tract consists of approximately thirteen and twentytwo one-hundredths (13.22) acres, the deed for which is recorded at the Office of the Bucks County Recorder of Deeds in Deed Book No. 166, page 248; and

WHEREAS, Owner has requested that the Township amend its Official Sewage Facilities Plan (hereinafter referred to as "Act 537 Plan") to permit installation of a stream discharge sewage treatment facility on the parcel, subject to the execution of an Agreement on the maintenance, inspection and permitting of the proposed sewage system in a form acceptable to the Solicitor, and further subject

to the condition that Owner guarantee the performance hereinafter set forth and described, to the extent hereinafter required.

NOW, THEREFORE, for and in consideration of the covenants contained herein Owner hereby covenants and agrees as follows:

1. No improvements, hereinafter referred to, in connection with this Project and Building Permit Application or Site Development Plan shall commence until the sewage treatment facility (hereinafter referred to as "Facility") has been approved by the Pennsylvania Department of Environmental Resources (DER) and a preconstruction meeting has been held with the Township Engineer.

2. The Facility requested shall be approved by the Pennsylvania Department of Environmental Resources and regarding said Facility, as approved by the Department of Environmental Resources, Owner for herself, her heirs, successors or assigns covenant and agree:

(a) It shall be certified to the Township by the Pennsylvania Department of Environmental Resources, the Department of Health of Bucks County and the engineer for the Owner that the construction and installation of the Facility and its "start up" has been completed in accordance with the permit granted by the Pennsylvania Department of Environmental Resources and in accordance with the rules

and regulations by the said Department of Environmental Resources and also the Bucks County Department of Health. However, if either the Pennsylvania Department of Environmental Resources or the Department of Health of Bucks County, or both will not issue such certifications, not because the owner's facility is faulty, but because they either do not issue certifications for this kind of system or they do not have applicable rules and regulations, then the Township will accept such certifications from either, or both, as are made available by either, or both. Owner reserves the right to schedule the "start-up" at owner's convenience.

(b) The Township shall at all times have access to all results of all sample testings submitted to DER per Owner's NPDES permit. The Township shall at all times have the right to receive a split of any such sample submitted by Owner to DER. Township shall further have the right to take its own sample for testing at any time upon reasonable notice to Owner. The cost of any Township sampling and/or testing shall be reimbursed by the escrow account described in the next paragraph.

(c) The Owner shall make any repair or replacement of any part or of all the system required by the inspection reports upon written notice from the Township, and upon failure to do so within a reasonable time, the Township

may have said repairs or replacements made at the cost and expense of the then property Owner.

(d) Owner contemporaneously with the execution of this Agreement shall deposit the sum of Four Thousand (\$4,000.00) Dollars with the Township which shall be held by the Township in in an interest bearing escrow account with the interest payable to Owner. Said sums may be used by Township to effectuate necessary repair, replacement or maintenance in the sole discretion of Township. Should the escrow fund fall below the sum of Two Thousand Five Hundred (\$2,500.00) Dollars, Owner shall deposit sums necessary to bring the account to Four Thousand (\$4,000.00) Dollars.

The Township shall have the further right and privilege to sue the then property owner in assumpsit for reimbursement or lien the property for any expense in excess of the deposited funds.

(e) The Owner shall be responsible for the removal of any sludge or solids as required by the Department of Environmental Resources and shall upon request of the Township provide an agreement with a hauler for such removal and with a receiving facility where necessary with such agreements to be currently on file with East Rockhill Township. Such agreement for the term of removal will be determined once the Facility is in operation as to its

loading rate and the recommendations of the Bucks County Department of Health as to said requirements shall be binding on the parties.

3. It is expressly agreed that this Agreement shall be recorded in the Office for the Recording of Deeds in and for the County of Bucks in Doylestown, Pennsylvania, and the same shall be binding upon Owner, Owner's heirs, administrators, successors and assigns, and any party acquiring title to said lot covered by the Plan shall assume all of the duties and obligations set forth hereunder as to said lot.

4. It is expressly understood and agreed that nothing contained herein shall be construed to waive or affect or alter any requirements of the zoning, land development and subdivision or other ordinances of the Township and nothing contained herein empowers any Township officer or employee to waive any requirements of such ordinances.

5. Owner, for herself, her heirs, administrators, successors and/or assigns shall at all times hold the Township harmless of any claims, suits, legal expenses, judgments which any adjoining property owners may bring against the Township or against the Township officials and employees and against the Owner or any of her successor property owners for any conditions occurring on any adjacent property caused or alleged to be caused by conditions arising

from the development of Owner's tract and further agrees that she will reimburse the Township for any expenses which the Township has incurred including legal fees, engineering fees, expert witness fees and any judgment rendered against the Township as a result of claims filed or brought against the Township, its officers or employees by adjacent property owners alleging conditions arising because of the development of this sewage treatment system and amendment to Official Sewage Facilities Act (Act 537).

6. The Owner shall reimburse the Township for the cost of the preparation of this Agreement, the cost of recording this Agreement and the cost of recording any instruments required under the provision of any ordinance of Township and all other costs, fees, and deposits required under the zoning and subdivision and land development ordinance.

WITNESS our hands and seals the date above written.

Attest:

EAST ROCKHILL TOWNSHIP
BOARD OF SUPERVISORS

Laura M. Williams
John R. Fassman
Roger C. Arnold

Helene Clymer
(Helene Clymer)

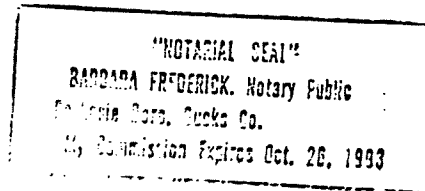
(SEAL)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF BUCKS)

On this 21st day of August, 1991, before me, the subscriber, a Notary Public in and for the Commonwealth of Pennsylvania, personally appeared Helene Clymer, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purpose therein contained and desired the same might be recorded as such.

WITNESS my hand and notarial seal the day and year aforesaid.

Barbara Frederick
Notary Public

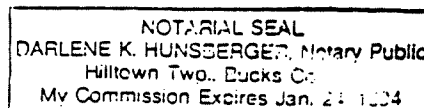


COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF BUCKS)

On this 21st day of August, A.D., 1991, before me, the undersigned officer, personally appeared the proper officers of the above-named Township, known to me (or satisfactorily proven) to be the persons whose names are subscribed to the within instrument, and acknowledged that they executed the same for the purposes therein contained.

WITNESS my hand and notarial seal the day and year aforesaid.

Darlene K. Hunzberger
Notary Public



MAR 11 1996

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

Application for NPDES Permit New and Existing Sewage Dischargers

LONG FORM

Application for discharge permit is:

New

Renewal

Modification/Amendment

Applicant Name:

EAST ROCKHILL TOWNSHIP

Name of Facility:

EAST ROCKHILL TOWNSHIP WASTEWATER TREATMENT FACILITY

NPDES Number:
(if known)

PA 0056847

Facility Location:

EAST ROCKHILL TOWNSHIP
(municipality)

BUCKS COUNTY
(county)

Facility Address:

BRANCH ROAD

Date of Submittal:

C. ROBERT WYNN ASSOCIATES, INC.

Consulting Engineering
211 West Broad Street
Quakertown, PA 18951

(215) 536-7547
(215) 536-7336

September 14, 1995

Certified Mail #Z 402 808 028

Mr. Andrew L. Warren, Chairman
Bucks County Commissioners
Bucks County Courthouse
Main and Court Streets
Doylestown, PA 18901

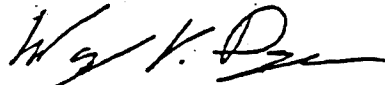
Subject: NPDES Permit Application/Notification
Wastewater Treatment Facility
East Rockhill Township
File No. 13-012

Dear Mr. Warren,

In conformance with Act 14, we are providing notification of submission of a NPDES Permit Application for discharge of a wastewater treatment facility located within East Rockhill Township. The site covered by this NPDES Permit is referenced on the attached location map (USGS Telford Quadrangle).

If you have any questions or require additional information, please do not hesitate to contact this office.

Sincerely,



Wayne V. Doyle, P.E.

WVD/ajb

cc: John Cornell

13-012

SENDER: <small>Complete items 1 and/or 2 for additional services. Complete items 3, and 4a & b. Print your name and address on the reverse of this form so that we can return this card to you. Attach this form to the front of the mailpiece, or on the back if space does not permit. Write "Return Receipt Requested" on the mailpiece below the article number. The Return Receipt will show to whom the article was delivered and the date delivered.</small>		I also wish to receive the following services (for an extra fee): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery <small>Consult postmaster for fee.</small>	
3. Article Addressed to: Andrew L. Warren, Chairman Bucks County Commissioners Courthouse Main and Court Sts. Doylestown, PA 18901		4a. Article Number: Z 402 808 028	
5. Signature (Addressee) 		4b. Service Type: <input checked="" type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise	
6. Signature (Agent) 		7. Date of Delivery: 9-17-95	
PS Form 3811, December 1991 U.S. GPO: 1993-352-714		8. Addressee's Address (Only if Restricted and fees paid)	

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service

DOMESTIC RETURN RECEIPT

TEL FORD JADRANGLE
PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

412
LE 4.1 MI.

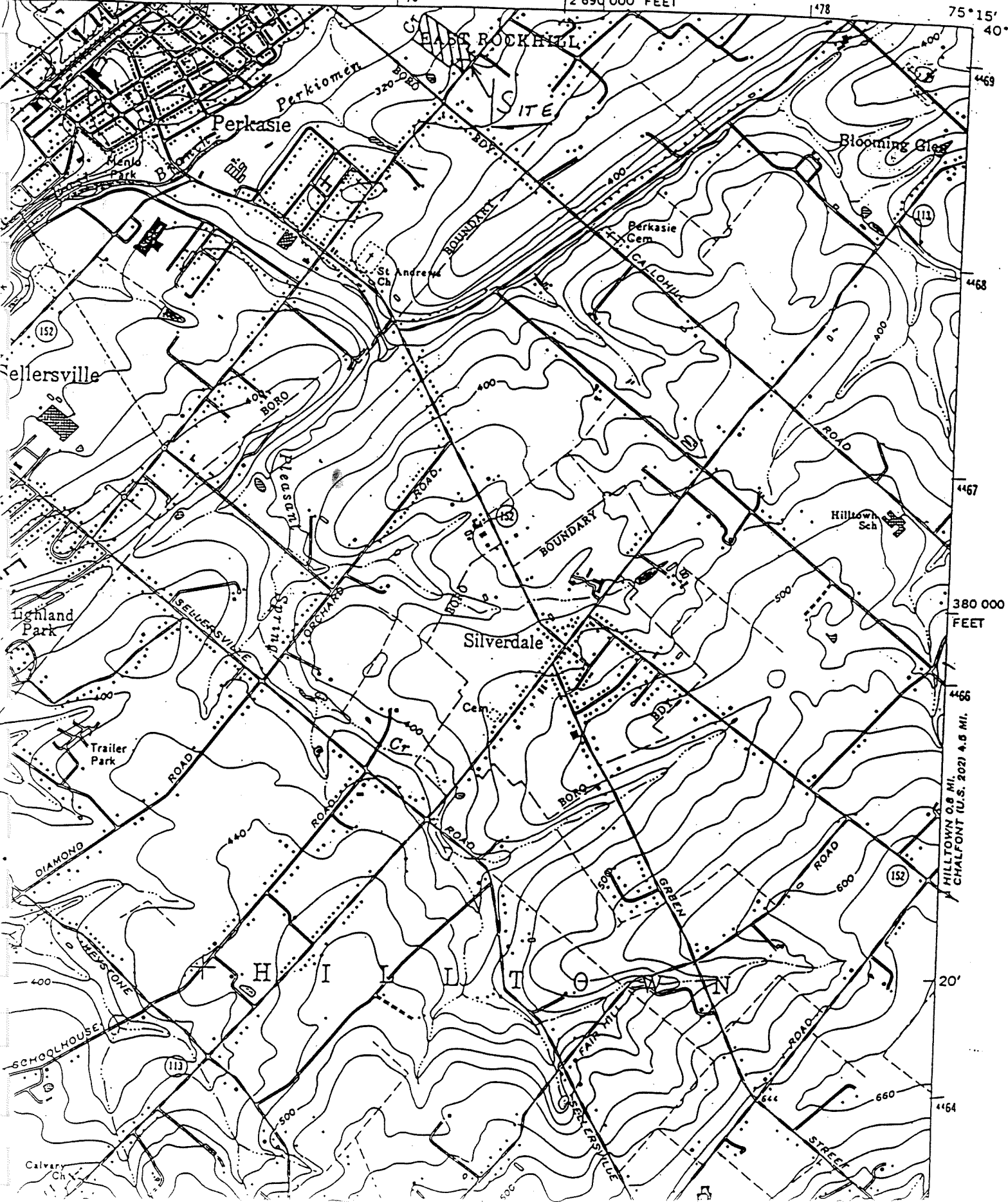
175 17'30"

176

2 690 000 FEET

178

75°15'
40'



380 000
FEET

HILLTOWN 0.8 MI.
CHALFONT (U.S. 202) 4.6 MI.

20'

4164

C. ROBERT WYNN ASSOCIATES, INC.

Consulting Engineering
211 West Broad Street
Quakertown, PA 18951

(215) 536-7547
(215) 536-7336

September 14, 1995

Certified Mail #Z 402 808 032

Mr. John Cornell, Township Manager
East Rockhill Township
1622 Ridge Road
Perkasie, PA 18944


Subject: NPDES Permit Application/Notification
Wastewater Treatment Facility
East Rockhill Township
File No. 13-012

Dear Mr. Cornell,

In conformance with Act 14, we are providing notification of submission of a NPDES Permit Application for discharge of a wastewater treatment facility located within East Rockhill Township. The site covered by this NPDES Permit is referenced on the attached location map (USGS Telford Quadrangle).

If you have any questions or require additional information, please do not hesitate to contact this office.

Sincerely,



Wayne V. Doyle, P.E.

WVD/ajb

Is your RETURN ADDRESS completed on the reverse side?	SENDER: *Complete items 1 and/or 2 for additional services. *Complete items 3 and 4a, b. *Print your name and address on the reverse of this form so that we can return this card to you. *Attach this form to the front of the mailpiece, or on the back, if space does not permit. *Write "Return Receipt Requested" on the mailpiece below the article number. *The Return Receipt will show to whom the article was delivered and the date delivered.	I also wish to receive the following services (for an extra fee): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.
	3. Article Addressed to: John Cornell East Rockhill Tosp 1622 Ridge Rd. Perkasie, Pa. 18944	4a. Article Number Z 402 808 032
	5. Signature (Addressee) <i>John Cornell</i>	4b. Service Type: <input checked="" type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise
	6. Signature (Agent)	7. Date of Delivery 9-29-95
8. Addressee's Address (Only if requested and fee is paid)		
PS Form 3811 December 1991 U.S. GPO: 1993-552-710 DOMESTIC RETURN RECEIPT		

TELFORD JADRANGLE
PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

PA. 412
SVILLE 4.1 MI.

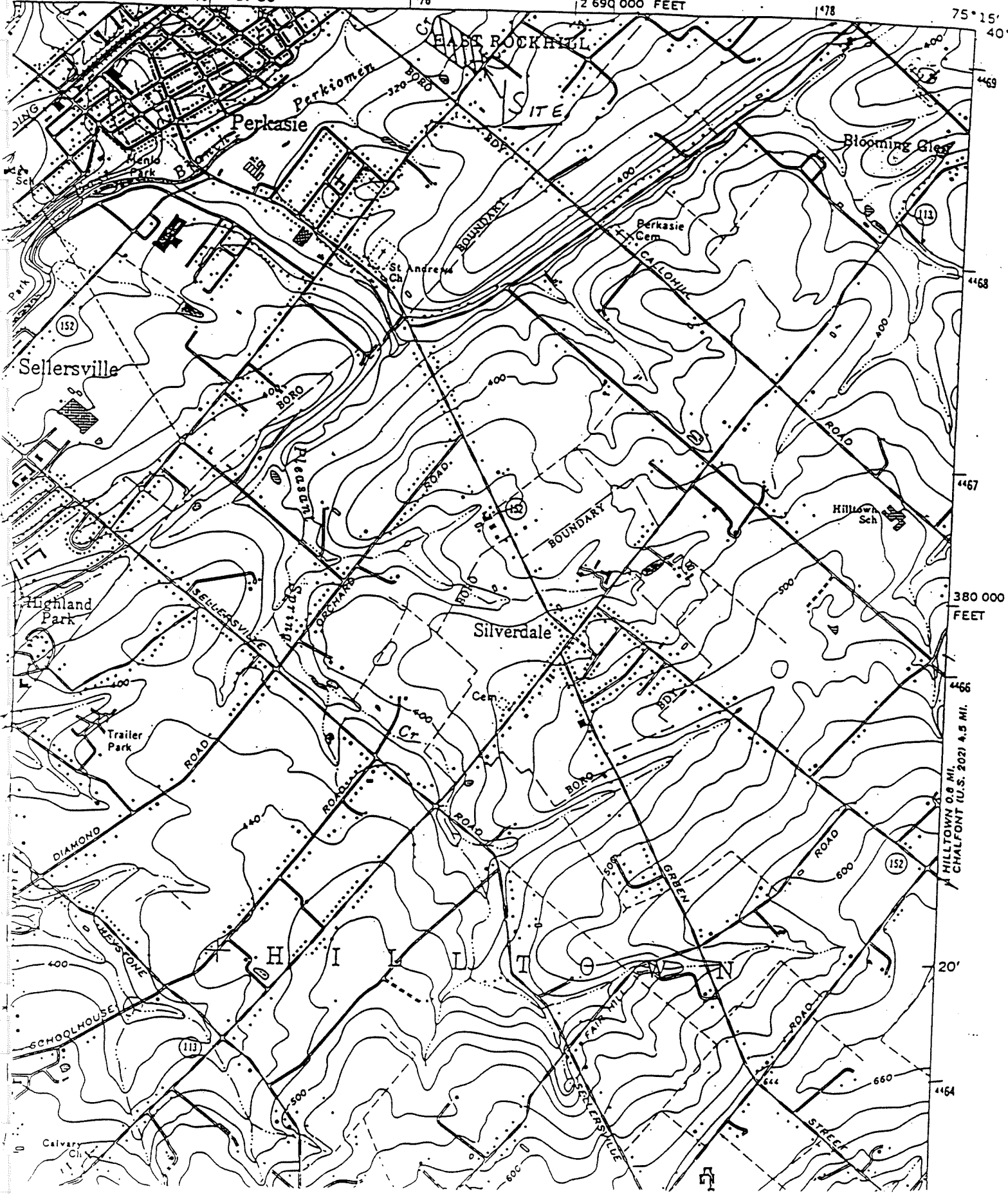
75° 17' 30"

176

2 690 000 FEET

178

75° 15' 40"



NPDES Number PA _____

SECTION A: PHYSICAL LOCATION AND GENERAL INFORMATION

1. Name of Facility EAST ROCKHILL WASTEWATER TREATMENT FACILITY

2. Facility Location (Street) BRANCH ROAD

City or Town PERKASIE Zip Code 18944

County BUCKS COUNTY

3. Facility Operator (Permit Applicant) Information

Operator (Applicant) Name EAST ROCKHILL TOWNSHIP

Does the Operator own the facility? yes no

Status of Operator: Federal State Private Public

Other _____

Phone (215) 257 . 9156

Street 1622 RIDGE ROAD City or Town PERKASIE

State PA Zip Code 18944

4. Tributary Sewer System Information

Municipalities Served	Flow Contribution %	Type of Sewer System (%)		
		Separate	Combined	Total
EAST ROCKHILL TOWNSHIP	100%	100%	0%	100
				100
				100
				100
				100
TOTAL	100	 	 	

SECTION A

NPDES Number PA _____

5. Attach Topographic Map - See instructions.

6. Outfall Location - For each outfall, list the latitude and longitude of its location to the nearest second and the name of the receiving water.

OUTFALL NUMBER <i>(list)</i>	LATITUDE			LONGITUDE			RECEIVING WATER <i>(Name)</i>	LOW FLOW STREAM <i>(list)</i>	
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.		Fl. Width	Fl. Depth
	1	40	22	30	75	16		41	EAST BRANCH PERKIOMEN CREEK

Code 01166
Mileage: 18.63 + 1000'

W-12.95

TELFORD QUADRANGLE
PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

0 PA. 412
RSVILLE 4.1 MI.

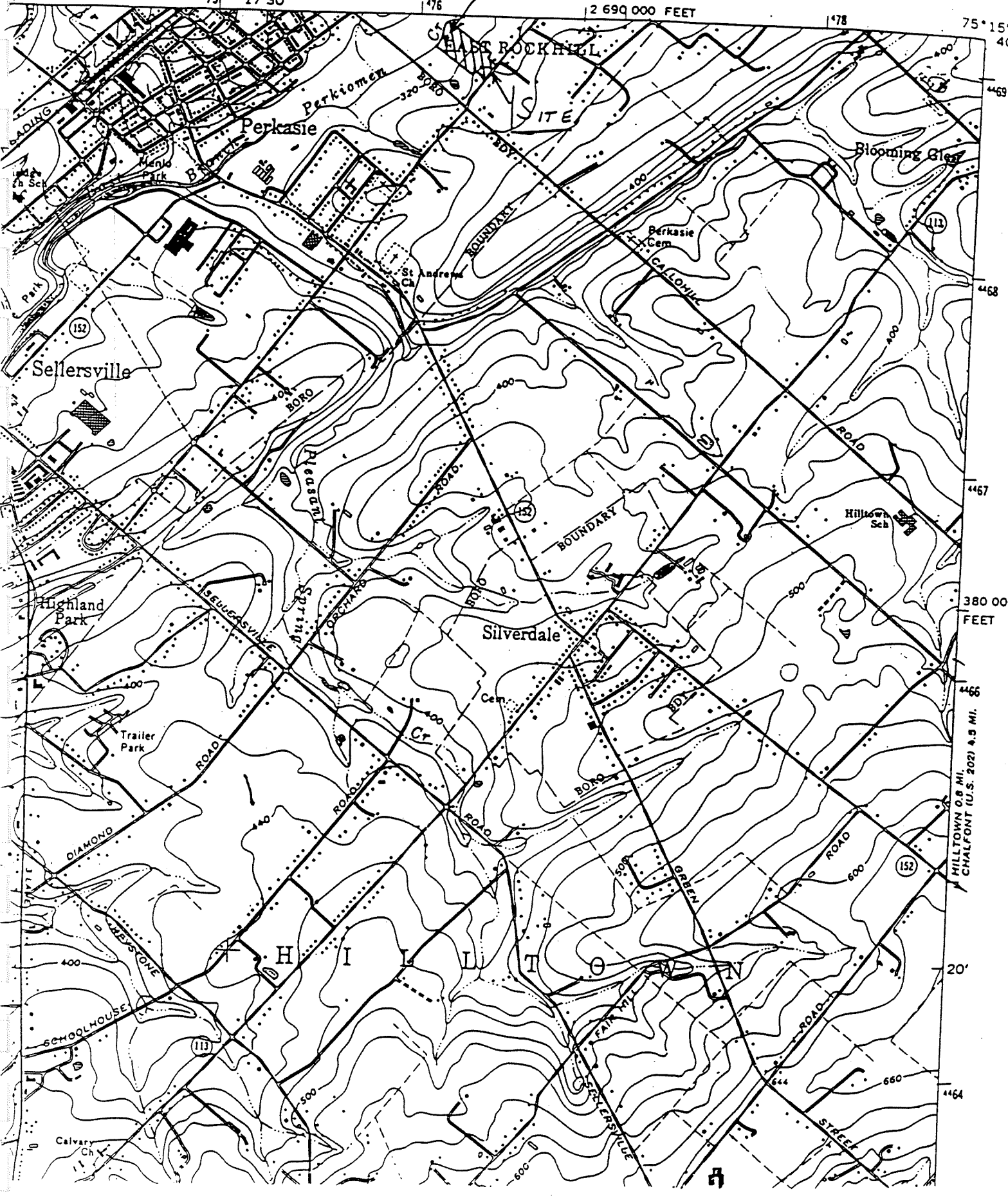
751 17'30"

176

2 690 000 FEET

178

75° 15' 40"



SECTION B. OUTFALL INFORMATION

1. Wastewater Treatment Technology Information

i. Provide the following information for each outfall involving wastewater treatment.

Outfall Number: <u>1</u>		Design Flow: Average Annual <u>.12</u> MGD Maximum Monthly Average <u>.25</u> MGD Present Flow: Average Annual * <u>N/A</u> MGD Maximum Monthly Average <u>N/A</u> MGD Batch Discharge Only No. of decant cycles <u>8</u> CYCLES/DAY Length of each decant cycle <u>360</u> MIN. Average decant discharge flow rate <u>483</u> GPM	
Treatment Unit Description (list in sequence)	Treatment Unit Code (See Table 3 Instructions)	Method for Handling and Disposal of Solid or Liquid Residue Resulting from Treatment (list in sequence)	Sludge Handling and Disposal Code (see Table 3 Instructions)
Bar Screen/Grit Removal	IM, IT	Landfill	5Q
Sequence Batch Reactor	3 - R	Landfill	5Q
Discharge to River	4A		

* Average of the most recent twelve months of data.

ii. Attach a Line Drawing of the treatment processes contributing to each outfall.

NPDES Number PA _____

SECTION B. OUTFALL INFORMATION (continued)

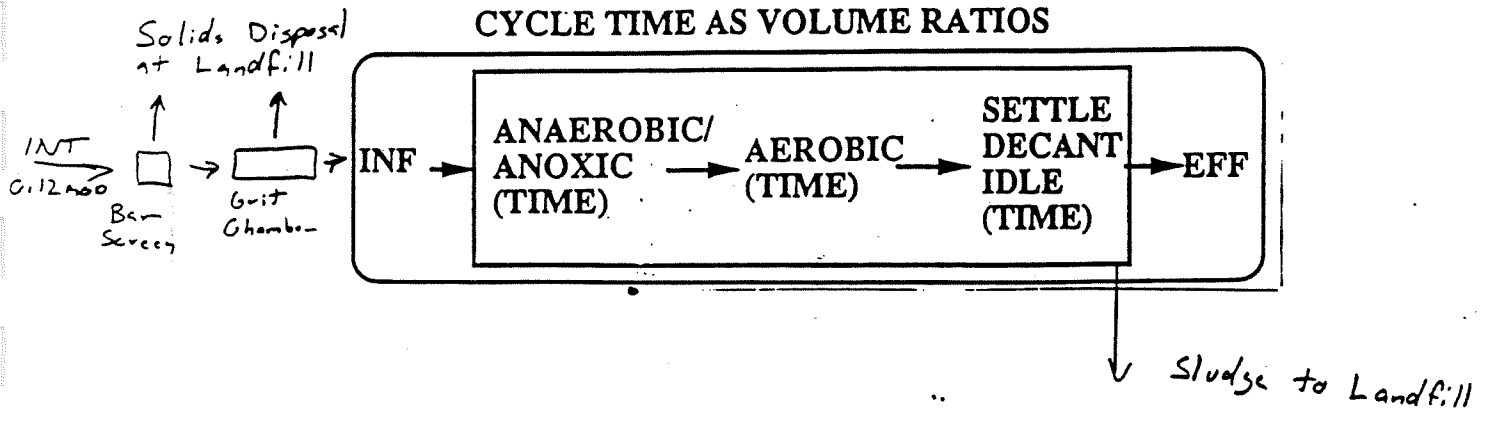
2. Plant Bypass, Sewer System Overflow, and other Outfall Information

Complete the following table:

Outfall Number	Occurrence (Check One)		Frequency (Times per Year)	Duration (Hours)	Volume (Gallons per Incident)	Reason or Cause (Describe)
	Wet Weather	Dry Weather				
<i>Treatment Plant Bypasses</i>						
		NONE				
<i>Sewer System Overflows</i>						
		NONE				X
<i>"Other" Outfalls</i>						

SBR BNR OPERATION

CYCLE TIME AS VOLUME RATIOS



NPDES Number PA _____

SECTION C. INDUSTRIAL USER (IU) INFORMATION

Provide the following information for each industrial user contributing wastewater to the treatment facility. Use additional sheets if needed:

i. IU Name NO INDUSTRIAL USER CONTRIBUTING WASTE WATER		
ii. Address N.A.		
iii. Municipality N.A.		
iv. Description of Industry and Wastewater Characteristics N.A.		
v. <input type="checkbox"/> Yes <input type="checkbox"/> No Is this industry a significant user? (See page iii of instructions)		
vi. SIC Code(s) _____ _____ _____ _____	vii. Industrial Categories _____ _____ _____ _____	viii. Wastewater Flows (gpd) Process _____ Noncontact Cooling _____ Sanitary _____ Other _____ <u>Total</u> _____

i. IU Name		
ii. Address		
iii. Municipality		
iv. Description of Industry and Wastewater Characteristics		
v. <input type="checkbox"/> Yes <input type="checkbox"/> No Is this industry a significant user? (See page iii of instructions)		
vi. SIC Code(s) _____ _____ _____ _____	vii. Industrial Categories _____ _____ _____ _____	viii. Wastewater Flows (gpd) Process _____ Noncontact Cooling _____ Sanitary _____ Other _____ <u>Total</u> _____

Outfall Number _____

NPDES Permit Number PA _____

SECTION D. REQUIRED AND OPTIONAL ANALYSES

1. ii Testing Requirements Worksheet for Pollutant Groups by Industrial Category

Table 2

INDUSTRY CATEGORY	Check (✓)	Group 1	Group 2	Group 3 Volatile	Group 4 Acid	Group 5 Base/ Neutral	Group 6 Pesticide	Group 7 PCB's	Group 8 Radio-activity
PRIMARY INDUSTRIES									
Adhesives and sealants		X	X	X	X	X	-		
Aluminum forming		X	X	X	X	X	-		
Auto and other laundries		X	X	X	X	X	X		
Battery manufacturing		X	X	X	-	X	-		
Coil coating		X	X	X	X	X	-		
Copper forming		X	X	X	X	X	-		
Electric & elec. components		X	X	X	X	X	X		X
Electroplating		X	X	X	X	X	-		
Explosives manufacturing		X	X	-	X	X	-		
Foundries		X	X	X	X	X	-		
Gum & wood chemicals, except		X	X	X	X	-	-		
- Tall Oil Resin (D)		X	X	X	X	X			
- Resin Based Derivatives (F)		X	X	X	X	X			
Inorganic chemicals mfg.		X	X	X	X	X	-		
Iron & steel manufacturing		X	X	X	X	X	-		
Leather tanning & finishing		X	X	X	X	X	-		
Mechanical products mfg.		X	X	X	X	X	-		
Nonferrous metals mfg.		X	X	X	X	X	X		
Ore mining/dressing, except		X	X	-	-	-	-		X
- Base/Precious metals (B)		X	X	-	X	-	-		X
Organic chemicals mfg.		X	X	X	X	X	X		
Paint and ink formulation		X	X	X	X	X	-		
Pesticides		X	X	X	X	X	X		
Petroleum refining		X	X	X	-	-	-		
Pharmaceutical preparations		X	X	X	X	X	-		
Photographic equipment and supplies		X	X	X	X	X	-		
Plastic & synthetic materials mfg		X	X	X	X	X	X		
Plastic processing		X	X	X	-	-	-		
Porcelain enameling		X	X	-	-	-	-		
Printing & publishing		X	X	X	X	X	X	X	

Outfall Number _____

NPDES Permit Number PA _____

1 ii Testing Requirements Worksheet for Pollutant Groups by Industrial Category

Table 2 (continued)

INDUSTRY CATEGORY	Check (✓)	Group 1	Group 2	Group 3 Volatile	Group 4 Acid	Group 5 Base/ Neutral	Group 6 Pesticide	Group 7 PCB's	Group 8 Radio- activity
PRIMARY INDUSTRIES (cont'd)									
Pulp & paperboard mills, except		X	X	X	X	X	X		
- Subparts J, U		X	X	X	X	X	-		
- Subparts E, F, Q		X	X	X	X	-	-		
- Subparts B, C, H, R		X	X	-	X	-	-		
- Subparts G, I, K, O, S, T		X	X	X	-	-	-		
Rubber processing		X	X	X	X	X	-		
Soap & detergent mfg.		X	X	X	X	X	-		
Steam electric power, except		X	X	X	X	X	-	X	X
- once-thru cooling, and bottom/fly ash transport		X	X	X	X	-	-	X	X
Textile mills, except		X	X	X	X	X	-		
- Greige mills (C)		X	X	-	-	-	-		
Timber products processing		X	X	X	X	X	X		
SECONDARY INDUSTRIES									
Dairy Products		X							
Grain Mills		X							
Canned preserved fruits/vegetables		X							
Sugar processing		X							
Cement manufacturing		X							
Feedlots		X							
Ferro Alloys		X	X						
Glass Manufacturing		X	X						
Asbestos Manufacturing		X							
Meat Products		X							
Phosphate Manufacturing		X							
Hospitals		X	X	X	X	X			X
Oil & Gas Extraction *									
Research Laboratory		X	X	X	X	X			
Universities & Colleges		X	X	X	X	X			
Landfill Leachate (municipal and/or residual) **		X	X	X	X	X	X	X	
Landfill Leachate (ash)		X	X						
Potable Water Treatment		X	X						
Other Types of Discharges		X	X						
Summary of Overall Testing Requirements									

* Contact the Bureau of Oil and Gas Management for Testing Requirements.

** Add Vanadium, Acetone, 2 Butanone, Bis (Chloromethyl) ether, p-cresol; 2,4-D; Dibromomethane, Dichlorodifluoro methane, 2-hexanone, 4-methyl-2-pentanone, 1-propanol, 2-propanol, Tetrahydrofuran, Trichlorofluoromethane, xylene (mixed isomers); 1,2,3 Trichloropropane, chloromethane.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

- Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number 1
- Water Supply Sampling Results - Optional (Specify Source _____)
- Upstream Background Sampling Results - Optional (Specify Location _____)
- Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)
- New Discharge (Describe basis for information presented in Instructions for Section D Permitted discharge of Pennridge Wastewater Treatment facility located 12,000+ feet downstream from proposed facility.)
- Bypass or Overflow (Describe NONE)

1. POLLUTANT GROUP 1	2. LEVEL PRESENT										3. UNITS		4. Coefficient of Effluent Variability (CV)		
	a. Maximum Daily Value ^(a)		b. Maximum 30 Day Value (if available) ^(b)		c. Long Term Ave. Value (if available) ^(c)		d. No. of Analyzes ^(d)	a. Concentration	b. Mass	n. Concentration	b. Mass				
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass									
• Flow (mgd)	0.12	X	X	X	X	X	X								
1C Carbonaceous Biochemical Oxygen Demand, CBOD	50	25	40	133	20	833		mg/l		1b					
2C Chemical Oxygen Demand, COD															
3C Total Organic Carbon, TOC															
4C Total Suspended Solids, TSS															
5C Total Dissolved Solids, TDS	60	30	45	1500	45	1000		mg/l		1b					
6C Ammonia as N															
7C Oil and Grease															
8C Bromide															
9C Chlorine, Total Residual															
10C Temperature winter		Value		Value		Value		(°C)		(°C)					
11C Temperature summer		Value		Value		Value		(°C)		(°C)					
12C pH	Minimum	Maximum						standard units		standard units					

(a) Maximum Daily Value - Report the highest daily value or average daily value from the last year of sampling taken over the operating hours of the facility during a 24 hour period.
 (b) Maximum 30 Day Value - Determine the average of all daily values taken during each calendar month and report the highest average.
 (c) Long Term Average Value - Determine the average of all values within the last year and report both the mass and concentration.
 (d) See Section D, Table 3 of the instructions for minimum number of sampling events required.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)

Outfall Number 1

Water Supply Sampling Results - Optional (Specify Source _____)

Upstream Background Sampling Results - Optional (Specify Location _____)

Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)

New Discharge (Describe basis for information presented in Instructions for Section D Permitted discharge of Pennridge Wastewater Treatment facility located 12,000+ feet downstream from proposed facility.)

Bypass or Overflow (Describe None)

Pollutant Group 2	Acceptable Detec. Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				4. Units	5. Coefficient of Effluent Variability (CV)	6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.									
				a. Max Monthly Value		b. Annual Average				Concentration	Mass	Industrial Sources	Domestic Sources	Water Supply	Waste Handlers	O&M Practices	Other (Explain)		
				Concentration	Mass	Concentration	Mass											Number of Analyses	
3C Color																			
4C Fecal Coliform																			
5C Fluoride	100																		
6C Nitrate-Nitrite (as N)																			
7C Nitrogen, Total Organic (as N)																			
8C Phosphorus (as P), Total																			
9C Sulfate (as SO ₄)	1,000																		
0C Sulfide (as S)	1,000																		
1C Sulfite (as SO ₃)	2,000																		
2C Surfactants (MBAS)	26																		

3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.

3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.

3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

It is to the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

- Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number 1
- Water Supply Sampling Results - Optional (Specify Source _____)
- Upstream Background Sampling Results - Optional (Specify Location _____)
- Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)
- New Discharge (Describe basis for information presented in Instructions for Section D Permitted discharge of Pennridge Wastewater Treatment facility located 12,000+ feet downstream from proposed facility)
- Bypass or Overflow (Describe None)

Pollutant Group 2 (continued)	Acceptable Discharge Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				5. Coefficient of Effluent Variability (CV)	6. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.									
				a. Max Monthly Value		b. Annual Average of Analyses			c. Number of Analyte	Concentration	Mass	Industrial Sources	Domestic Sources	Water Supply	Waste Haulers	UGM Practices	Other (Explain)	
				Concentration	Mass	Concentration	Mass											
1M Antimony, Total	200																	
2M Arsenic, Total	50																	
3M Beryllium, Total	5																	
4M Cadmium, Total	5																	
5M Chromium, Total	50																	
5M Chromium, Hexavalent	10																	
6M Copper, Total	20																	
7M Lead, Total	100																	
8M Mercury, Total	0.2																	
9M Nickel, Total	40																	
10M Selenium, Total	75																	
11M Silver, Total	10																	
12M Thallium, Total	100																	
13M Zinc, Total	5																	
14M Cyanide, Total	20																	
15M Cyanide, Free	5																	

3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.
 3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.
 3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)

Outfall Number 1

Water Supply Sampling Results - Optional (Specify Source _____)

Upstream Background Sampling Results - Optional (Specify Location _____)

Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)

New Discharge (Describe basis for information presented in Instructions for Section D) Permitted discharge of Pennridge Wastewater Treatment facility located 12,000 feet downstream from proposed facility.

Bypass or Overflow (Describe None)

Pollutant Group 2 (continued)	Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				5. Coefficient of Effluent Variability (CV)	6. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.									
				a. Max Monthly Value		b. Annual Average of Analyses			c. Number of Analyses	Indus. Trial Sources	Other Non-domestic Sources	Domestic Sources	Water Supply	Waste Handlers	O&M Practices	Other (Explain)		
				Concentration	Mass	Concentration	Mass										Concentration	Mass
15M Phenols, Total	5																	
16M Aluminum, Total	100																	
17M Barium, Total	100																	
18M Boron, Total	100																	
19M Cobalt, Total	50																	
20M Iron, Total	30																	
21M Iron, Dissolved	30																	
22M Magnesium, Total	30																	
23M Molybdenum, Total	100																	
24M Manganese, Total	10																	
25M Tin, Total	800																	
26M Titanium, Total	400																	

3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.

3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.

3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

- Outfall Sampling Results** (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number** _____
- Water Supply Sampling Results - Optional** (Specify Source _____)
- Upstream Background Sampling Results - Optional** (Specify Location _____)
- Treatment Facility Influent Sampling Results** (show location of sampling on Line Drawing required by Section B)
- New Discharge** (Describe basis for information presented in Instructions for Section D Permitted discharge of Pennridge Wastewater Treatment facility located 1200+ feet downstream from proposed facility.)
- Bypass or Overflow** (Describe None)

Pollutant Group 3 Volatile Organics	Acceptable Detec. Level* (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				4. Units	5. Coefficient of Effluent Variability (CV)	6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.									
				a. Max Monthly Value		b. Annual Average				Concentration	Mass	Indus. Trial Sources	Other Non-domestic Sources	Domestic Sources	Water Supply	Waste Handlers Practices	Other (Explain)		
				Concentration	Mass	Concentration	Mass											Number of Analyze	
1V Acrolein	10																		
2V Acrylonitrile	10																		
3V Benzene	10																		
6V Bromoform	10																		
6V Carbon Tetrachloride	10																		
7V Chlorobenzene	10																		
8V Chlorodibromomethane	10																		
9V Chloroethane	10																		
10V 2-Chloroethylvinyl Ether	10																		
11V Chloroform	10																		
12V Dichlorobromomethane	10																		
14V 1,1-Dichloroethane	10																		
16V 1,1-Dichloroethylene	10																		
17V 1,2-Dichloropropane	10																		
18V 1,3-Dichloropropylene	10																		
19V Ethylbenzene	10																		

3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.

3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.

3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

* It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)

Outfall Number 1

Water Supply Sampling Results - Optional (Specify Source _____)

Upstream Background Sampling Results - Optional (Specify Location _____)

Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)

New Discharge (Describe basis for information presented in Instructions for Section D Permitted discharge of Pennridge Wastewater Treatment facility located 12,000+ feet downstream from proposed facility.)

Bypass or Overflow (Describe **None**)

Pollutant Group	Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present			4. Units		5. Coefficient of Effluent Variability (CV)	6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.										
				a. Max Monthly Value		b. Annual Average of Analyses		c. Number of Analyses		Concentration	Mass	Concentration	Mass	Industrial Sources	Other Non-domestic Sources	Domestic Sources	Water Supply	Waste Handlers	O&M Practices	Other (Explain)
				Concentration	Mass	Concentration	Mass													
20V Volatile Organics	10																			
20V Methyl Bromide	10																			
21V Methyl Chloride	10																			
22V Methylene Chloride	10																			
23V 1,1,2,2-Tetra-chloroethane	10																			
24V Tetrachloro-ethylene	10																			
25V Toluene	10																			
26V 1,2-Trans-Di-chloroethylene	10																			
27V 1,1,1-Trichloro-ethane	10																			
28V 1,1,2-Trichloro-ethane	10																			
29V Trichloro-ethylene	10																			
31V Vinyl Chloride	10																			

3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.

3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.

3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

• It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

- Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number 1
- Water Supply Sampling Results - Optional (Specify Source _____)
- Upstream Background Sampling Results - Optional (Specify Location _____)
- Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)
- New Discharge (Describe basis for information presented in Instructions for Section D Permitted discharge of Pennridge Wastewater Treatment facility located 1200+ feet downstream from proposed facility.)
- Bypass or Overflow (Describe None)

Pollutant Group	Acceptable Detention Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				4. Units	5. Coefficient of Effluent Variability (CV)	6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.									
				a. Max Monthly Value		b. Annual Average				Concentration	Mass	Industrial Sources	Other Non-domestic Sources	Domestic Sources	Water Supply	Waste Handlers	O&M Practices	Other (Explain)	
				Concentration	Mass	Concentration	Mass												c. Number of Analyses
1A 2-Chlorophenol	10																		
2A 2,4-Dichloro-phenol	10																		
3A 2,4-Dimethyl-phenol	10																		
4A 4,6-Dinitro-Cresol	10																		
5A 2,4-Dinitro-phenol	50																		
6A 2-Nitrophenol	10																		
7A 4-Nitrophenol	50																		
8A P-Chloro-m-Cresol	10																		
9A Pentachloro-phenol	50																		
10A Phenol	10																		
11A 2,4,6-Trichloro-phenol	10																		

3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.
 3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.
 3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

• It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

- Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number 1
- Water Supply Sampling Results - Optional (Specify Source _____)
- Upstream Background Sampling Results - Optional (Specify Location _____)
- Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)

New Discharge (Describe basis for information presented in Instructions for Section D) Permitted discharge of Pennridge Wastewater Treatment facility located 12,000± feet downstream from proposed facility.

Bypass or Overflow (Describe None)

Pollutant Group	Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				4. Units		5. Coefficient of Effluent Variability (CV)	6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.							
				a. Max Monthly Value		b. Annual Average		Concentration	Mass		Industrial Sources	Other Non-domestic Sources	Domestic Sources	Water Supply	Waste Handlers	ORM Practices	Other (Specify)	
				Concentration	Mass	Concentration	Mass											Number of Analyses
1B Acenaphthene	10																	
2B Acenaphthylene	10																	
3B Anthracene	10																	
4B Benzidine	50																	
5B Benzo (a) Anthracene	10																	
6B Benzo (a) Pyrene	10																	
7B 3,4-Benzo-Fluoranthene	10																	
8B Benzo (ghi) Perylene	10																	
9B Benzo (k) Fluoranthene	10																	
10B Bis (2-Chloro-ethoxy) Methane	10																	
11B Bis (2-Chloro-ethyl) Ether	10																	
12P Bis (2-Chloro-isopropyl) Ether	10																	
13B Bis (2-Ethyl-hexyl) Phthalate	10																	
14B 4-Bromophenyl Phenyl Ether	10																	

3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.

3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.

3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) that requested. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

- Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number _____
- Water Supply Sampling Results - Optional (Specify Source _____)
- Upstream Background Sampling Results - Optional (Specify Location _____)
- Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)
- New Discharge (Describe basis for information presented in Instructions for Section D) Permitted discharge of Pennridge Wastewater Treatment located 12,000+ feet downstream from proposed facility.
- Bypass or Overflow (Describe None)

Pollutant Group Base-Neutral Fraction Organics	Acceptable Detection Level ^a (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				4. Units			5. Coefficient of Effluent Variability (CV)	6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.									
				a. Max Monthly Value		b. Annual Average		c. Number of Analyses	Concentration	Mass		Concentration	Mass	Industrial Sources	Domestic Sources	Waste Water Supply	Other (Specify)				
				Concentration	Mass	Concentration	Mass											Concentration	Mass	Concentration	Mass
5B Butyl Benzy Phthalate	10																				
6B 2-Chloronaphthalene	10																				
7B 4-Chlorophenyl Phenyl Ether	10																				
8B Chrysene	10																				
9B Dibenz(a,h) Anthracene	10																				
0B 1,2-Dichlorobenzene	10																				
1B 1,3-Dichlorobenzene	10																				
2B 1,4-Dichlorobenzene	10																				
3B 3,3'-Dichlorobenzidine	50																				
4B Diethyl Phthalate	20																				
5B Dimethyl Phthalate	20																				
6B Di-N-Butyl Phthalate	20																				
7B 2,4-Dinitrotoluene	10																				
8B 2,6-Dinitrotoluene	10																				
9B N-Octyl Phthalate	20																				
0B 1,2-Diphenylhydrazine (as Azobenzene)	10																				

- 3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.
- 3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.
- 3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

* It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

- Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number 1
- Water Supply Sampling Results - Optional (Specify Source _____)
- Upstream Background Sampling Results - Optional (Specify Location _____)
- Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)
- New Discharge (Describe basis for information presented in Instructions for Section D) Permitted discharge of Pennridge Wastewater Treatment facility located 12,000+ feet downstream from proposed facility.
- Bypass or Overflow (Describe None)

Pollutant	Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				4. Units		5. Coefficient of Effluent Variability (CV)	6. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.							
				a. Max Monthly Value		b. Annual Average		c. Number of Analysis	Concentration		Mass	Industrial Sources	Other Non-domestic Sources	Domestic Sources	Water Supply	Waste Haulers	O&M Practices	Other (Explain)
				Concentration	Mass	Concentration	Mass											
Fluoranthene																		
Fluorene	10																	
Hexachlorobenzene	10																	
Hexachlorobutadiene	10																	
Hexachlorocyclopentadiene	10																	
Hexachloroethane	10																	
Indeno (1,2,3-cd) Pyrene	10																	
Isophorone	10																	
Naphthalene	10																	
Nitrobenzene	10																	
N-Nitrosodimethylamine	20																	
N-Nitrosodi-N-Propylamine	20																	
N-Nitrosodiphenylamine	20																	
Phenanthrene	10																	
Pyrene	10																	
1,2,4-Trichlorobenzene	10																	

3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.
 3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.
 3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

- Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number 1
- Water Supply Sampling Results - Optional (Specify Source _____)
- Upstream Background Sampling Results - Optional (Specify Location _____)
- Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)
- New Discharge (Describe basis for information presented in Instructions for Section D Permitted discharge of Pennridge Wastewater Treatment facility located 12,000± feet downstream from proposed facility.)
- Bypass or Overflow (Describe None)

Pollutant Group Pesticides	Acceptable Description Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				5. Coefficient of Effluent Variability (CV)	6. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.								
				a. Max Monthly Value		b. Annual Average of Analyses			c. Number of Analyses	Concentration	Mass	Industrial Sources	Domestic Sources	Water Supply	Waste Handlers	O&M Practices	Other (Explain)
				Concentration	Mass	Concentration	Mass										
1P Aldrin	10																
2P Alpha BHC	10																
3P Beta BHC	10																
4P Gamma BHC	10																
5P Delta BHC	10																
6P Chlordane	10																
7P 4,4'-DDT	10																
8P 4,4'-DDE	10																
9P 4,4'-DDD	10																
10P Dieldrin	10																
11P Alpha-Endosulfan	10																
12P Beta-Endosulfan	10																
13P Endosulfan Sulfate	10																
14P Endrin	10																
15P Endrin Aldehyde	10																
16P Heptachlor	10																
17P Heptachlor Epoxide	10																
25P Toxaphene	10																
DIOXIN:																	
2,3,7,8-Tetra-chlorodibenzo-P																	
Dioxin																	

3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.
 3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.
 3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses at the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA _____

1., 2., 3. Analyses Results

- Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number 1
- Water Supply Sampling Results - Optional (Specify Source _____)
- Upstream Background Sampling Results - Optional (Specify Location _____)
- Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)
- New Discharge (Describe basis for information presented in Instructions for Section D Permitted discharge of Pennridge Wastewater Treatment facility located 12,000+ feet downstream from proposed facility.)
- Bypass or Overflow (Describe None)

Pollutant Group PCB's	Acceptable Detention Level* (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				4. Units		5. Coefficient of Effluent Variability (CV)	6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.								
				a. Max Monthly Value		b. Annual Average of Analyses		c. Number of Analysis	Concentration		Mass	Industrial Sources	Other Non-domestic Sources	Domestic Sources	Water Supply	Waste Haulers	ORM Practices	Other (Explain)	
				Concentration	Mass	Concentration	Mass												
IP PCB-1242	20																		
IP PCB-1254	20																		
IP PCB-1221	20																		
IP PCB-1232	20																		
IP PCB-1248	20																		
IP PCB-1260	20																		
IP PCB-1016	20																		

- 3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.
- 3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.
- 3.c. See Section D, Table 3 of the Instructions for minimum number of sampling events required.

* It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

SECTION D. REQUIRED AND OPTIONAL ANALYSES

NPDES Number PA

1., 2., 3. Analyses Results

- Outfall Sampling Results (locate Sampling Point on Line Drawing required by Section B)
- Outfall Number 1
- Water Supply Sampling Results - Optional (Specify Source _____)
- Upstream Background Sampling Results - Optional (Specify Location _____)
- Treatment Facility Influent Sampling Results (show location of sampling on Line Drawing required by Section B)
- New Discharge (Describe basis for information presented in Instructions for Section D) Permitted discharge of Pennridge Wastewater Treatment facility located 12,000± feet downstream from proposed facility.
- Bypass or Overflow (Describe None)

Pollutant Group	Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present				4. Units		5. Coefficient of Effluent Variability (CV)	6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.							
				a. Max Monthly Value		b. Annual Average of Analyses		c. Number of Analyses	Concentration		Mass	Industrial Sources	Other Non-domestic Sources	Domestic Sources	Water Supply	Waste Handlers	DAM Practices	Other (Explain)
				Concentration	Mass	Concentration	Mass											
Radioactivity:																		
1R (1) Alpha, Total	Not Available																	
2R (2) Beta, Total	" "																	
3R (3) Radium, Total	" "																	
4R (4) Radium 226, Total	" "																	

- 3.a. Maximum Monthly Value - Determine the average of all daily values taken during each calendar month and report the highest average.
- 3.b. Annual Average Value - Determine the average of all values within the last year and report both the mass and concentration.
- 3.c. See Section D, Table 3 for minimum number of sampling events required.

• It is in the applicant's interest to achieve a level of detection at least equal to (preferably more sensitive than) those listed. This will minimize uncertainty and therefore the need for additional analyses or the potential for establishing a large number of effluent limitations and/or monitoring requirements in the final NPDES permit.

NPDES Permit Number PA _____

SECTION E. INFORMATION ON STATUS OF OTHER ENVIRONMENTAL PROTECTION EFFORTS

1. Municipal Wasteload Management

Are any of the facilities covered by this application currently (or expected to be) under a hydraulic/organic overload condition as defined by Chapter 94 of the Department's Regulations?

Yes No

If yes, attach a brief description of the actions being taken to deal with the situation. If no, no further response is required to question V.A.

2. Sewage Sludge Management

Record the estimated total annual average dry sludge production. 112 Dry Tons/Year
Are the sludges and residues associated with this facility currently being (or expecting to be) handled under a sewage sludge disposal permit issued by the Department under the Municipal Waste Management Regulations?

Yes No

If yes, provide permit number and attach a summary of the results of the last year's chemical sludge analyses.

Sludge Disposal Permit No. _____

If no, explain status of efforts to obtain sludge disposal permits. List at least two Bureau of Waste Management approved sites that have been contracted to accept the sludge from your facility.

Contracts for disposal of sludge will be made upon completion of facility.

SECTION E. INFORMATION ON STATUS OF OTHER ENVIRONMENTAL PROTECTION EFFORTS (continued)

3. Local Industrial Waste Pretreatment Program

Are the facilities currently experiencing problems with:

- i. interference with operation
- ii. pass through of pollutants to receiving waters
- iii. sludge contamination
- iv. worker hazards

that are (or may be) associated with sewer system users?

Yes No

If yes, describe actions being taken to deal with the problems: _____

4. Sewerage Facilities (Act 537) Planning

Are the wastewater dischargers covered by this application consistent with the DER approved Official Sewerage Plan(s) for the affected municipalities?

Yes No

If YES, for new or expanding facilities only, attach copy of Act 537 Sewerage Facilities Planning Approval letter.

If no, provide an explanation: Act 537 Wastewater Facilities Plan is
being prepared for submission to PADEP.

NPDES Number PA _____

SECTION E. INFORMATION ON STATUS OF OTHER ENVIRONMENTAL PROTECTION EFFORTS (continued)

5. Anticipated Environmental Protection Improvements or Related Changes

- i. YES (complete the following table) NO (No further response required for question E.5.i.)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. No	b. Source of Discharge		a. Required	b. Projected

- ii. **OPTIONAL:** You may attach additional sheets describing any additional environmental pollution control programs which may affect your discharges which you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules.

MARK "X" IF DESCRIPTION OF ADDITIONAL INFORMATION IS ATTACHED

6. List All WQM Part II and NPDES Permits Presently Held

Permit Number

Issue / Amendment Date

NONE

SECTION F. BIOLOGICAL TOXICITY TEST DATA

Federal Regulation 122.21(j)(1)-(3) requires all designated Publicly Owned Treatment Works (POTWs) to provide the results of valid whole effluent biological toxicity tests with their NPDES permit application. The designated POTWs are (1) all POTWs with design influent flows equal to or greater than one million gallons per day; (2) all POTWs with approved pretreatment programs or POTWs required to develop a pretreatment program; (3) POTWs required to perform such testing at the Department's discretion. EPA requires the results of four (4) tests be submitted with this application. Such testing must have been conducted since the last permit reissuance or permit modification, whichever occurred later. The results of these tests will be used to determine the need for a whole effluent toxicity testing requirement in your NPDES permit. For all others that do not meet any of the requirements of 1-3 listed above, do you know or have reason to believe that any acute or chronic biological toxicity tests were made in the last three (3) years on any of the facility's discharges, or on a receiving water in relation to a discharge?

Yes No

If yes, attach any information which you have available on the purpose and nature of such testing, and the test results.

If no, all dischargers are still encouraged to perform biological toxicity testing of effluent. The Department may be contacted for appropriate protocols.

SECTION G. CONTRACTED ANALYTICAL ASSISTANCE

Did a contract laboratory or consulting firm perform any of the analyses required by this application?

Yes, their name(s), address(es) and list(s) of the analyses performed are given below: No

Name _____ Types of Analyses Performed: _____
Address _____

Phone (____) _____ - _____

Name _____ Types of Analyses Performed: _____
Address _____

Phone (____) _____ - _____

Name _____ Types of Analyses Performed: _____
Address _____

Phone (____) _____ - _____

SECTION H. OTHER INFORMATION

1. For New Dischargers

Describe any technical evaluations and reports.

NONE

2. For All Dischargers—(OPTIONAL)

Expand upon answers to any questions or provide further information.

NPDES Number PA _____

SECTION I. CERTIFICATION AND SIGNATURE OF APPLICANT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

John V. Cornell, Twp. Manager
Print Name and Title of Person Signing

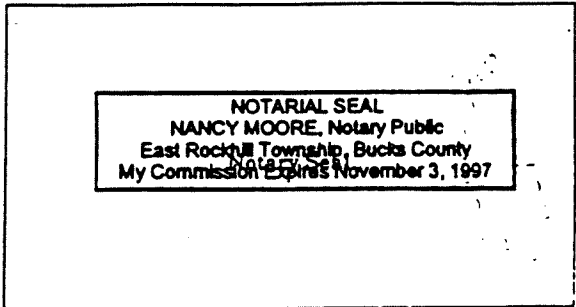
Sworn and subscribed to before me this

4 day of March, 19 96

(215) 257-9156
Telephone Number of Person Signing

Nancy Moore
Notary Public

John V. Cornell
Signature of Applicant



3/4/96
Date Application Signed

Please note below the name, address and telephone number of the individual that should be contacted in the event additional information is required:

Name: C. Robert Wynn Associates, Inc.

Address: 211 W. Broad Street
Quakertown, PA 18951

Telephone: (215) 536-7336



Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
May 3, 1996

Southeast Regional Office

610-832-6130
Fax 610-832-6133

Mr. Wayne V. Doyle, P.E.
c/o C. Robert Wynn Associates, Inc.
Consulting Engineering
211 West Broad Street
Quakertown, PA 18951

Re: Preliminary Treatment Requirements
East Rockhill
Bucks County

Dear Mr. Doyle:

This is in reply to your April 9, 1996 request for Preliminary Treatment Requirements for a discharge of 0.12 million GPD gallons per day to along the East Branch of the Perkiomen Creek.

The following are the Preliminary Treatment Requirements for the project described above:

1. Advanced Secondary Treatment without Nitrification (CBOD5 = 15 - 25 mg/l, NH3-N greater than 15 mg/l)
2. Phosphorus Removal Required (2 mg/l as P, April-October)
3. Suspended Solids of 30 mg/l or less
4. pH = 6 - 9 standard units, fecal coliform = 200/100 ml
5. TRC = 0.5 PPM



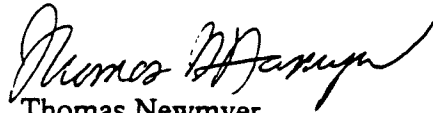
Mr. Wayne V. Doyle, P.E.

- 2 -

May 3, 1996

Please note that these requirements are preliminary in nature. They are offered only to aid in the preparation of the required alternative analysis.

Sincerely,



Thomas Newmyer
Water Quality Specialist
Water Management

cc: Mr. Cornell
Planning Section
Re 30 (RN)122-3

PENNSYLVANIA NATURAL DIVERSITY INVENTORY


REVIEW RESPONSE

REQUESTER: Mr. Wayne V. Doyle
C. Robert Wynn Associates, Inc
211 West Broad Street
Quakertown, PA 18951

PROJECT: Act 537, East Rockhill Township, Bucks County

QUADRANGLE: *Quakertown*

In response to your request of April 12, 1995 an area was reviewed for the presence of natural resources of special concern using the Pennsylvania Natural Diversity Inventory (PNDI) information system. We do not anticipate any impact on rare, threatened or endangered species at this location.


PNDI staff

5/1/95
Date

PNDI is a site specific information system which describes significant natural resources of Pennsylvania. This system includes data descriptive of plant and animal species of special concern, exemplary natural communities and unique geological features. PNDI is a cooperative project of the Department of Environmental Resources, The Nature Conservancy and the Western Pennsylvania Conservancy. This response represents the most up-to-date summary of the PNDI data files. However, an absence of recorded information does not necessarily imply actual conditions on-site. A field survey of any site may reveal previously unreported populations. PNDI is partially funded through contributions to the Wild Resource Conservation Fund.

Be advised that legal authority for Pennsylvania's biological resources resides with three administrative agencies. The enclosure titled PNDI Species List, outlines which species groups are managed by these agencies. If you have questions concerning this response or the PNDI system, please contact our office at 717/787-3444 or write:

DER - Bureau of Forestry - PNDI
P.O. Box 8552
Harrisburg, PA 17105-8552

PENNSYLVANIA NATURAL DIVERSITY INVENTORY

SPECIES LISTS

The statutory authority for Pennsylvania's animals and plants resides with three separate agencies. The Pennsylvania Department of Environmental Resources has the responsibility for management of the Commonwealth's native wild plants. The Pennsylvania Fish and Boat Commission is responsible for management of fish, reptiles, amphibians and aquatic organisms within the Commonwealth. The Pennsylvania Game Commission has the responsibility for managing the state's wild birds and mammals.

For information on current species status, please consult the appropriate agency. Requests for information should be directed to:

Plants and PNDI - general

Plant Program Manager
PA Department of Environmental Resources
Bureau of Forestry
Forest Advisory Services
P.O. Box 8552
Harrisburg, PA 17105-8552
(717) 787-3444

FISH, REPTILES, AMPHIBIANS, AQUATIC ORGANISMS

Endangered Species & Herpetology Coordinator
Pennsylvania Fish & Boat Commission
Bureau of Fisheries and Engineering
450 Robinson Lane
Bellefonte, PA 16823
(814) 359-5113

BIRDS and MAMMALS

Pennsylvania Game Commission
Bureau of Wildlife Management
2001 Elmerton Avenue
Harrisburg, PA 17110-9797
(717) 787-5529

For information on species listed under the federal Endangered Species Act of 1973 occurring in Pennsylvania, contact:

Endangered Species Biologist
U.S. Fish and Wildlife Service
315 South Allen Street, Suite 322
State College, PA 16801
(814) 234-4090

C. ROBERT WYNN ASSOCIATES, INC.

Consulting Engineering
211 West Broad Street
Quakertown, PA 18951

(215) 536-7547
(215) 536-7336

April 12, 1995

Mr. Ed Dix
Commonwealth of Pennsylvania
Dept. of Environmental Resources
Bureau of Forestry
P.O. Box 8552
Harrisburg, PA 17105-8552

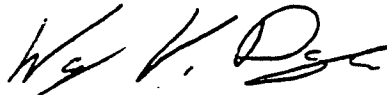
Subject: East Rockhill Township Act 537
Bucks County
File No. 13-012

Dear Mr. Dix,

In accordance with our telephone conversation of April 12, 1995, I am requesting a Pennsylvania Natural Diversity Inventory (NPDI) for the East Rockhill Township Act 537 Plan. The Township proposes to construct a wastewater treatment facility on TMP #12-13-6-1 and a wastewater collection line along the East Branch Perkiomen Creek. Wastewater treatment facility is located on USGS Telford Quadrangle 22.2 inches up and 4.2 inches left from the lower right hand corner. The wastewater collection line will terminate on the USGS Quakertown Quadrangle 2.4 inches up and 2.2 inches left of the lower right hand corner.

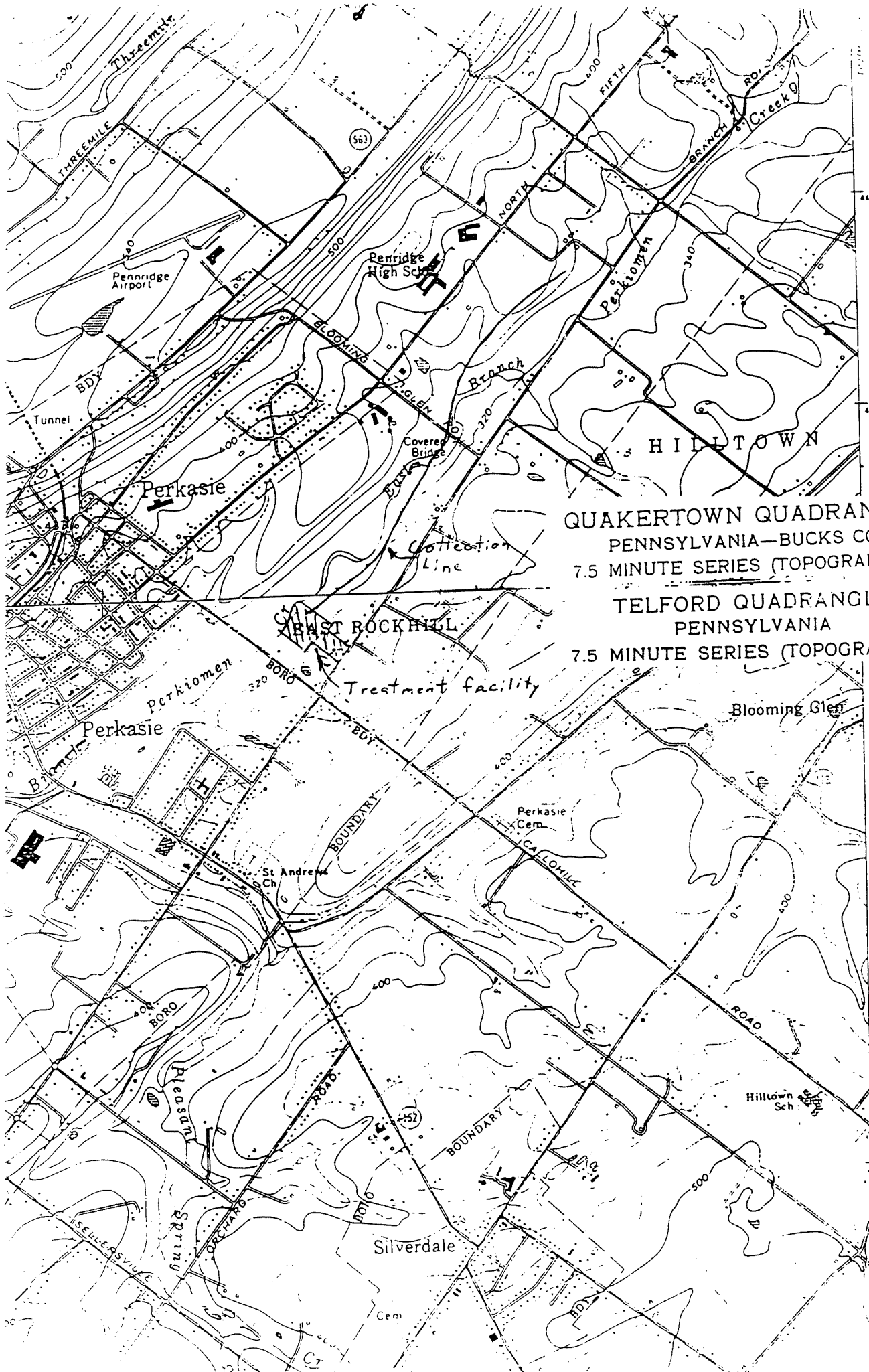
If you have any questions or require additional information, please do not hesitate to contact this office.

Sincerely,



Wayne V. Doyle

WVD/ajb



QUAKERTOWN QUADRANGLE
 PENNSYLVANIA—BUCKS CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)
 TELFORD QUADRANGLE
 PENNSYLVANIA
 7.5 MINUTE SERIES (TOPOGRAPHIC)

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Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Post Office Box 1026
Harrisburg, Pennsylvania 17108-1026

P. 01

June 15, 1995

**TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER**

Wayne V. Doyle
C. Robert Wynn Associates, Inc.
211 West Broad Street
Quakertown, PA 18951

Re: File No. ER 95-2029-017-B
DER 537 PROGRAM:
Wastewater Facilities Plan
East Rockhill Twp., Bucks Co.

Dear Mr. Doyle:

The Bureau for Historic Preservation has reviewed the above named project under the authority of the Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988). This review includes comments on the project's potential effect on both historic and archaeological resources.

A HIGH PROBABILITY EXISTS THAT ARCHAEOLOGICAL RESOURCES MAY OCCUR WITHIN THE PROPOSED PERMIT AREA

Based on an evaluation by our staff, there is a high probability that significant archaeological sites are located in this project area and could be adversely affected by project activities. Although there are no recorded archaeological sites within the project boundaries, the soil type, topographic setting, slope direction, and distance to water of the project area are similar to the settings of known archaeological sites in the vicinity. A Phase I archaeological survey of the project area to locate potentially significant archaeological resources is recommended but not required.

If a survey is not conducted and you encounter archaeological resources during construction, you must stop the project, notify the Pennsylvania Historical and Museum Commission's Bureau for Historic Preservation and the Department of Environmental Resources and allow the Bureau for Historic Preservation 60 days to conduct a survey to determine the significance of the archaeological resources. If the Bureau determines that the resources are significant, you must submit a mitigation plan to protect the significant resources on the site. We will review the plan within 30 days.

Page 2
June 15, 1995
Wayne V. Doyle

In our opinion no evaluation of historic structures will be necessary for this project area.

FOR YOUR INFORMATION

The Pennsylvania Historical and Museum Commission will keep the Determination Notice and the materials you submitted in its files. Please attach this letter to your copy of the Notice and materials then submit the entire package of materials to DER.

If this project will require any federal permits or will receive federal funding, the federal agency, under the National Historic Preservation Act of 1966, may require the appropriate surveys to be conducted. We suggest that you consider conducting the survey early in the development or planning process to avoid delays in the future. Guidelines and instructions for conducting Phase I surveys are available from our office upon request.

Thank you for notifying us of your proposed activity.

If you need further information in this matter please consult Gretchen Yarnall at (717) 787-9121.

Sincerely,



Kurt W. Carr, Chief
Division of Archaeology &
Protection

cc: Nina Huizinga

KC/tmw

0-012

PROJECT NARRATIVE

East Rockhill Township proposed to construct a wastewater treatment facility on TMP #12-13-6-1 located along East Branch Perkiomen Creek and a sanitary sewer collector line east of treatment facility 280 feet along the south bank and 50 feet along the north bank of the East Branch Perkiomen Creek. East of Blooming Glen Road, the proposed sanitary sewer collection system diverges from the East Branch Perkiomen Creek to terminate at the proposed Fenley Tract Subdivision (TMP #12-14-29). (Refer Development Area/Subarea "B", Figure 7-6, of the Wastewater Facilities Plan PA Act 537, East Rockhill Township, for sanitary sewer line location) The Wastewater Treatment Facility is located on the USGS Telford Quadrangle Map 22.2 inches up and 4.2 inches left of the lower right hand corner, and the terminus of the proposed sanitary sewer collection line is located on the USGS Quakertown Quadrangle Map 2.4 inches up and 2.2 inches left of the lower right hand corner.

Existing buildings located on the proposed wastewater treatment facility tract will be demolished. The buildings are frame construction used for storage, and have been vacant for approximately 10 years. Construction of the proposed sanitary sewer collection line will not require the demolition or relocation of any existing structures. Mood's Covered Bridge on Blooming Glen Road crossing East Branch Perkiomen Creek listed on the National Register File, Key #050735, will not be affected by proposed construction activities.

The approximate cost for a Phase I archaeological survey is \$15,000.00.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

HISTORICAL RESOURCES DETERMINATION NOTICE

SEE INSTRUCTIONS ON REVERSE SIDE

Sections 1 - 5 to be completed by applicant:

- (1) Project Applicant's Name and Project Title East Rockhill Township
Wastewater Facilities Plan, PA Act 537
- (2) Location of Project (Municipality, County) East Rockhill Township, Bucks County
- (3) DER Permit or DER Approval Requested Wastewater Facilities Plan - PA Act 537
- (4) DER Regional Office Responsible for Review of Permit Application
Southeast Regional Office
- (5) Please attach a 7.5' U.S.G.S. Map indicating the defined boundary of the proposed activity.
- (6) Please attach a narrative description of the proposed activity.
- (7) Please include the estimated cost of archaeological surveys or archaeological field investigations at this location.

4/13/95
Date of Submission of Notice to PHMC

C. Robert Lynn
Applicant's Signature

Sections 8 - 10 to be completed by PHMC:

- (8) Historic Structures (check appropriate block)
 - The proposed operation will have no affect on historic structures.
 - The proposed operation will affect a historic structure listed on the National Register of Historic Places.
 - The proposed operation will affect a historic structure eligible for listing on the National Register of Historic Places.

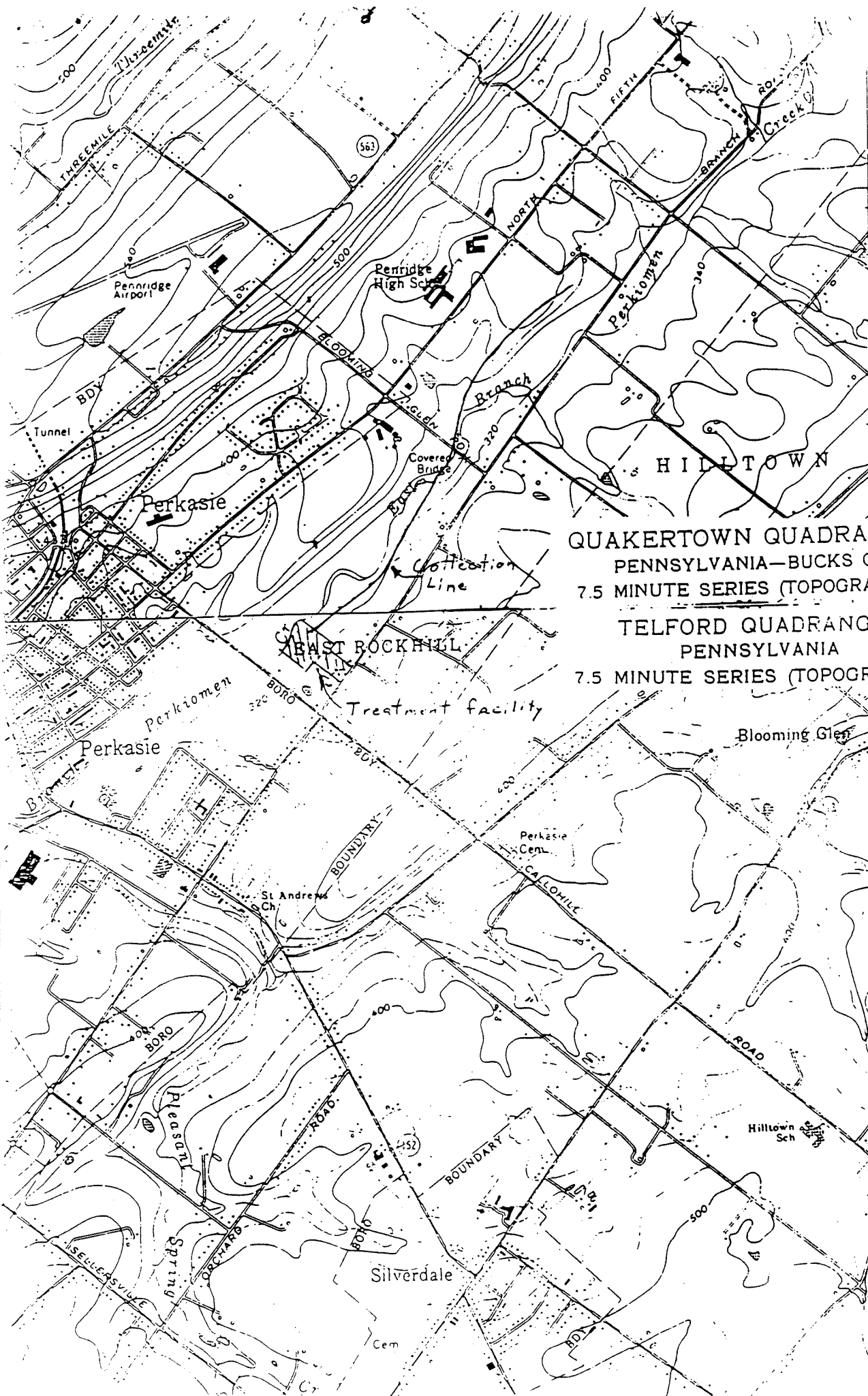
Archaeologic Resources (check/complete appropriate blocks)

- The proposed operation will have no affect on archaeologic resources.
- A known archaeological site exists within the proposed permit area. The Pennsylvania Archaeologic Site Survey (PASS) Number is _____ The PHMC has _____ has not _____ determined that the site is a significant archaeological site.
- A high probability exists that archaeologic resources may occur within the proposed permit area.

- (9) Please indicate on the attached map the location of historic resources.
- (10) The Pennsylvania Historical and Museum Commission (check correct response)
 - _____ Intends to Conduct a Survey
 - _____ Does not Intend to Conduct a Survey

Date of Determination

Executive Director
Pennsylvania Historical and Museum Commission



QUAKERTOWN QUADRANGLE
 PENNSYLVANIA—BUCKS CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)

TELFORD QUADRANGLE
 PENNSYLVANIA
 7.5 MINUTE SERIES (TOPOGRAPHIC)

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Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

Southeast Regional Office

APR 19 1006

610-832-6130
Fax 610-832-6259

John V. Cornell
East Rockhill Township
1622 Ridge Road
Perkasie, PA 18944

Re: Valley Green Subdivision, Phase I,
AKA The Fenley Tract Project
Code No. 1-09922-122-3H,2
East Rockhill Township
Bucks County

Dear Mr. Cornell:

Please be advised that we have completed our review of the above referenced Planning Module for Land Development amending your municipality's Official Sewage Facilities Plan.

This revision to the East Rockhill Township Official Sewage Facilities Plan meets the requirements of Chapter 71 of our Rules and Regulations.

Approval is hereby granted, and in accordance with this Chapter, East Rockhill Township is responsible for implementing this revision as per the approved module.

This revision provides for adequate sewage facilities planning to permit the development of Phase I, a 85 unit residential complex on 60.38 acres, located on the East Side of Fifth Street, South of Schwenk Mill Road. The project will generate 22,312.5 gallons of sewage per day to be treated by the Pennridge Wastewater Treatment Authority sewage treatment plant.

Capacity for this project is provided consistent with the Pennridge WWTAA Chapter 94 Wasteload Management Report.

Please be advised that Phase II, III and IV will require additional planning approval by the Department. Formal approval of the Official Act 537 Plan Update for East Rockhill Township will be required before the Planning Modules for Phase II, III and IV can be accepted for approval.

As a result of enactment of Act 40, collector sewers which will not serve more than 250 single family dwelling units or their equivalent sewage flow do not need a permit for construction and operation under the Pennsylvania Clean Streams Law. This planning approval, as it applies to these

APPENDIX B

**WASTEWATER
FACILITIES PLAN**

Pennsylvania Act 537

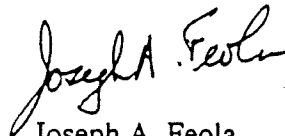
APR 19 1996

facilities, is given on the condition that collector sewers qualifying for the permit exemption must be designed, constructed and operated in accordance with the technical standards and practices contained in the Department's Sewerage Manual. All portions of new or modified sewage facilities included in this planning approval which do not qualify for the permit exemption, such as trunk lines, pump stations, force mains, and treatment plants must obtain a Clean Streams Law permit from the Department prior to construction or modifications. The permit exemption created by Act 40 applies only to permits under the Clean Streams Law. Other Department permits may be required for construction of collector sewers if encroachments to streams or wetlands will result.

The Department has determined that there are mapped wetlands within your proposed development. You are hereby notified that an encroachment permit under Title 25, Chapter 105 of the Rules and Regulations of the Department must be obtained from the Department prior to any construction which will encroach on wetlands.

If you have any questions, please feel free to contact this office.

Sincerely,



Joseph A. Feola
Regional Manager
Water Management

cc: Bucks County Health Department
Bucks County Planning Commission
Mr. Newmyer
Showalter and Associates, Inc.
Cruz Bay Properties
C. Robert Wynn Associates, Inc.
Pennridge Wastewater Treatment Authority
Mr. and Ms. Fenley
Ms. Moore
Ms. Toson
Planning Section
Re 30 (RN)53-17



BOROUGH of SELLERSVILLE

INCORPORATED DECEMBER 7, 1874

LOCATED ON THE LIBERTY BELL TRAIL

140 East Church Street

Phone (215) 257-5075

Fax (215) 257-6163

Sellersville, PA 18960

Joseph E. Hufnagle, Sr. — Mayor
Alan S. Frick — Manager/Secretary
Richard D. Coll — Finance/Zoning Officer

BOROUGH COUNCIL

PRESIDENT

Howard W. Eckert, Jr.

VICE-PRESIDENT

Alexander M. Potoczny, Jr.

Frank W. Wenger, Jr.

Douglas J. Smith

Russell F. Dorn

Virginia L. Kinsey

Francis D. Roeder

March 20, 1996

C. Robert Wynn, Associates Inc.
Mr. C. Robert Wynn, P.E.
211 West Broad Street
Quakertown, PA 18951

RE: Old Bethlehem Pike/Ridge Road Area
Sanitary Sewer Facilities
East Rockhill/West Rockhill Twps.
File No. 12-036

Dear Mr. Wynn:

In response to yours of November 20, 1995, the Public Utilities Committee has concluded that it would be most practical for you to provide sanitary sewer service to those five (5) dwelling units located in West Rockhill Township. This area, under prior Agreement with West Rockhill Township, was to be sewered by Sellersville Borough but in accord with your proposed scheme, it would be best sewered by East Rockhill Township. I presume from your correspondence that you will be contacting West Rockhill Township for this extension and approval.

With regard to the interconnection with the Borough of Sellersville sanitary sewer system, the Committee believes you should explore other alternatives to achieve the desired result of extending sanitary sewer to this portion of the Township.

Very truly yours,

Alan S. Frick
Borough Manager

ASF/cjs

C/C: West Rockhill Twp.
Borough Officials



BUCKS COUNTY Planning Commission

Robert E. Moore, Executive Director

COUNTY COMMISSIONERS:
Chairman, CHARLES H. MARTIN
MICHAEL G. FITZPATRICK
SANDRA A. MILLER

PLANNING COMMISSION:
Chairman, Susanne McKeon
Vice Chairman, Harold W. Tesno, Sr.
Secretary, Robert H. Grunmeier
Daniel K. Cook
Alan R. Fetterman
Geryl D. McMullin
James J. Stoeckert
Joseph G. Szafran, Jr.
Clifford J. Worthington

September 4, 1996
BCPC#12-96-WS1

MEMORANDUM

TO: East Rockhill Township Board of Supervisors
East Rockhill Township Planning Commission

FROM: Bucks County Planning Commission

SUBJECT: Proposed Wastewater Facilities Plan Update
Applicant: Board of Supervisors
Received: August 5, 1996
Hearing Date: Unknown

In accordance with the provisions of Section 304(4) of the Pennsylvania Municipalities Planning Code, this proposal has been sent to the Bucks County Planning Commission for review. The review which follows was prepared by the staff and endorsed by the Bucks County Planning Commission at a meeting held on September 4, 1996.

GENERAL INFORMATION

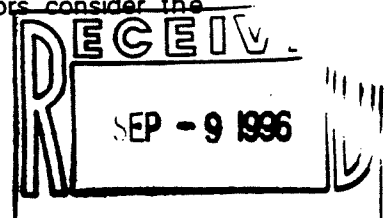
Proposed Action: To update the official Act 537 wastewater facilities plan for East Rockhill Township. The proposed update will amend the Pennridge Wastewater Facilities Plan (1988). The plan update examines four (4) study areas for adequacy of the public sewerage system (to meet the projected growth within the development area) and analyzes various alternatives for resolving failing on-lot sewage disposal systems for two areas of the township.

Study Area No. 1 (Development Area) is broken into three sub areas. The recommendation for Sub Area A is for continued reliance on the Pennridge Wastewater Treatment Authority for public sewer service. The plan update recommends the implementation of a collection and conveyance system associated with the construction of a new sewage treatment facility for Sub Area B. For Sub Area C, the plan recommends the extension of public sewer collection and conveyance for treatment at the facilities of the Pennridge Wastewater Treatment Authority.

Lastly, the plan recommends a program at public education and technical assistance for the limited number of failing on-lot systems throughout the remaining study areas. The long-term goal for Study Area No. 2 (Schwenk Mill Road) is for public sewer hook-up.

RECOMMENDATION Adoption

The Bucks County Planning Commission recognizes that the update of the sewage facilities plan for East Rockhill Township is not entirely consistent with the 1987 municipal comprehensive plan. However, the proposed plan has merit and seems feasible from a land use planning perspective. Therefore, we recommend that the township supervisors consider the



collective recommendations of all reviewing bodies before the plan is adopted. In addition, we recommend the following issues be considered:

1. Plan consistency
2. Package treatment plant with stream discharge
3. Regional wastewater treatment facility

BASIS OF RECOMMENDATION

1. Plan consistency--The wastewater facilities plan update identifies three sub-areas that it considers the township's development area which are intended to be serviced by public sewer facilities. However, this development area is significantly different than the Development Area as established in the township's 1987 comprehensive plan. Therefore, the wastewater facilities plan update is not consistent with the future land use plan in the comprehensive plan. A notable deviation is the wastewater facilities plan includes two areas of the township that the comprehensive plan designates Suburban (a Rural Area category) in its development area. As such the areas are proposed to be served by public sewers.

We also note that the township's zoning map is no longer consistent with the development area as delineated by the comprehensive plan. The most significant change is a large tract on Fifth Street was rezoned from a Rural Area zoning district to a Development Area district.

Finally, there are approximately 7 parcels along the northeastern side of Blooming Glen Road which are included within the Development Area (as identified in the comprehensive plan) which are not included in the Development Area in the wastewater facilities plan update.

In recognition of the changes that have occurred since the adoption of the comprehensive plan and the additional expansion of the development area that is contemplated by the proposed wastewater facilities plan, we recommend the following. First, the township planning commission and supervisors should determine that the inclusion of the comprehensive plan's Suburban Area in the Development Area is warranted in terms of providing the opportunity to accommodate the projected population for the township. If the township officials make that determination, we further recommend that the comprehensive plan be amended to reflect those changes to the existing land use planning policies. The amendment of the comprehensive plan is an important action so as to maintain its integrity as the document that establishes the land use planning policies of the township.

2. Treatment plan with stream discharge--In Sub Area B, the plan update proposes the construction of a new township owned and operated sewage treatment plant with the discharge of the effluent to the East Branch of the Perkiomen Creek. While we do not encourage the proliferation of stream discharge, the proposal is a feasible planning solution given that the treatment plant will service only a portion of the development area. Therefore, its impacts appear to be the same as those that would result if the area was served by the existing Pennridge Wastewater Treatment Authority (PWTA) treatment plant.

However, the proper long-range operation and maintenance of a proposed stream discharge facility is of utmost concern. Therefore, if approved, we recommend that appropriate plans for long-term operation and maintenance be completed and implemented by the township officials.

3. Regional wastewater treatment facility--It is apparent that disposal capacity allocation problems, which typically affect regional facilities like the PWTA plant, continue in the

Pennridge Area. We therefore encourage the officials of the municipalities strive to achieve a long-range planning program for sewage facilities to accommodate the development pressure in the Pennridge Area. A cooperative approach should continue in order to avoid future situations of unavailable capacity in the regional treatment plant leading the officials of one municipality to considering the construction of dispersed wastewater treatment facility:

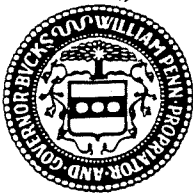
We would appreciate being notified of the Board of Supervisors' decision regarding this matter.

DAS:krc

cc: John Rice, Municipal Solicitor
Al Wills, Bucks County Department of Health
John V. Cornell, Township Manager
C. Robert Wynn Associates
Patrick Donovan, PWTA
Glenn Stinson, PaDEP

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN
RESPONSE TO BUCKS COUNTY PLANNING COMMISSION COMMENTS
MEMORANDUM SEPTEMBER 4, 1996**

1. **Plan consistency** - The Wastewater Facilities Plan Update has been prepared to provide adequate sewage facilities for development as permitted by the Township Zoning Ordinance. As noted in the Bucks County Planning Commission review, the Township's 1987 Comprehensive Plan is inconsistent with the Zoning Ordinance due to the prior rezoning of land along Fifth Street and Blooming Glen Road. Additionally, the Suburban Zoning District has been included within the "development area" to accommodate projected population and provide for adequate housing types. The Township intends to adopt an amendment to its Comprehensive Plan so the plan is consistent with the Wastewater Facilities Plan Update, and Zoning Ordinance as previously amended.
2. **Treatment plant with stream discharge** - As noted by the Bucks County Planning Commission, the proposed stream discharge facility long range operation and maintenance plans will be completed and implemented by East Rockhill Township during the design phase.
3. **Regional wastewater treatment facility** - The review notes that a cooperative approach should continue to avoid future situations of unavailable capacity at the regional treatment plant and achieve a long range planning program for sewage facilities within the Pennridge area. Within sub-area "A", the Township intends to continue to pursue cooperation with the Pennridge Wastewater Treatment Authority, to resolve differences in billing practices, capacity utilization, and representation; as well as provide for adequate future capacity.



COUNTY OF BUCKS

DEPARTMENT OF HEALTH

Health Building, Neshaminy Manor Center, Doylestown, PA 18901 - 215 - 345 - 3318

FIELD OFFICES

Bucks County Government Services Center, 7321 New Falls Road, Levittown, PA 19055 - 949 - 5805

Bucks County Government Services Center 515 West End Blvd., Quakertown, PA 18951 - 536 - 6500

County Commissioners

CHARLES H. MARTIN, Chairman

MICHAEL G. FITZPATRICK

SANDRA A. MILLER

Director

Lewis D. Polk, M.D., M.P.H.

September 12, 1996

Mr. C. Robert Wynn, PE
211 West Broad Street
Quakertown, PA 18951

**SUBJECT: Wastewater Facilities Plan Update
East Rockhill Township
Bucks County**

Dear Mr. Wynn:

We have received the subject Act 537 Plan up-date and offer the following comments:

1. Page 2-15-There are ten (10) holding tanks that exist in the Township
 - a. Emil;s Restaurant
 - b. Keelersville Club
 - c. Roher-1004 Old Bethlehem Pike
 - d. St. Peters
 - e. Seiger-12-13-10-1
 - f. Bernie Enterprises 12-8-21-3
 - g. Old Wagon Wheel Inn
 - h. Effrig, Jr. -2513 Old Bethlehem Pike
 - i. Chant-2525 Old Bethlehem Pike
 - j. General Crushed Stone
2. Pate 3-11 Paragraph 4 mention should be made that Bucks County Health Department now issues permits for Individual Residence Spray Irrigation Systems.
3. Page following 3-13 (table 3-3)
Under Soils Section
Add-on slopes over 25%
Add-on disturbed or fill soils
Under Slope Section
 1. Opened grassed area-Maximum 12%
(not limited to 8%)
 2. Wooded Areas (forested)-Maximum 25%
(not limited to 8%)

Under Ground Water Table Section

- Depth to Seasonal high water table-10 inches or more
- Depth to bedrock or rock formation-16 inches or more

Under Buffer Section

- 5. Streams/Water courses/Ponds-50 feet
(not 25 feet)
- 6. Wells-100 feet
(not 50 feet)

Under Sewage Treatment Plant Stream

- 4. Minimum treated Effluent Storage capacity 2,000 gallons
(not 1,000 gallons)

4. Page 5-2

First Paragraph under effluent treatment & Disposal options B.C.D.H. will be permitting IRSIS under Act 149

5. Page 5-5

- 4. Individual Spray Irrigation Systems
Holding Facility with a storage carry for 5 days flow-2,000 gallons minimum
(not 3 days flow-1,000 gallon minimum)

6. Page 7-45

Alternative #3-under description Schwenk Mill Road area, however this is under Keelersville/Butler Lane study area

7. Page 9-4

Keelersville/Butler Lane Study Area
Selected Alternative-2nd sentence due to limited # of failed systems 11 of 26 or 42% doesn't seem to be a limited number of failures.

8. Page 9-3

Schwenk Mill Road Study Area
Selected Alternative-2nd sentence due to limited number of failed systems 11 of 27 or 47% does not seem to be a limited number of failures

The above eight points were raised by our Sanitation Division in the Quakertown Office. If you have any questions on these items, please feel free to contact Scott Cressman at 215-536-6500.

The following items were raised by Everett Hogg of our Environmental Division

- 1. Chapter 2 - Figure 2-9
 - 6. Clymer Health Clinic is now Success Rehabilitation, Inc. at Rock Ridge
Page 2-17
TMP 12-6-37 (Clymer Health Clinic) should be changed from table 2-11 to table 2-10 as this plant is in operation. Note name change
- 2. Development Study Area - sub-area B-We would not encourage another treatment plant if at all possible.

Sincerely yours,



Albert W. Wills, P.E., Chief
Division of Environmental Engineering

Aww/jvs

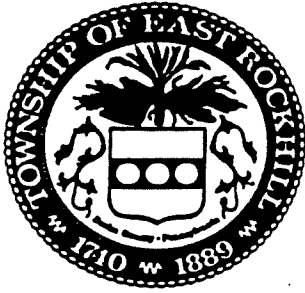
cc: E. Rockhill Twp.

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN
RESPONSE TO COUNTY OF BUCKS DEPARTMENT OF HEALTH
CORRESPONDENCE DATED SEPTEMBER 12, 1996**

1. Location of holding tanks as noted by the Bucks County Health Department have been added to the technical summary.
2. Wastewater Facilities Plan has been revised to identify that the Bucks County Health Department now issues permits for individual residence spray irrigation systems.
3. Table 3-3 regarding the individual residence spray irrigation systems has been revised in accordance with Bucks County Health Department recommendations.
4. Plan has been revised to indicate the Bucks County Health Department will be issuing permits for individual residence spray irrigation systems.
5. Plan has been revised to indicate that individual residence spray irrigation systems must have a holding facility with storage capacity for 5 days of flow or 2,000 gallons minimum as recommended by the Bucks County Health Department.
6. Alternate #3 under Keelersville/Butler Lane Study Area has been revised in accordance with the comments of the Bucks County Health Department.
7. The conclusion "due to the limited number of failed systems" has been revised to "due to the small number of failed systems" within the selected alternative for the Keelersville/Butler Lane Study Area. Although the percentage (42%) appears substantial, only 11 systems have been identified as failed within the area.
8. The conclusion "due to the limited number of failed systems" has been revised to "due to the small number of failed systems" within the selected alternative for the Schwenkmill Road Study Area. Although the percentage (47%) appears substantial, only 11 systems have been identified as failed within the area.

Additional items raised by Everitt Hogg of the Environmental Division:

1. "Clymer Health Clinic" has been changed to "Success Rehabilitation, Inc. at Rock Ridge" and noted as a plant in operation as recommended by Bucks County Health Department.
2. Due to the immediate need for treatment capacity within the development study area sub-area "B", unavailable capacity at the Pennridge Wastewater Treatment Authority, litigation between East Rockhill Township and Pennridge Wastewater Treatment Authority, and failure of the Pennridge Wastewater Treatment Authority to advance required studies, plans, and construction for a plant expansion to provide additional capacity; an East Rockhill treatment plant is proposed for sub-area "B".



EAST ROCKHILL TOWNSHIP

BOARD OF SUPERVISORS

1622 RIDGE ROAD, PERKASIE, PA 18944-2296

PHONE (215) 257-9156

FAX (215) 257-1299

Planning Commission
September 4, 1996

Minutes

Present: Chairperson Nancy Booz, Willard Markey, Brenda Sears, Dean Frankenfield, Gary Volovnik and Roger Arnold. Also present were John V. Cornell Township Manager and members of the Public.

Business:

Following review and presentation of the proposed 537 Sewage Facilities Plan dated August 2, 1996 by Mr. C. Robert Wynn Township engineer. And review of the Bucks County Planning Commission review letter dated September 4, 1996. By way of motion by Roger Arnold, second by Willard Markey vote all in favor the Commission recommended the Board of Supervisors adopt the plan as proposed.

No other formal action was taken.

Respectfully Submitted,

John V. Cornell



180 MAPLE AVENUE
POST OFFICE BOX 31
SELLERSVILLE, PA 18960-0031
(215) 257-6355
FAX (215) 257-1749

PENNRIDGE WASTEWATER TREATMENT AUTHORITY

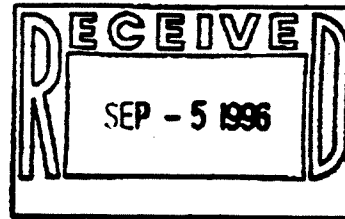
September 3, 1996

East Rockhill Township Board of Supervisors
1622 Ridge Road
Perkasie, PA 18944

Attention: Mr. John Cornell, Township Manager

VIA: FEDERAL EXPRESS

Subject: East Rockhill Township
Act 537 Plan Revision



Dear Mr. Cornell:

The Pennridge Wastewater Treatment Authority (PWTA) Board and staff have reviewed the summary of the Act 537 plan revision proposed for adoption by the East Rockhill Township Board of Supervisors. We offer the following comments for your consideration.

1. **The plan does not provide sufficient data for PWTA to plan its expansion.** The plan does not provide an estimate of the number of EDUs and/or flow to be discharged from the combined sub-areas A and C to the PWTA system. Furthermore, the projection of 33 EDUs from sub-area C appears to consider only immediate needs. The projection does not forecast needs for a 10 to 20-year planning period, as we require and have requested.
2. **The plan could have adverse impacts on the PWTA effluent limits.** We are concerned that the addition of an upstream treatment plant and the consequent discharge to the Perkiomen Creek would reduce the allowable loading from the PWTA plant. By copy of this letter, we are asking that the PA DEP advise us on the effects of this discharge on the calculation of the PWTA effluent limits. Our experience indicates that the Perkiomen Creek environment may not be reliably protected by a smaller, lesser staffed package plant.
3. **The plan should evaluate the option of the PWTA providing wastewater treatment to all sub-areas.** We believe the economies of scale provided by the larger pre-existing PWTA facilities should provide treatment capacity at a significantly lower cost. Similarly, the user cost of roughly \$100 per EDU cannot be matched by a smaller, start-up plant. These factors may provide a more cost-effective alternative.

East Rockhill Township
Board of Supervisors
September 3, 1996
Page 2

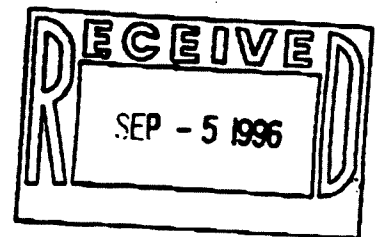
We respectfully offer these preceding comments for your consideration prior to the adoption of the Act 537 Plan. We would appreciate the opportunity to review these issues with you if you so desire.

Sincerely,



Patrick R. Donovan
Manager

cc: Charles Rehm, PA DEP
Alfred Ciottoni, Smith Env.
PWTA Board & Staff
David Sebastian, BCPC



**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN
RESPONSE TO PENNRIDGE WASTEWATER TREATMENT AUTHORITY
CORRESPONDENCE DATED SEPTEMBER 3, 1996**

1. **The plan does not provide sufficient data for PWTA to plan its expansion.** - As noted on page 7-6 of the plan, based on East Rockhill Township determination of remaining plant capacity, a total of approximately 642 EDU's would be available at the PWTA treatment plant for use within sub-area "A". This would provide sufficient capacity for future development within the area, possible future extension of public sewer facilities to the Schwenk Mill Road area, and account for infiltration/inflow into the East Rockhill Township sanitary sewer collection system contributing to infiltration/inflow problems at the PWTA plant. Capacity purchase/utilization is the subject of litigation between East Rockhill Township and the Pennridge Wastewater Treatment Authority (PWTA).
2. **The plant could have adverse impacts on the PWTA effluent limits.** - The proposed treatment plant will be operated in accordance with PADEP requirements, including effluent discharge limits. PWTA correspondence notes that "our experience indicates that the Perkiomen Creek environment may not be reliably protected by a smaller, lesser staffed package plant." East Rockhill Township has received no information from PWTA to provide a basis for this comment, and further questions the statement in light of the current hydraulically overloaded condition of the PWTA plant. A smaller, professional staff with a state-of-the-art treatment plant should provide better protection of the environment than a treatment plant operated by an Authority, which has failed to adequately address infiltration and in-flow problems over a twenty year period.
3. **Plan should evaluate the option of PWTA providing wastewater treatment to all sub-areas.** - PWTA's comment that they can provide treatment capacity at a lower cost must be reviewed in light of PWTA's history in meeting the expectations and contractual obligations set forth in the current intermunicipal Treatment Agreement. East Rockhill Township purchased 371,000 gallons in 1975 and in early 1995 was informed by PWTA that it no longer had any capacity. At the time of this notification, East Rockhill Township had approximately 600 connections to its collection system. It was only after litigation that the PWTA Board provided an additional 124 sewer capacity connections, an amount still well below the Township's original purchased capacity. Currently, East Rockhill's total sewer connections will be limited to approximately 700, well below what PWTA has allowed other participating municipalities which have actually purchased less capacity than East Rockhill Township. This is merely one specific example of the "economics of scale" which the PWTA Board has suggested by their comment as being cost effective. It is East Rockhill's position that the majority voting members on the PWTA Authority, Sellersville Borough, and Perkasie Borough Authority have essentially co-opted the operation of PWTA Authority for their own benefit and until that situation is remedied, the PWTA Board is not in a position to suggest that they can guarantee an established amount of sewer capacity at a specific cost. The elected officials of the Township would, in effect, be forfeiting their obligations to the East Rockhill Township taxpayers and residents by contracting yet again with an entity for additional sewer service when that entity, through its majority members, has a record of not abiding by existing contractual obligations with East Rockhill Township. Finally, although there has been a prohibition

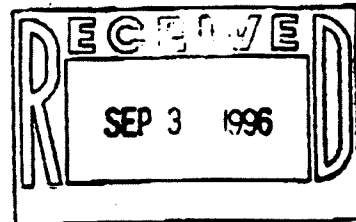
**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN
RESPONSE TO PENNRIDGE WASTEWATER TREATMENT AUTHORITY
SEPTEMBER 3, 1996**

Page 2

at the PWTA plant imposed by PADEP since July 28, 1993, East Rockhill Township has received no proposal, drafts, plans or schedule regarding plant expansion and/or Act 537 plan revision to provide for additional treatment plant capacity. Due to the immediate need for treatment plant capacity, ongoing litigation, East Rockhill Township experience with the Pennridge Wastewater Treatment Authority, and lack of adequate regional planning; expansion of the PWTA to meet East Rockhill Township sewage treatment needs is not a viable option.

117 Dublin Way
Perkasie, PA 18944
August 27, 1996

EAST ROCKHILL TOWNSHIP SUPERVISORS
Ridge Road
Perkasie, PA 18944



Dear Sir or Madam:

This letter is in regard to the consideration to adopt Act 537 Wastewater Facilities Plan and to erect a sewer treatment plant on Branch Road. We as local residents are strongly opposed to the building of the sewer treatment plant on the ten acres purchased on Branch and Callowhill Roads.

It has been stated that the proposed plant will provide service for the Fenley farm development, the Weidner farm development, residents of Ridge Road and Old Bethlehem Pike who now have malfunctioning on-site systems, Schwenkmill Road, and Keelersville-Butler Lane. Geographically, none of these locations are near the proposed site. Why should we, the residents who live even closer than the locations listed above, have to put up with the sight, sound, and smell of this plant? We feel that if developers want to build in our Township, they should also have to build the treatment center on their property.

Following are a few questions that we feel need answers. They are:

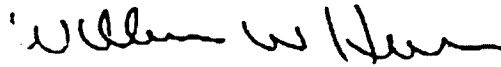
- 1) What is the cost of this treatment plant to the Township residents? It will cost money to build it and to operate it. Why should we, the residents who already have sewer hookups, have to pay out more tax dollars just to enable new homes to be built?
- 2) Are the residents in the vicinity of the proposed plant going to be compensated for the obvious decrease in property value when this unsightly plant is built?
- 3) Will the treatment plant be illuminated at night, thereby, bringing to an end the feeling for local residents of being out in the country? If you will notice, there are no street lights in the vicinity of the proposed plant; and we want it to stay that way. If we wanted street lights, we would have moved to the city.
- 4) Why should we the residents of East Rockhill Township bear the cost of the treatment plant when it is so plain to see that the developers of the Fenley and Weidner farms (and any future developments) will be the obvious winners who will pocket all the profit? If the developers don't have Pennridge Wastewater Treatment Authority hookups, then require these same developers to supply their developments with the treatment plant. Better yet, why doesn't East Rockhill Township only allow as many new homes to be built as there

are hookups available from the PWTA? Why do we have to continue building - why can't we stay rural?

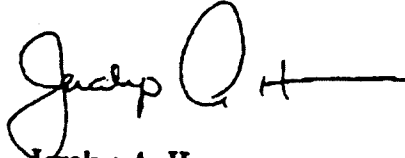
In closing, we would like to say that we feel it is unfair to expect the residents of the Township to help finance the treatment facility when it will be the developers of the new developments who will be laughing all the way to the bank with the profits. They will be long gone from our area while our taxes will still be paying the bill for the plant, and the building itself will never go away. It will be an eyesore forever.

Because the Township and PWTA can't seem to be able to come to an agreement, why should we be the victims by having to pay more tax dollars for something WE DON'T WANT!

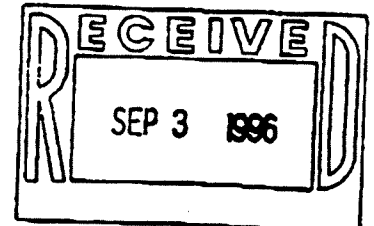
Sincerely,



William W. Harm



Jeralyn A. Harm



**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN
RESPONSE TO CORRESPONDENCE FROM WILLIAM W. AND JERALYN A. HARM
DATED AUGUST 27, 1996**

The following is a response to the questions raised in the William W. and Jeralyn A. Harm correspondence:

1. There is no cost to Township residents for the proposed treatment plant. The treatment plant will be financed by future users within the Suburban Zoning District.
2. East Rockhill Township has no information to indicate there will be a decrease in property value due to construction of a well designed, operated, and buffered treatment facility. The Township does not propose to construct an "unsightly plant".
3. The treatment plant will be illuminated at night in a manner that will not be offensive or obtrusive to adjoining properties. We also note that this area is zoned Suburban which is a moderately dense residentially zoned district. Street lights (not currently existing along most streets, as noted within the correspondence) are required to be installed in future developments within the Suburban Zoning District in accordance with Subdivision Regulations.
4. Existing residents of East Rockhill Township will not bear the cost of the treatment plant and developers of vacant property within the Suburban District will not be "obvious winners" as indicated in the correspondence. Future users of the treatment plant will pay the cost of plant construction and operation.

September 4, 1996

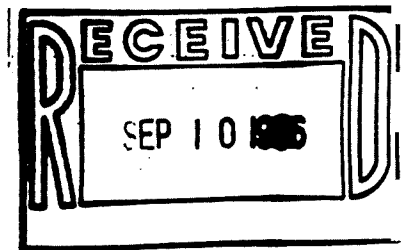
East Rockhill Township
1622 Ridge Road
Perkasie, PA 18944

Dear Supervisors:

We are concerned about the sewage treatment plant proposed to be constructed along the East Branch of the Perkiomen Creek near our home on Seven Corner Road to serve the future development in the area. Our concerns are numerous, and range from the obvious, like a devaluation of our property because of its proximity to the proposed treatment plant to less obvious, like the economic infeasibility of maintaining and operating a treatment plant with only a few hundred customers.

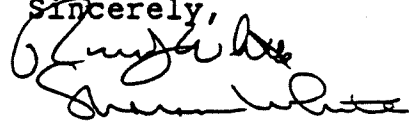
Our area is zoned residential and/or agricultural and should be used solely for residential and agricultural purposes. A treatment plant will increase traffic on the roads (sludge hauling, visits to maintain equipment, etc.) that are not built to handle increased traffic and/or heavier vehicles. A treatment plant will generate noxious odors (anyone who says otherwise is either lying or born without olfactory glands). A treatment plant could have accidental discharges that could pollute the stream and/or our groundwater.

As you are aware, some of East Rockhill's residents have their sewage treated at the Pennridge Wastewater Treatment Authority plant located in Sellersville. Instead of building a new plant that will require a new maintenance staff (two certified sewage treatment plant operators) and detailed effluent analysis to assure compliance with its discharge permit, why not use the money that would have built the new plant to enlarge, upgrade and/or modernize the existing plant? The economics of running a treatment plant with a limited number of customers will eventually result in tax dollars being used to supplement the revenues from the treatment plant users.



The proposed treatment plant doesn't belong in our neighborhood. Please work toward the best interests of the residents in the Township to develop a better alternative.

Sincerely,



Sharon and Randy White
135 Seven Corner Road
Perkasie, PA 18944

cc: Department of Env. Prot.
Bucks County Health Department

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN
RESPONSE TO CORRESPONDENCE FROM SHARON AND RANDY WHITE
DATED SEPTEMBER 4, 1996**

Mr. and Mrs. White who reside at 135 Seven Corner Road, Perkasie, PA 18944 have expressed several concerns regarding the proposed sewage treatment plant to be constructed to service the development study area - sub-area "B". Their comments/concerns include the following:

1. **A devaluation of property due to their proximity to a proposed treatment plant.** - East Rockhill Township has no evidence that construction of a well designed and maintained sewage treatment plant with appropriate buffering will reduce property values and, in fact, availability of sewage treatment capacity typically increases property value.
2. **The area is zoned Residential and/or Agricultural and should be solely used for residential and agricultural purposes.** - In fact, the study area - sub-area "B" is zoned Suburban which permits a variety of residential dwelling types, including performance standard subdivisions.
3. **Treatment plant will increase traffic, generate noxious odors, and could pollute stream and/or groundwater.** - The proposed treatment plant will be designed and operated in accordance with all State and local regulations.
4. The correspondence questions the viability of building a new treatment plant and suggests that the Township should use the money proposed for the new plant to enlarge, upgrade, and modernize the existing plant. As discussed within the plan, East Rockhill Township is currently in litigation with Pennridge Wastewater Treatment Authority (PWTA) over billing practices, and loss of purchased capacity. Additionally, although there has been a prohibition on connections to the PWTA plant since July 28, 1993, East Rockhill Township has not received any information from PWTA regarding planning for future capacity and does not anticipate that additional capacity at PWTA will provide immediate treatment capacity for proposed development within the Suburban Zoning District.

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN
ADDENDUM I
RESPONSE TO PADEP COMMENTS**

APRIL 21, 1997

**ADDENDUM I
WASTEWATER FACILITIES PLAN
FOR
EAST ROCKHILL TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA**

TABLE OF CONTENTS

Exhibit I-1	PADEP correspondence dated March 20 ,1997
Exhibit I-2	East Rockhill Township response to PADEP correspondence
Exhibit I-3	Table 7-4, Development Study Area revised April 4, 1997
Exhibit I-4	Table 7-4a, Development Study Area (PWTA documentation)
Exhibit I-5	Abraham G. Stover, PWTA Chairman memo dated March 17, 1997
Exhibit I-6	PWTA correspondence dated December 31, 1996
Exhibit I-7	Figure 2-13 Existing Sanitary Sewer Lines (pocket enclosure)
Exhibit I-8	Table 7-5, Development Study Sub-Area "B", Existing/Future Treatment Plant Requirements
Exhibit I-9	Table 7-3 PWTA Allocated Plant Capacity (revised April 4, 1997)
Exhibit I-10	Wastewater Treatment Facility site plan



Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
March 20, 1997

Southeast Regional Office

610-832-6130
Fax 610-832-6133

Mr. John Cornell, Manager
East Rockhill Township
1622 Ridge Road
Perkasie, PA 18944

Re: Act 537 Plan Update
Wastewater Facilities Plan
East Rockhill Township
Bucks County

Dear Mr. Cornell:

On October 23, 1996, this office received your Proposed Official Sewage Facilities Plan Update of East Rockhill Township, Bucks County, entitled Wastewater Facilities Plan for East Rockhill Township, as prepared by C. Robert Wynn Associates, Inc., dated September 17, 1996. This plan is being submitted to this Department in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program.

Prior to our approval, the following must be addressed:

1. If PWTA is hydraulically overloaded, it is not clear where the allocated capacity for Sub Area A is going to be obtained. Please clarify.
2. Please provide more specific information on how the overload problem at PWTA will be resolved by the time the collection and conveyance system for Sub Area C is completed. If it won't be resolved, explain why and give more specific detailed alternatives.
3. Has the possibility of PWTA expansion been discussed between the two parties involved? If there is a conflict between the two parties that can't be resolved, can it be justified and documented? The plan does not address this issue as an alternative. Why or why not?
4. On page 2-15 of the plan it makes reference to Figure 2.8 as being the existing sewer lines. However, Figure 2.8 is the existing floodplain and water shed map. Please clarify.
5. On page 2.17, it makes reference to Table 2.11 showing two innovative/alternative systems. Only one is listed. What is the other one?



6. The plan makes reference on page 3.5 and 3.6 about saving the new wastewater treatment plant capacity only for the new development area. What about the failed on-lot systems in the service area?
7. Why is only Public Education being used as the only alternative for improving the operation of existing on-lot systems? How does this address the problem of poor soils in these areas? Education won't change the soils. What about an O & M ordinance consistent with 71.73 being adopted and implemented?
8. Homeowners associations for community on-lot disposal systems have not been totally reliable. What other alternatives have been evaluated, consistent with 76.72?

In regards to the proposed new treatment facility:

1. How can you justify the size of the proposed system based on size versus needs determination? What about future expansion and future needs consideration? Information presented does not appear to support the size (gpd) of the proposed ST?
2. How was the site selection determined? Were the guidelines and other criteria from: Section 40 of the Domestic Wastewater Facilities Manual, for Wastewater Treatment Plants, specifically Section 41.2 followed, such as:
 - a. direction of prevailing winds
 - b. allow for future plant expansion due to growth and development
 - c. as far as practicable from a built-up area, or an area projected to be built in the reasonable near future; i.e., at least 250 feet from an occupied building or recreational area.
3. The Department would like to see a larger scale site plan showing the following details:
 - a. topography of the site
 - b. point of discharge and are they going to recreational waters
 - c. wetlands
 - d. floodplains
 - e. a non-architectural drawing or schematic showing the location of the various buildings and treatment units
4. Where will the funding for the plant be coming from?

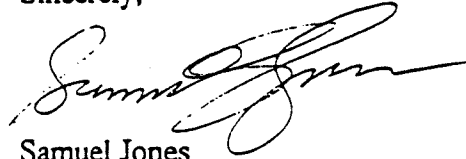
Mr. John Cornell

- 3 -

March 20, 1997

When the necessary responses have been completed, as listed above, this Department will initiate a review in accordance with the provisions of Chapter 71, Administration of the Sewage Facilities Program.

Sincerely,



Samuel Jones
Water Quality Specialist
Water Management

cc: Bucks County Health Department
Bucks County Planning Commission
C. Robert Wynn Associates, Inc.
Planning Section
Re 30 (KAL)55

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN - ADDENDUM I
RESPONSE TO PADEP COMMENTS
CORRESPONDENCE DATED MARCH 20, 1997**

- 1. If PWTA is hydraulically overloaded, it is not clear where the allocated capacity for Sub-Area "A" is going to be obtained. Please clarify.**

Enclosed is updated Table 7-4, Development Study Area, updated April 4, 1997 (Exhibit I-3) to reflect current PWTA plant capacity utilization and PWTA allocated plant capacity. Based upon purchased capacity of 1,349 EDUs, PWTA capacity utilization, allocated plant capacity, and future development; there is an excess of 254 EDUs which are available for Sub-Area "A". The Township is currently in litigation with PWTA to acquire the purchased capacity.

As an alternate, Table 7-4a, Development Study Area (Exhibit I-4), has been prepared based upon PWTA documentation of East Rockhill Township capacity. Utilizing the PWTA information, East Rockhill Township remaining capacity is 112 EDU. As noted by the PWTA Chairman, Abraham G. Stover, in a memo dated March 17, 1997 (refer Exhibit I-5), to all PWTA Board members regarding future plant capacity "Some of our members have exceeded their capacity as per this chart [Table 5C included with memo], and will have to purchase new capacity for their excesses". East Rockhill Township will secure additional capacity for Sub-Area "A" based on the reduction of plant utilization of Sub-Area "B" (201 EDUs) and continued participation in I & I reduction through the chimney seal program. Based upon PWTA documentation, plant utilization reduction, and the chimney seal program, Table 7-4a indicates that there is an excess capacity for development area "A" of 20 EDUs.

- 2. Please provide more specific information on how the overload problem at PWTA will be resolved by the time the collection and conveyance system for Sub-Area "C" is completed. If it won't be resolved explain why and give more specific detailed alternatives.**

Subsequent to the adoption of the East Rockhill Township Wastewater Facilities Plan on September 17, 1996, the Pennridge Wastewater Treatment Authority allocated capacity for Sub-Area "C" (refer Exhibit I-6, PWTA correspondence dated December 31, 1996). At their December 16, 1996 meeting, PWTA granted exceptions for eighteen (18) residential dwelling units (18 EDUs) and seven (7) non-residential structures (9 EDUs); for a total of twenty-seven (27) EDUs that will be exempt from the prohibition. Additionally, PWTA approved seven (7) residential infill lots for the sewer extension.

- 3. Has the possibility of PWTA expansion been discussed between the two parties involved? If there is a conflict between the two parties that can't be resolved, can it be justified and documented? Plan does not address this issue as an alternative. Why or why not?**

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN - ADDENDUM I
RESPONSE TO PADEP COMMENTS
CORRESPONDENCE DATED MARCH 20, 1997
PAGE 2**

This comment raises several issues which can only be discussed within the context of history and the 1975 Treatment Agreement which all member parties of PWTA signed in 1975. The Treatment Agreement set forth the obligations of PWTA and the member municipalities regarding operation, maintenance, and billing for the Authority.

The Pennridge Wastewater Treatment Authority was created by the Boroughs of Perkasio, Sellersville, Telford, and Silverdale and the Townships of East Rockhill and Hilltown. The Articles of Incorporation for PWTA were set up in such a way that Perkasio and Sellersville Boroughs appoint three (3) members and two (2) members respectively to the PWTA Authority Board and the other municipalities each appoint one (1) member. The Agreement provides in Section 10.09 that upon connection of all the parties, the PWTA would be restructured so that each member municipality would have one (1) appointed member to the PWTA. All members were connected to the PWTA collection system in approximately 1982 and since that time Perkasio Borough, an original incorporating municipality, and Perkasio Borough Authority, a signatory to the 1975 Treatment Agreement, have refused to restructure the voting membership as required by Section 10.09 of the 1975 Agreement. This refusal to restructure has, as can be expected, caused a substantial amount of distrust. This continuation of the original voting membership has also guaranteed Perkasio Borough and Perkasio Borough Authority with three (3) votes on any controversial or disputed issue which comes before the PWTA Board.

The other issue which, in the opinion of East Rockhill Township, is unlikely to be resolved, is the issue of billing and calculating members' reserved sewer capacity. Exhibit "B" to the 1975 Treatment Agreement sets forth each member municipality's original purchased sewer capacity. The 1975 Agreement itself provides in Section 6.02 that treatment will be charged and paid by each party on the basis of a "percentage computed by dividing the actual metered flow from each party's respective sewage collection system by the total metered flow into the treatment plant to the total cost of operating and maintaining the treatment plant." This billing method is quite simply a method based upon metering individual member's flows. Perkasio Borough Authority (3 votes) and Sellersville Borough (2 votes) are of the opinion that meters cannot be used to determine billing percentages within the PWTA treatment and collection system. Perkasio Borough Authority, in particular, has alleged for at least the past 10 years that meters are not accurate and that any billing should be based on either population or EDUs. PWTA, which in the past has attempted to remain neutral, has now adopted the Perkasio Borough Authority argument as its own.

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN - ADDENDUM I
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PAGE 3**

Despite the obvious language of the 1975 Treatment Agreement and despite the legal opinion of its own Solicitor in 1991, PWTA, as a Board, began billing member municipalities in 1993 based on an EDU method of calculation. The 1975 treatment Agreement was never revised nor were any of the member municipalities asked to consider a revision to the required metering method in Section 6.02. As is quite understandable, various members were outraged at this unilateral change and East Rockhill Township instituted a contract action soon thereafter. A Complaint filed on behalf of East Rockhill Township and Silverdale Borough against PWTA is currently pending in the Bucks County Court of Common Pleas which requests the court to order PWTA to abide by their written contract with the member municipalities. The other member municipalities were made parties to that action at the request of PWTA, and it is anticipated that this litigation will take 2 to 3 years. The conflict between East Rockhill Township and PWTA is obvious and well documented. PADEP should also be aware that there are additional disagreements and conflicts between PWTA and members other than East Rockhill Township. Silverdale Borough is a plaintiff in the current litigation and the PWTA Chairman recently informed Hilltown Township Authority and Telford Borough Authority that each would have to pay for alleged "excesses" in the treatment plant based upon the PWTA calculation of purchased capacity.

As to participation in any PWTA expansion, the East Rockhill Township Board of Supervisors, as elected officials, must consider the track record and history of dealing with the Board membership of PWTA. Based on the continuing imbalanced voting structure, Sellersville Borough and Perkasio Borough Authority have essentially co-opted the operation of the PWTA Authority for their own benefit. Until that situation is remedied, East Rockhill has no way of guaranteeing that future contracts for additional sewer capacity or an expansion of the treatment plant, will be complied with by these two majority voting members. The track record over the past 10 years is that the majority voting members will either ignore or breach contract agreements or requirements if those agreements or requirements are perceived to be unfair to their individual interests.

In lieu of further dealings with PWTA, the East Rockhill Township Board of Supervisors has done what the PWTA Board has been unable to do over the past several years, i.e., develop and adopt an updated 537 Plan for PADEP approval.

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN - ADDENDUM I
RESPONSE TO PADEP COMMENTS
CORRESPONDENCE DATED MARCH 20, 1997
PAGE 4**

- 4. On page 2-15 of the plan it makes reference to Figure 2.8 as being the existing sewer lines. However, Figure 2.8 is the existing floodplain and watershed map. Please clarify.**

Reference to Figure 2.8 as the existing sewer line is incorrect. Page 2-15 is revised to refer to Figure 2-13 (Exhibit I-7) which is the map of existing sanitary sewer lines within East Rockhill Township enclosed in a pocket at the end of the plan.

- 5. On page 2-17, it makes reference to Table 2-11 showing two (2) innovative/alternative systems. Only one (1) is listed. What is the other one?**

The second paragraph on page 2-17 is revised to indicate there is one (1) innovative/alternative system proposed in the Township.

- 6. The plan makes reference on page 3-5 and 3-6 about saving the new wastewater treatment plant capacity only for the new development area. What about the failed on-lot systems in the service area?**

Table 7-5, Development Study Sub-Area "B", Existing/future Treatment Plant Requirements (Exhibit I-8) has been updated April 4, 1997. The revised table includes the PWTA allocation of an additional fifty-one (51) EDUs for Phase II of the Fenley subdivision. Additionally, Table 7-5 has been revised to clarify that the "infill development" includes connection of approximately seven (7) remaining private on-lot systems within the Suburban Zoning District. Other existing dwellings were connected during previous expansion of the sanitary sewer collection and conveyance system.

- 7. Why is only public education being used as the only alternative for improving the operation of existing on-lot systems? How does this address the problem of poor soils in these areas? Education won't change soils. What about an O & M ordinance consistent with 71.73 being adopted and implemented?**

An on-lot disposal system management program was considered as Alternate 3 for the outlying study area which consists of that portion of the Township outside of the development area and the public sewer collection system. East Rockhill Township is a rural community with a small administrative staff and without sewage enforcement officers. As the Township has not identified a problematic failure of septic systems within the outlying study area and recognizes that all future development must meet current PADEP design standards and be permitted by the Bucks County Health Department, the Township does not plan to implement an operation and maintenance program at this time but desires to improve public awareness of on-lot sewage

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN - ADDENDUM I
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PAGE 5**

disposal system requirements to prevent failures due to inadequate and/or improper maintenance.

- 8. Homeowners associations for community on-lot disposal systems have not been totally reliable. What other alternatives have been evaluated, consistent with 71.72 (SIC 76.72)?**

Community on-lot disposal systems will be considered by East Rockhill Township Board of Supervisors and Planning Commission as an Act 537 plan revision consistent with PADEP regulations. Ownership, operation, and maintenance by a homeowners association is undesirable and not preferred by East Rockhill Township. Other alternatives which would be considered by the Township include municipal ownership where East Rockhill Township would accept dedication of the system from the developer and assume responsibility for maintenance and operation of the system; acceptance of the ownership and responsibility of the system by a local sewer authority (for example Perkasio Borough Authority depending upon the location of the facility); or acceptance of ownership and responsibility by the Penridge Wastewater Treatment Authority.

In regards to the proposed new treatment facility:

- 1. How can you justify the size of the proposed system based on size versus needs determination? What about future expansion and future needs consideration? Information presented does not appear to support the size (GPD) of proposed STP.**

The treatment plant is sized based upon existing, proposed, and future development within that portion of the Township to be served by the treatment plant; specifically, the Fenley subdivision (R-1 zoning district) and the Suburban Zoning District south of East Branch Perkiomen Creek. Plant size was determined based upon full development of the Suburban Zoning District although the majority of development will occur during the proposed Weidner Farm Subdivision currently under review as a preliminary plan by the Township Planning Commission. As noted in Table 7-5, it is anticipated that 113 mgd will be generated by the proposed development, infill development (which includes connection of remaining dwellings utilizing on-lot disposal systems within the service area), and diversion of existing flow from the PWTA treatment plant to the new treatment facility. The reduction of PWTA plant utilization will provide an additional 201 EDUs of capacity for development within the remaining Sub-Area "A" portion of the Township.

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN - ADDENDUM I
RESPONSE TO PADEP COMMENTS
CORRESPONDENCE DATED MARCH 20, 1997
PAGE 6**

- 2. How was the site selection determined? Or the guidelines and other criteria from Section 40 of the Domestic Wastewater Facilities Manual, for wastewater treatment plants, specifically Section 41.2 followed, such as:**
- a. direction of prevailing winds.**
 - b. allow for future plant expansion due to growth and development.**
 - c. as far as practicable from a built up area, or an area projected built in the reasonable near future; i.e., at least 250 feet from an occupied building or recreational area.**

The following criteria were considered during the selection of a site for the proposed wastewater treatment plant:

1. Topography/elevation of the site relative to the proposed service area (Suburban Zoning District and R-1 Zoning District).
2. Lot area (to provide for the proposed treatment plant as well as potential future expansion if determined necessary).
3. Extent of significant natural resources including floodplain, wetlands, woodlands, and steep slopes.
4. Location relative to existing development, especially proximity of the site relative to residential uses.
5. Availability of the site (is it currently for sale?) and the cost of acquisition.

Relatively few sites are located within the service area which meet all or most of the above criteria. Additional potential sites include an active farm located next to the proposed site which utilizes most of the property for pasture. A significant amount of this property is floodplain and/or wetlands. The site is not for sale. Another site is the R. A. Weidner farm property located on Branch Road. Again, this site is an active farm which is not for sale and contains significant area of wetlands/floodplain. Other sites between Branch Road and East Branch Perkiomen Creek, downgrade from the Suburban District, are primarily floodplain/wetlands and currently owned (equitable) by Heritage Development Corporation. These properties are proposed on their development plan to be dedicated to East Rockhill Township to meet open space/resource protection requirements.

The selected site is currently owned by East Rockhill Township and is at the lowest elevation within the service area. Uses adjacent to the site are primarily commercial/industrial in nature. A substantial portion of the 10 acre site is free of

**EAST ROCKHILL TOWNSHIP
WASTEWATER FACILITIES PLAN - ADDENDUM I
RESPONSE TO PADEP COMMENTS
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PAGE 7**

wetlands/floodplains and other significant natural resources. Additionally, the site is relatively isolated from residential development.

- 3. The Department would like to see a larger scale site plan showing the following details:**
- a. topography of site.**
 - b. point discharge and are they going to recreational waters.**
 - c. wetlands.**
 - d. floodplains.**
 - e. a non-architectural drawing or schematic showing the location of the various buildings and treatment units.**

Refer Exhibit I-10 which has been prepared in response to this comment.

- 4. Where would the funding from the plant be coming from?**

As noted on page 7-15, the sewage treatment plant will be completely user-financed. It is anticipated that East Rockhill Township will borrow the necessary funds to finance the project which will be repaid by system users. Specifically, the system users include the Weidner Farm development (125 dwelling units currently under review by the Township Planning Commission) and the Fenley Subdivision, Phase III (45 dwelling units approved previously by the Township). The Township will finance the portion of the plant necessary to provide capacity for existing connections to be diverted from the PWTA treatment plant and infill lots. These connections will be paid by future development within the Suburban zoning district, as well as from connection within Sub-Area "A" (due to additional capacity being transferred to that area).

**TABLE 7-4
DEVELOPMENT STUDY AREA
Sub-Area "A" Existing/Future Treatment Plant Requirements
(updated April 4, 1997)**

	<u>EDU's</u> ⁽¹⁾
Purchased Capacity ⁽²⁾	1349
Existing PWTA Capacity Utilization ⁽³⁾	(707)
PWTA Allocated Plant Capacity ⁽⁴⁾	(241)
Allocated Capacity ⁽⁵⁾	(198)
Future Development	<u>(150)</u>
 Sub-Total	 53
 Plant utilization Reduction ⁽⁶⁾	 44
PWTA Allocated Plant Capacity ⁽⁷⁾	<u>157</u>
 Total	 254 = 0.070 mgd

- (1) EDU = 275 gpd
- (2) Total development area PWTA plant capacity purchased.
- (3) Total development area based on ERT records.
- (4) Refer Table 7-3. Includes all allocated capacity except "Bridgeview".
- (5) Purchased capacity reserved by Pennridge Airport for development within the Industrial District. (Not included on PWTA reports)
- (6) Existing residential connections in Sub-area "B".
- (7) Bridgeview and Fenley Phase I & II. (Refer Table 7-3)

**TABLE 7-4a
DEVELOPMENT STUDY AREA
Sub-Area "A" Existing/Future Treatment Plant Requirements
Based Upon PWTA Documentation
April 4, 1997**

	<u>EDU's</u> ⁽¹⁾
Purchased Capacity ⁽²⁾	1060
Existing PWTA Capacity Utilization ⁽³⁾	(707)
PWTA Assigned Plant Capacity ⁽⁴⁾	<u>(241)</u>
Remaining Capacity ⁽⁵⁾	112
Allocated Capacity ⁽⁶⁾	(198)
Future Development	(150)
Plant Utilization Reduction ⁽⁷⁾	44
PWTA Allocated Plant Capacity ⁽⁸⁾	<u>157</u>
	(35)
I & I Reduction (chimney seal program) ⁽⁹⁾	<u>55</u>
Excess Capacity	20 EDU's

- (1) EDU = 350 gpd
- (2) Total development area PWTA plant capacity purchased.
- (3) PWTA documentation - Table 5C dated 2/26/97.
- (4) PWTA evaluation of municipal capacity status - Table 5C.
- (5) PWTA documentation - Table 5C.
- (6) Purchased capacity reserved by Pennridge Airport for development within the Industrial District (not included on PWTA reports).
- (7) Existing residential connections in Sub-Area "B".
- (8) Bridgeview and Fenley Phases I & II. (Refer Table 7-3)
- (9) Based on I & I reduction thru installation of chimney seals on 80% of remaining 220 manholes without seals.



180 MAPLE AVENUE
POST OFFICE BOX 31
SELLERSVILLE, PA 18960-0031
(215) 257-6355
FAX (215) 257-1749

PENNRIDGE WASTEWATER TREATMENT AUTHORITY

TO: All PWTA Board Members

FROM: Abraham G. Stover,
PWTA Chairman

SUBJECT: Future Plant Expansion

DATE: March 17, 1997

Gentlemen:

I am writing this memo because I believe the time has come for us to start planning for a plant expansion. When I look at our annual flow reports, I see that our annual daily average flow is 3.74 million gallons a day. Our design capacity of the plant is 4 million gallons a day. We are presently using in excess of 90% of our capacity and this fact alone indicates to me that we can no longer delay a plant expansion.

At a recent meeting with DEP, we discussed alternatives to expanding the plant. A phased approach whereby we would add a clarifier in the immediate future and at some future time build either the remainder of a 6 or 8 million gallon addition could be done. However, the results of this approach would only reduce our current overload potential, it would do nothing to get any additional new connections, therefore it seems as though planning for an expansion of 6 million gallons or more is our only solution.

Because of the preparation necessary to construct an addition and the numerous reports, etc. that are necessary before we can receive approval to build, I think we must now start the planning process if we hope to meet the future needs of the Pennridge area. At our meeting it was stated that to complete an expansion would require approximately two years. This means that it would be 1999 or 2000 before we would have it completed.

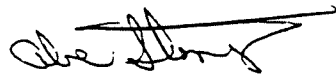
I think our Board should direct our Engineer to prepare a schedule of things that need to be completed by us and our member municipalities to effect this expansion. I would then like to see him prepare a tentative construction schedule so that we have an understanding of how this project would proceed.

There are two things that have to be discussed by our Board regarding this expansion. They are financing and capacity. Each is a major issue that must be addressed before we proceed with any construction.

I've had a chart prepared on capacity using the EDU method for determining each members current capacity. This chart reflects each members status today. It is based on the capacity outlined in the 1975 agreement. Since meter readings are not accurate enough to determine capacity the chart reflects an EDU number which is the method used today by DEP to allocate connections. Future planning for connections must be by EDU's rather than gallons. Some of our members have exceeded their capacity, as per this chart, and will have to purchase new capacity for their excesses. The resolution of this matter will have to be addressed before any decision can be made about who needs what capacity in the expansion. The method of financing the expansion will need to be decided prior to construction. Each member will have to commit to payment of his required connections. Other financing alternatives may be available if all the members agree to guarantee the financing. We can decide how we want to handle this matter as we prepare the engineering and other data needed to get this project underway.

I plan to make time available on the future agendas of the Authority to discuss the above mentioned expansion. At our next meeting, I would like to have the approval of each of you to proceed with this project. I'm taking the liberty of copying this memo to each of the member municipality presidents or chairmen to acquaint them with my concern and hope they will also agree with me that we must move on with this project if we want to be able to meet the needs of our communities in the future.

Sincerely,


Abraham G. Stover,
PWTA Chairman

cc: President or Chairman of

Hilltown Township
Hilltown Township Water & Sewer Authority
East Rockhill Township
Sellersville Borough
Perkasie Borough
Telford Borough
Telford Borough Authority
Silverdale Borough

TABLE 5C
 PENNRIDGE WASTEWATER TREATMENT AUTHORITY
 EVALUATION OF MUNICIPAL CAPACITY STATUS

Municipality	Original Design Capacity		Connections (EDU)			Remaining Capacity (EDU) (@350 gpd/EDU)	
	Flow (mgd)	(% Total)	Connections (EDU)	Currently Connected	Assigned Reserved		
East Rockhill	0.371	9.28%	1,060	707	241	948	112
Hilltown	0.318	7.95%	909	1,146	243	1,389	-480
Perkasie	1.427	35.68%	4,077	3,278	249	3,527	550
Sellersville	1.142	28.55%	3,263	2,851	40	2,891	372
Silverdale	0.106	2.65%	303	353	51	404	-101
Telford	0.636	15.90%	1,817	1,801	86	1,887	-70
Totals	4.000	100.00%	11,429	10,136	910	11,046	383

Notes : 1. Original Design Connections (EDU) and Remaining Capacity are based on the then current value of 350 gpd/EDU



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PENNRIDGE WASTEWATER TREATMENT AUTHORITY

December 31, 1996

Mr. John Cornell
 East Rockhill Township
 1622 Ridge Road
 Perkasie, PA 18944

RE: Old Bethlehem Pike Area Sewer Extensions

Dear Mr. Cornell:

At the December 16 meeting of the Board of the Pennridge Wastewater Treatment Authority (PWTA), your request for approval of the Old Bethlehem Pike sewer extension was discussed.

PWTA approved your request for approval of the project. PWTA granted exceptions for 18 residential units (18 EDUs) and 7 non-residential (9 EDUs), for a total of 27 EDUs that will be exempt from the prohibition. Additionally, PWTA approved 7 residential in-fill lots for the sewer extension.

The Board acknowledges that PWTA may reclassifiy 6 of the 7 residential in-fill lots as exceptions based upon future action of the Bucks County Health Department.

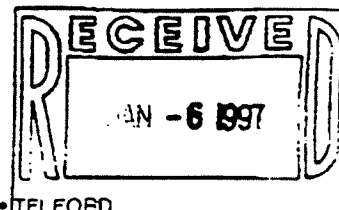
Enclosed please find Resolution 96-15 for the 7 in-fill lots. PWTA doesn't prepare resolutions for exceptions. If flow data becomes available for any of the non-residential users, we would appreciate if you would forward the data to PWTA.

The Authority wishes you a successful completion to this project.

Respectfully Yours,

Patrick R. Donovan
 Authority Manager

cc: PWTA Board & Staff
 C. Robert Wynn & Assoc.



**TABLE 7-5
DEVELOPMENT STUDY AREA
Sub-Area "B" Existing/Future Treatment Plant Requirements
(updated April 4, 1997)**

	<u>EDU's</u> ⁽¹⁾
Existing Connections ⁽²⁾	44
Allocated Capacity ⁽³⁾	157
Future Development	
R-1 District (Fenley Phase III)	45
S District ⁽⁴⁾	145
In-fill Development ⁽⁵⁾	<u>20</u>
 Total	 411 = 0.113 mgd

(1) EDU = 275 gpd

(2) Flow treated at PWT.A.

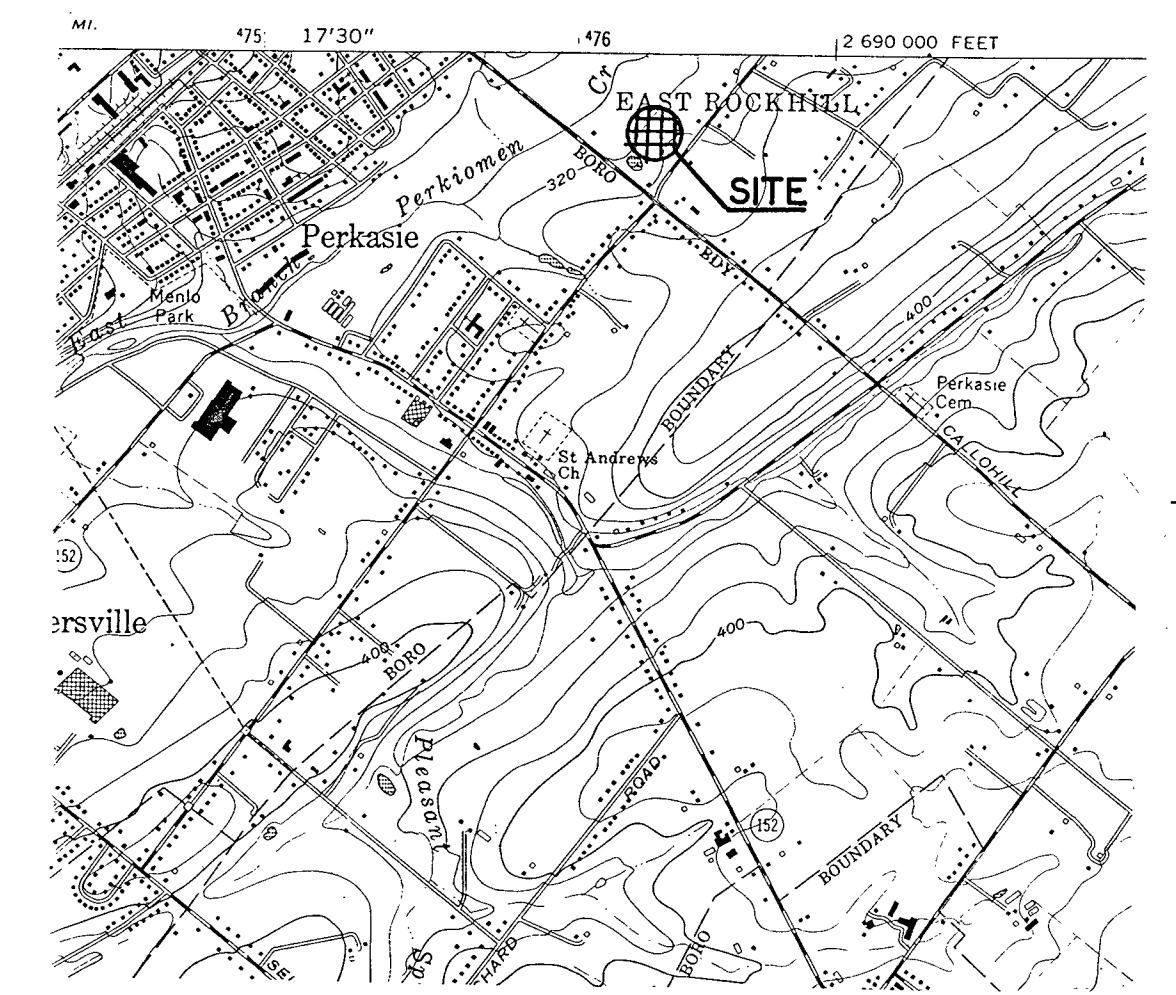
(3) Purchased capacity allocated by PWT.A. (Bridgeview/Fenley Phases I & II)

(4) Includes proposed Weidner Farms - 125 EDU's.

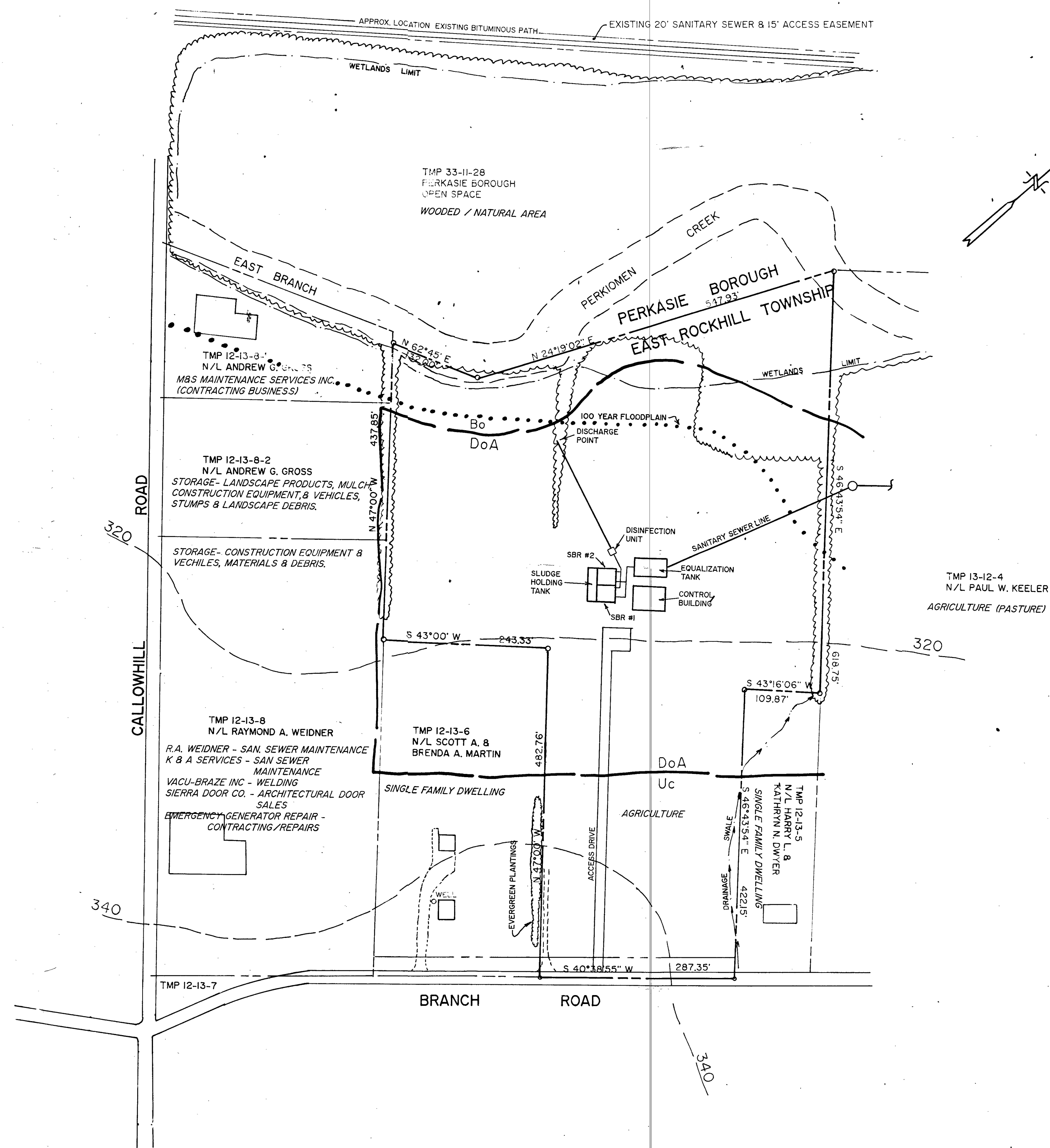
(5) Includes connection of remaining private systems (approx. seven (7)).

TABLE 7-3
PWTA ALLOCATED PLANT CAPACITY
Designated For Specific Use
(Revised April 4, 1997)

<u>Development</u>	<u>Allocation</u>
Chadd's Place	7
Bridgeview	21
Hillendale	5
Park Ridge	1
Pines at Penncridge	2
Ridge Run III	5
Ridge Run IV	30
Stoney Hill	5
Fenley (Phases I & II)	136
Bryan	2
Old Bethlehem Pike Sub-Area "C"	7
Individual Parcels	11
Unreserved/In-fill	<u>9</u>
	241 EDU's



SITE LOCATION MAP
 SCALE 1" = 2000'
 TELFORD QUADRANGLE
 PENNSYLVANIA
 7.5 MINUTE SERIES (TOPOGRAPHIC)



- LEGEND**
- EXISTING CONTOUR
 - SOILS BOUNDARY
 - - - WETLANDS LIMIT
 - 100 YEAR FLOOD PLAIN
 - ~~~~~ WOODS
 - PROPERTY BOUNDARY

TMP #12-013-006-001
 SITE AREA - 10 ACRES
 PROPERTY OWNER: EAST ROCKHILL TOWNSHIP
 1622 RIDGE ROAD
 PERKASIE, PA 18944

- NOTES:**
1. PROPERTY BOUNDARY OBTAINED FROM DEED INFORMATION RECORDED IN DEED BOOK VOLUME 2293, PAGE 559 AT THE BUCKS COUNTY COURTHOUSE, AND FROM A PLAN OF SUBDIVISION PREPARED FOR ERWIN A. MOYER, BY DOUGLAS W. BREITINGER, R.S., DATED MAY 15, 1978.
 2. TOPOGRAPHIC INFORMATION OBTAINED FROM USGS TELFORD, PA QUADRANGLE.
 3. WETLANDS LIMITS OBTAINED FROM NATURAL WILDLIFE INVENTORY MAPS, PUBLISHED BY THE U.S. FISH AND WILDLIFE SERVICE.
 4. SOIL BOUNDARIES OBTAINED FROM SOIL SURVEY OF BUCKS AND PHILADELPHIA COUNTIES, PREPARED BY THE U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE.
 - Bo = BOWMANSVILLE SILT LOAM
 - DoA = DOYLESTOWN SILT LOAM, 0 TO 3% SLOPES
 - Uc = URBAN LAND - ABBOTTSTOWN COMPLEX
 5. APPROXIMATE BOUNDARY OF THE 100 YEAR FLOODPLAIN OBTAINED FROM FLOOD INSURANCE STUDY PREPARED FOR EAST ROCKHILL TOWNSHIP, BUCKS COUNTY, BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, IN APRIL 1982.
 6. TMP-33-11-28 CONTAINS A BITUMINOUS BIKE PATH WITHIN A SANITARY SEWER/ACCESS EASEMENT.
 7. TREATMENT FACILITY IS SCHEMATIC.

NO.	DATE	REVISIONS
SCHEMATIC DRAWING		
WASTEWATER TREATMENT FACILITY		
EAST ROCKHILL TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA		
C. ROBERT WYNN ASSOCIATES, INC.		
Consulting Engineering 211 W. Broad Street Quakertown, PA 18951 (215) 536-7336		
OWN BY	CHK BY	DATE
		4/7/97
SCALE		JOB NUMBER
1" = 100'		13-012
DRAWING NO.		OF 1