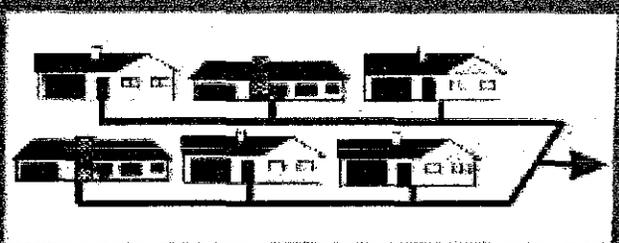
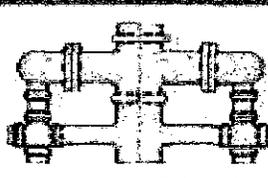


MOUNT JOY TOWNSHIP LANCASTER COUNTY

ACT 537 WASTEWATER MANAGEMENT PLAN



Prepared by:

**RETTEW
Associates, Inc.**

and

**HANOVER ENGINEERING
Associates, Inc.**

In Cooperation With:

**MOUNT JOY TOWNSHIP
AUTHORITY**

November 1998





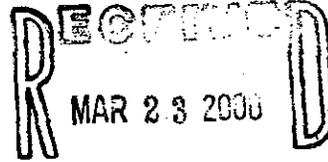
Pennsylvania Department of Environmental Protection

909 Elmerton Avenue
Harrisburg, PA 17110-8200

March 21, 2000

Southcentral Regional Office

Mount Joy Township Supervisors
c/o Richard Forrey, Secretary
159 Merts Drive
Elizabethtown, PA 17022



717-705-4707
FAX - 717-705-4760

HANOVER ENGINEERING

Re: Act 537 Planning
APS ID No. 37966
DEP Code No. A1-36942-ACT
Mount Joy Township, Lancaster County

Ladies and Gentlemen:

This letter is in response to a Hanover Engineering Associates, Inc. letter dated February 21, 2000 requesting partial approval of the Mount Joy Township 1998 Act 537 Official Plan, that was determined by the Department of Environmental Protection (Department) to be technically incomplete on January 24, 2000. Based upon the expressed commitment to adequately address the on-lot disposal system related plan deficiencies identified in the Department's January 24 letter, and the fact that the township's plan is not deficient as it applies to the selected public sewer portion of the Mount Joy Township Act 537 Plan, the requested partial approval is granted. The remainder of the plan is expected to be completed in accordance with the implementation schedule furnished with the Hanover Engineering Associates, Inc. letter and will be identified as DEP Code No. B1-36942-ACT in future correspondence.

The Department has reviewed your 1998 Act 537 Plan, with information submitted February 25, 2000. The submission is consistent with the planning requirements given in Chapter 71, of the rules and regulations of the Department. The plan provides for upgrade and expansion of existing sewage collection and conveyance facilities.

The plan is approved with the following conditions:

1. The approved project will require a Water Management Part II Permit for the construction and operation of the proposed sewage facilities (upgrade existing interceptors). The permit application must be submitted in the name of the municipality or authority, as appropriate. Issuance of a Part II Permit will be based upon a technical evaluation of the permit application and supporting documentation. Starting construction prior to obtaining a Part II Permit is a violation of The Clean Streams Law.
2. Other Departmental permits may be required for construction if encroachment to streams or wetlands will result. Information regarding the requirements for such permits or approvals can be obtained from the Department's Soils and Waterways Section at the letterhead address or telephone at 717-705-4802.



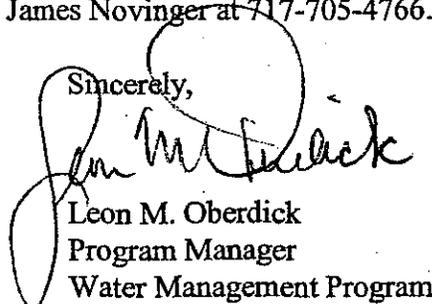
3. Completion of Phase II of your Act 537 Plan includes an acceptable sewage disposal needs identification process in the nonpublic sewer serve areas of the township and must be accomplished within the schedules provided to the Department in your latest package of information. In accordance with Title 25, Chapter 71, Section 71.21(A)(6), upon completion of this survey activity, the alternatives previously selected for the nonsewer service areas must be reexamined for their continued appropriateness and acceptability.
4. Approval of the above Phase II of your plan will indicate the approval of your entire Act 537 Plan which is necessary to become eligible to apply for a planning grant in accordance with Title 25, Chapter 71.41. A planning grant application will be provided with the Department's plan approval letter for the concluding phase of your plan.

It is now Mount Joy Township's responsibility to implement the 537 Plan in accordance with the schedules contained within the Plan.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, PO Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

If you have any questions, please call Mr. James Novinger at 717-705-4766.

Sincerely,



Leon M. Oberdick
Program Manager
Water Management Program

Enclosure

cc: Hanover Engineering Associates, Inc.
Lancaster County Planning Commission
Lancaster County Health Department
Mount Joy Township Sewer Authority

**ACT 537 PLAN
SEWAGE FACILITIES PLAN UPDATE
FOR MOUNT JOY TOWNSHIP
LANCASTER COUNTY, PENNSYLVANIA**

NOVEMBER 1998

**Hanover Engineering Associates, Inc.
20C Snyder Lane
Ephrata, PA 17522-9101
(717) 721-7444**



MOUNT JOY TOWNSHIP ACT 537 PLAN

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MOUNT JOY TOWNSHIP ACT 537 PLAN

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TOWNSHIP OF MOUNT JOY

Lancaster County, Pennsylvania

RESOLUTION NO. 3-1999

A RESOLUTION OF THE BOARD OF SUPERVISORS OF THE TOWNSHIP OF MOUNT JOY, LANCASTER COUNTY, PENNSYLVANIA, TO ADOPT AN OFFICIAL SEWAGE FACILITIES PLAN FOR MOUNT JOY TOWNSHIP.

WHEREAS, the Board of Supervisors of the Township of Mount Joy (the "Board of Supervisors") authorized the preparation of an official sewage facilities plan update for the Township; and

WHEREAS, Rettew Associates, Inc., was selected as the consultant to assist the Board of Supervisors of the Township in the preparation of the official sewage facilities plan update; and

WHEREAS, pursuant to the regulations of the Pennsylvania Department of Environmental Protection (the "Department"), the Board of Supervisors advertised the preparation of the proposed official sewage facilities plan update and requested public comments on such plan update on January 8, 1999; and

WHEREAS, the Township provided copies of the proposed official sewage facilities plan update to the Lancaster County Planning Commission and the Mount Joy Township Planning Commission for their review in accordance with the regulations of the Department; and

WHEREAS, the Board of Supervisors of the Township desires to adopt the revised official sewage facilities plan as the Official Sewage Facilities Plan for the Township in accordance with the provisions and requirements of the Pennsylvania Sewage Facilities Act and the regulations of the Department.

NOW, THEREFORE, BE IT RESOLVED by the Board of Supervisors of the Township of Mount Joy, Lancaster County, Pennsylvania, as follows:

Section 1. The Board of Supervisors adopts the official sewage facilities plan update entitled "Mount Joy Township Lancaster County Act 537 Wastewater Management Plan, November 1998", hereinafter referred to as the "Plan", together with all revisions thereto, prepared by Rettew Associates, Inc., in the form



and content presented at this public meeting, as the official sewage facilities plan update for the Township in accordance with the Pennsylvania Sewage Facilities Act and the regulations of the Department.

Section 2. The Plan as adopted by the Board of Supervisors shall include the following chapters and all charts, tables, diagrams, appendices, figures and textual matter contained therein and appended thereto:

1. Planning Objectives and Needs
2. Physical Description of Planning Area
3. Evaluation of Existing Water and Wastewater Facilities
4. Evaluation of Wastewater Treatment Needs
5. Alternative Evaluation
6. Recommended Wastewater Management Alternatives
7. Plan Implementation

Section 3. The Board of Supervisors adopts the following alternatives set forth in the Plan as the alternatives of choice which shall be implemented by the Township upon approval of the Plan by the Department in accordance with the implementation schedule set forth in the Plan:

1. Implement nonstructural alternatives for areas served by on-lot sewage disposal systems as follows:

a. OLDS Education.

b. Hydrogeologic Evaluations. Due to widespread conditions that include hazardous soils and limestone geology, no Component I modules will be allowed and the Township will require preliminary hydrogeological analyses for subdivisions proposing OLDS in high nitrate areas.

c. Non-Building Planning Module Waiver.

d. Dispersion plume easement.

2. Public sewer service will be addressed by the implementation of Elizabethtown Alternative 2 which provides for wastewater treatment at the Elizabethtown Borough wastewater treatment facility by means of a plant expansion to a capacity of 4.5 million gallons per day to address the regional needs of the Township, West Donegal Township, and Elizabethtown Borough as set forth more fully at Section 6.1 of the Plan.

Section 4. To the maximum extent feasible, the Township commits to implement the plan in accordance with the implementation schedule set forth at Chapter 7.



Section 5. This Resolution shall become effective and be in force immediately.

DULY ADOPTED this 15TH day of FEBRUARY, 1999, by the Board of Supervisors of the Township of Mount Joy, Lancaster County, Pennsylvania, in lawful session duly assembled.

TOWNSHIP OF MOUNT JOY
Lancaster County, Pennsylvania

Attest: *Richard E. Foy*
(~~Assistant~~) Secretary

By: *[Signature]*
(Vice) Chairman
Board of Supervisors

[TOWNSHIP SEAL]

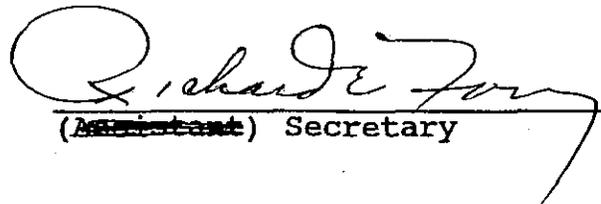


CERTIFICATE

I, the undersigned, (~~Assistant~~) Secretary of the Township of Mount Joy, Lancaster County, Pennsylvania ("Township") certify as follows: the foregoing is a true and correct copy of a Resolution which was duly adopted by affirmative vote of a majority of the members of the Board of Supervisors of the Township at a meeting of said Board of Supervisors duly convened and held according to law on 15 FEBRUARY 1999, at which meeting a quorum was present; that such Resolution has been duly recorded in the minutes of the Board of Supervisors of the Township; and that said Resolution is in full force and effect, without amendment, alteration or repeal, as of the date of this Certificate.

I further certify that the Board of Supervisors of the Township of Mount Joy met the advance notice requirements and public comment requirements of the Sunshine Act, Act No. 1986-84 of the General Assembly of the Commonwealth of Pennsylvania, approved July 3, 1986, by advertising said meeting, by posting prominently a notice of said meeting at the principal office of the Township or at the public building in which said meeting was held, and by providing a reasonable opportunity for public comment at said meeting prior to adopting such Resolution.

IN WITNESS WHEREOF, I set my hand and affix the official seal of the Township of Mount Joy, this 15TH day of FEBRUARY, 1999.


(~~Assistant~~) Secretary

[TOWNSHIP SEAL]



SUMMARY OF RECOMMENDATIONS

In compliance with the Pennsylvania Sewage Facilities Act and the regulations of the Department of Environmental Protection (DEP), Mount Joy Township (Township) has adopted this document as its official sewage facilities plan. The 537 Plan is intended to address wastewater management of existing and new discharges of wastewater in the Township in order to prevent groundwater contamination caused by inadequately treated sewage. The Plan of Study was approved by DEP on July 11, 1990 and modifications approved on May 20, 1993 (see Appendix 5).

Final Plan Recommendation

This 537 Plan update developed recommendations for future wastewater management planning in the Township through the year 2020. The scope included the entire Township and included provisions for public sewer service within the Township as well as contributions to the Elizabethtown Borough, West Donegal Township and Mount Joy Borough systems. Growth projections were developed for growth areas as developed by recent comprehensive planning and zoning revisions by the Township. With the goal of providing future growth with the availability of public sewer service, wastewater capacity estimates of 1,297,100 gallons per day were developed. These flow estimates provide for growth in the defined urban growth areas delineated by the comprehensive plan and commercial and industrial zoned areas of the Township. In addition, the plan allows for sizing of critical conveyance, treatment and pumping facilities to provide capacity for long-term growth of the area beyond the 2020 planning period.

Seven alternatives were evaluated for conveyance and treatment of the projected flows from the different drainage areas of the Township. Alternatives included conveyance to the Elizabethtown treatment plant by alternative routes using expanded capacity in the Elizabethtown and West Donegal interceptors. Alternatives also considered the construction of Township treatment sites as an alternative to the cost of conveyance and expansion of the Elizabethtown plant and outfall.

The alternatives addressed an expansion for conveyance capacity in the existing MJTA system. There are no MJTA provisions to construct extensions or collection sewers. Further extension of the sewer system into areas designated for public sewer will be constructed and financed by development.

There were no existing needs warranted for public sewer as a result of a review of on-lot disposal system (OLDS) data, well testing and soils information on the Township. Historically, system repairs have been evenly distributed throughout the areas of the Township and have been generally associated with older systems. The 537 Plan evaluated the possibility of public sewer service to scattered development around the Milton Grove area. However, high costs and lack of a justified need did not warrant a recommendation for sewer in this area. Agricultural zoning limitations and recommendations for non-structural alternatives are expected to address adequate wastewater management with the continued use of OLDS in this area.

The Township will also be selecting a number of sewage management programs that do not directly involve construction of sewers or collection systems. Specifically, the selected non-structural alternatives include:

1. OLDS Education.
2. Hydrogeologic Evaluations - Due to widespread conditions that include hazardous soils and limestone geology, no Component I modules will be allowed and the Township will require preliminary hydrogeological analyses for subdivisions proposing OLDS in high nitrate areas.
3. Non-Building Planning Module Waiver.
4. Dispersion Plume Easement.

Implementation

The selected alternative will be the primary activity to address growth in the Township and prevent potential future groundwater contamination.

The selected alternative identified in the plan as Elizabethtown Alternative 2 will provide for conveyance and treatment capacity for a total of 5,501 equivalent dwelling units (EDU's). With one exception, wastewater treatment will be provided at the Elizabethtown treatment facility by way of a plant expansion to a capacity of 4.5 million gallons per day to address the regional needs of Mount Joy Township, West Donegal Township and Elizabethtown Borough.

The only other treatment site utilized is the Mount Joy Borough sewer system. By prior agreement in December 1995, MJTA turned over its collection system tributary to the Mount Joy Borough system. Estimated growth in this small area of the Township totaling 524 EDU's will be served by Mount Joy Borough.

MJTA will need to modify its current intermunicipal agreements for capacity with Elizabethtown Borough and West Donegal Township. Through coordination of current planning and adoption of joint cooperative resolutions, all three municipalities will adopt revised 537 Plans.

The proposed sewer service area and 5- and 10-year estimated growth areas are illustrated on Map 13. Improvements to the MJTA system are presented on Map 16.

Estimated project costs for conveyance system improvements to the MJTA system including contributions to Elizabethtown Borough and West Donegal Township Authority for conveyance and treatment capacity total \$11,423,000. Estimated operation and maintenance costs for the proposed improvements and capacity are \$535,000 per year.

Funding for the project is anticipated to be provided by available MJTA funds in addition to capital financing income from proposed developer agreements to provide annual tapping fee income in support of a 5-year capital improvements program. Tapping fees are estimated to be in the \$3,500 to \$4,500 per EDU range. Project costs will be financed over an estimated 30-year term with a public bond issue. Additional revenue will come from an increase in annual user fees to cover increased debt service and operating costs. Estimated initial user fees will be in the \$400 to \$475 per year range.

MJTA will continue to be the owner and operator of the sewer collection and conveyance system. MJTA will be responsible for implementation of the capital improvement plan. The Township will administer the OLDS education plan and coordinate planning module planning requirements with land development planning ordinances and the services of the Township sewage enforcement officer.

The implementation schedule represents the intent of the Board of Supervisors of Mount Joy Township and MJTA. The proposed implementation plan, as noted in Chapter 7, was previously developed by all three municipalities and submitted to DEP in compliance with Chapter 94 requirements. The proposed schedule plans for completion of construction improvements to the Elizabethtown treatment plant by January of 2002.

This 537 Plan incorporates by reference the following:

- Mount Joy Township Zoning Ordinance, January 1998
- The Elizabethtown Region Strategic Comprehensive Plan
- Evaluation of the Elizabethtown Wastewater Treatment Plant Upgrade/ Expansion Alternatives prepared by Camp Dresser and McKee, November 1995.

MJTA formally submitted this 537 Plan to the Township Planning Commission and the Lancaster County Planning Commission for review and comments. The Board has also advertised and established a 30-day public comment period pursuant to Pennsylvania Code Title 25, Section 71.31(b). Appendix 2 includes proof of publication of public notice, written comments from the public, the Mount Joy Township Planning Commission and the Lancaster County Planning Commission, as well as the Township's response to all written comments.



CHAPTER 1



CHAPTER 1

PLANNING OBJECTIVES AND NEEDS

1.1 Previous Wastewater Planning

Mount Joy Township has not previously adopted an Act 537 Plan (537 Plan). The following wastewater plans were prepared on a regional or county scale which included the Township.

- *1970 Lancaster County Comprehensive Sewerage Plan;*
- *1972-3 Sewage Collection Facilities Feasibility* prepared by Gannett Fleming Corddry and Carpenter;
- *1982 Comprehensive Water Quality Management Plan for the Lower Susquehanna River Basin; and*
- *1987 Lancaster County Sewer and Water Resources Study.*

1970 Lancaster County Comprehensive Sewerage Plan

The 1970 Comprehensive Sewerage Plan for Lancaster County was prepared by the Lancaster County Planning Commission (LCPC). The plan adopted a regional approach for sewage disposal in Lancaster County. The regional system would have connected the boroughs of Marietta, Mount Joy, and Elizabethtown, as well as the townships of Conoy, West Donegal, East Donegal, and Mount Joy, along with a small portion of Rapho. A new collection system and a new treatment system at Chickies Creek near Marietta Borough was proposed. The plant would discharge approximately 6.0 million gallons per day (mgd) by the year 2010. According to Figure G-2 of the County's Plan, no part of Mount Joy Township demonstrated "severe onsite sewage disposal problem areas."

1972-1973 Sewage Collection Facilities Feasibility Reports

These reports were prepared for Mount Joy Township to determine the feasibility of providing public sewer service to Mount Joy Township. The studies were prepared by Gannett Fleming Corddry and Carpenter as engineering consultant for the Township.

As a result of the studies, the Mount Joy Township Authority (MJTA) was formed to finance and construct the existing sanitary sewer system in 1975. The original sewer system provided service to 630 equivalent dwelling units (EDU's).

1982 Comprehensive Water Quality Management Plan

In 1982, the Pennsylvania Department of Environmental Resources (currently the Pennsylvania Department of Environmental Protection [DEP]) prepared the Comprehensive Water Quality Management Plan (COWAMP) for the Lower Susquehanna Basin area. The study reported the following:

- * Municipalities, especially in more rural portions of the study area, should consider formation of multi-municipal, and possibly county-wide on-lot enforcement agencies.
- * The scope of the existing on-lot management program should be expanded to include regular maintenance requirements. These requirements would be administered and enforced by local government through the certified Sewer Enforcement Officer (SEO), and would include periodic inspection of systems by the SEO. DEP would submit and the Environmental Quality Board would adopt uniform standards for operation and maintenance of the on-lot facilities.
- * The General Assembly should amend the Sewage Facilities Act to clarify and broaden the powers of the local agencies and their SEOs as related to operation and maintenance of on-lot systems.
- * Adequate budget and education consultants should be available to DEP to design and implement the training necessary for an SEO.
- * Municipalities should revise their official plans to provide for on-lot management programs. These programs could include education and maintenance duties, and give additional responsibility to the community through ordinances and regulations to encourage or require water conservation and the sound planning of new development.
- * DEP should assist municipalities by developing guidelines and providing training for on-lot management, and by exercising surveillance over the local agency and their SEO. Written comments should be supplied whenever deficiencies are found in permits that have been issued.

Specific recommendations in COWAMP related to Mount Joy Township were as follows:

- * Extend sewers where possible to serve any needs or problem areas. Treatment would be provided by the Elizabethtown Borough and Mount Joy Borough wastewater treatment plant.
- * Continued On-Lot Disposal System (OLDS) management in these portions of the Township not proposed for public sewers.

1987 Lancaster County Sewer and Water Resources Study

Lancaster County conducted the Lancaster County Sewer and Water Resources Study in 1987 which reported that the MJTA served 592 customers, with a total capacity of 0.40 mgd and 0.11 mgd of average flow in 1986 based on 135 gallons per day (gpd) per home. No plans existed for further expansion in 1986. In general, the study made the following recommendations:

- * Require a larger minimum lot size of 0.75 acre for on-lot sewage disposal systems in areas not likely to be served in the near future by public water supplies or sewers. (To be implemented by LCPC and municipal government; high priority)
- * Seek municipal management and, where appropriate, municipal ownership of individual on-lot sewage disposal systems and community wastewater treatment and disposal systems. (To be implemented by LCPC and municipal government; high priority.)
- * Sewer existing on-lot problem areas wherever rehabilitation of existing systems is not feasible. (To be implemented by municipal government.) Only one problem area was identified in the Township. The Aberdeen area in the northern part of the Township has since been sewered.
- * Provide technical guidance and uniform training to municipal enforcement employees and SEOs. (To be implemented by DEP, LCPC, and the Lancaster County Conservation District.)
- * Assign greater enforcement powers with regard to septic tank pump-outs and septic system rehabilitation, particularly in problem areas. (To be implemented by the proposed Lancaster County Health Department.)

No wastewater studies or planning have been conducted since the 1987 Sewer and Water Resources Study.

1.2 Land Use Regulations and Planning

County Comprehensive Planning

The Lancaster County Comprehensive Plan is composed of four components: (1) the Policy Plan, (2) the Growth Management Plan, (3) the Action Plan, and (4) Regional Plans. The first component, the Policy Plan, was first adopted by the Lancaster County Board of Commissioners in January, 1991, and contains policy goals and objectives concerning major issues facing the County.

The Growth Management Plan is the second component of the Lancaster County Comprehensive Plan. The County adopted the Growth Management Plan in September 1993.

The purpose of the Growth Management Plan is to "visually represent the land use goals and objectives contained in the Policy Plan." It is designed to assist the County and local municipalities in guiding and influencing the pattern, location and timing of growth, and in determining areas appropriate for continued agriculture, resource, and rural uses.

The Growth Management Plan proposes the use of urban growth boundaries as the primary way to manage growth effectively within the County. An urban growth boundary (UGB) is a line drawn on a map around an area that includes a city or borough (such as Elizabethtown and Mount Joy Borough) at its center, developed portions of townships, and enough additional

buildable lands to meet future land use need to the year 2010. A UGB line provides a "boundary" that separates areas appropriate for urban growth and the extension of urban services, particularly sewer and water, from areas intended for agricultural, resource and rural uses.

Some of the benefits UGBs can provide include the preservation of community identity and character, the control of sprawled development patterns, the preservation of prime agricultural lands, predictability in capital improvements planning, tax savings in the efficient provision of public services and facilities, the revitalization of urban areas, and simplified decision-making at the urban edge.

The Growth Management Plan proposes that each municipality meet its own future needs as determined by a 20-year population projection for that municipality. Townships adjacent to boroughs are encouraged to meet their need primarily within UGBs, and to a lesser extent in villages (through Village Growth Boundaries [VGBs]), crossroads communities and in other rural areas. Growth within UGBs is encouraged to occur sequentially, at an average density of 5.5 units/acre. Areas within a UGB not immediately needed for development or not yet provided with needed public services and facilities may receive phased development. It is proposed that townships work together with the County to cooperatively establish UGBs, and any applicable changes in plan designations. Municipalities will continue to determine appropriate zoning districts. Adopted UGBs and any changes in plan designations will be reflected in the County's Growth Management Plan on the Future Land Use Map.

The Growth Management Plan includes a County-wide Future Land Use Map and regional growth guidance maps for 13 urban areas. Mount Joy Township is included as part of the Elizabethtown-Mount Joy Urban Growth Area. The Elizabethtown-Mount Joy UGB Map identified a draft Urban Growth Boundary (UGB) in the area which includes the following three areas:

- Elizabethtown Area - between Route 283, Ridge Road, and Hershey Road.
- Mount Joy Borough Area - south of Terrace Road.
- Route 230 - west side only.

Mount Joy Township has established a UGB area as part of the 1996 Regional Comprehensive Plan.

Municipal Comprehensive Planning

Mount Joy Township previously completed a Comprehensive Plan in 1989 (as part of the Regional Comprehensive Plan including neighboring municipalities). The Comprehensive Plan proposed that growth should occur in the northwest portion of the Township, generally north of Elizabethtown Borough. Growth would also continue in the area between the boroughs of Mount Joy and Elizabethtown and around the Route 283 interchanges. The remainder of the Township east of Route 283 would remain primarily in agricultural use.

As a result of the continued significant growth in the Elizabethtown area and the recognized need to address future impacts on land use as well as water, sewer, schools and public services, the Township together with West Donegal Township and Elizabethtown Borough, have prepared an update to the Regional Comprehensive Plan. The plan further identified areas for management of controlling growth. Growth areas were in areas designated for public water and sewer service.

The Comprehensive Plan provides for accommodating residential, commercial and industrial growth with public sewer. Where public sewer presently exists in rural areas, higher density residential development can also be planned outside of the UGB.

Where areas of the Township are designated as residential holding areas, planning for development in these areas is recommended when sizing capacity for conveyance interceptors, pump stations and treatment as long-term planning.

Zoning

The Mount Joy Township Zoning Ordinance was originally adopted in 1978. Map 1 represents the Township's current Zoning Map as adopted in January 1998 to implement the Comprehensive Plan. The Township's Zoning Districts are summarized as follows:

Agricultural District - Allows agricultural uses, single-family dwellings, recreation uses, farm businesses, and public facilities. Single-family dwellings are allowed according to tract size, from 1 unit for 7 acres, up to 10 units for 240 acres. Minimum lot size is 40,000 square feet (S.F.).

Conservation Residential - Allows for agricultural, municipal and single-family detached dwellings, churches, and recreational uses. The minimum lot size is two acres. This district takes into consideration environmental site restrictions on land development.

Rural District - Allows agriculture, single-family dwellings, recreational uses, municipal, public and quasi-public uses. Additional uses are provided for by special exception. Minimum lot area is 1 acre.

Residential R-1 District - Allows uses similar to the Rural District, with 20,000 S.F. minimum lot size served by public sewer.

Residential R-2 District - Allows uses similar to the R-1 District, as well as semi-detach, apartments and attached dwellings. Minimum lot sizes are 40,000 S.F. (no public sewer or public water), 15,000 S.F. (public sewer and water), and 10,000 S.F. per dwelling unit for semi-detached dwellings served by both public sewer and water. Apartments are permitted at a density of one unit for each 6,000 S.F. (with public water and sewer), Townhouses are allowed at a density of up to 1 unit per 2,000 S.F. (with public sewer and water) with a net density of 4 units per acre.

Residential R-3 District - Allows uses similar to the R-2 District. Minimum lot sizes for single family detached dwellings served by public water and sewer is 10,000 S.F. Townhouses are allowed at a density of up to 6 units per acre.

Limited Commercial C-1 District - Allows agriculture, offices, municipal facilities, and various retail uses. Minimum lot size is 10,000 S.F. with public water and sewer; 40,000 S.F. with neither.

General Commercial C-2 District - Allows uses in the C-1 District as well as expanded uses including hotels and motels, restaurants, recreation facilities, dry cleaning establishments and veterinary offices and large-scale retail establishments. Mobile home parks and accessory dwelling units are also permitted by special exception. Dwellings are allowed when combined with a business use. Minimum lot size is 10,000 S.F. with public water and sewer. The C-2 District also permits mobile home parks with a maximum density of 5 units per acre.

General Industrial District - Allows agricultural, municipal and accessory uses by right. By special exception it allows laboratories; manufacturing; processing and assembling; storage, warehousing and wholesaling; industrial parks; and mineral extraction. Minimum lot area is 15,000 S.F.

Light Industrial District - Allows same uses as the General Industrial District with the exception of junkyards, mineral extraction, asphalt manufacture, hazardous chemical, and solid waste facilities.

Floodplain Provisions - These provisions function as an overlay district, and include regulations that supersede the regulations of any underlying zoning district. Floodplain areas are generally limited agricultural, recreational, and open space uses.

Subdivision and Land Development Regulations

The Mount Joy Township Subdivision and Land Development Ordinance contains regulations for on-lot sewage disposal systems which are particularly relevant to sewage facility planning. Section 402(C) includes a feasibility study for subdivisions proposing OLDS which requires the preservation of an area suitable for a replacement absorption area, satisfactory soils testing for each lot prior to subdivision approval, and establishes standards for alternate on-lot systems. Likewise, Section 402(E) establishes requirements for on-lot water supplies which address groundwater recharge, usage rates, and the effect on the water table.

1.3 Analysis of Wastewater Planning

Previous wastewater planning has not adequately addressed the current needs of Mount Joy Township. The wastewater planning documents summarized earlier in this section are deficient due to their age and the lack of detailed background data specific to the Township. Recent and projected growth trends have varied from previous planning. Options for greater regionalization beyond Elizabethtown are no longer feasible options.

1.4 Growth Areas

The Township's 1996 Comprehensive Plan contains growth area delineations for growth over the next 10 years. The Growth Management Plan provides for growth around the Elizabethtown and

Mount Joy Borough centers generally in the Route 230 and Route 283 corridor. The management areas and zoning discourage further residential growth east of Route 283. A residential rural buffer has also been established to encourage an open gap between the Rheems and Elizabethtown growth centers within the 10-year growth period. As the current growth areas are built out, it is anticipated that growth in the 10- to 20-year period and beyond will occur in this area with the availability of public water and sewer.

A second aspect of the future Township Growth Management Plan and new zoning is the expansion and encouragement of industrial core development areas around the two Route 283 interchanges. The Township is investigating options for developing these areas to develop an industrial tax base.

Growth is also planned for balanced commercial growth in the Township. Commercial development zones exist along the Route 230 (Harrisburg Pike) between Elizabethtown and Mount Joy Boroughs, along the Route 743/Route 283 interchange, and at the existing Ridgeview Road area.

For the purpose of this 537 Plan, the areas zoned for growth will be evaluated to determine existing and anticipated sewage facility needs and will initiate a plan of action intended to resolve the perceived needs.

The 537 Plan will address residential, commercial and industrial growth areas as proposed for public sewer service.

Non-growth residential areas west of Route 283 will be considered for continued on-lot service unless a clear need would be established for a local treatment option.

With the potential capital investment that may be needed for the region to achieve planning goals for public sewer service in future growth areas of the Township, the 537 Plan will need to evaluate projected demand beyond the 5- to 10-year growth period.

Improvements such as sewer interceptors are designed for a 40-year life. In addition, intermunicipal coordination and capital expansion requires longer term planning due to longer implementation constraints and financing considerations.



CHAPTER 2



CHAPTER 2

PHYSICAL DESCRIPTION OF PLANNING AREA

2.1 Description of Study Area

Base Planning Area

Mount Joy Township is located in the northwestern part of Lancaster County. Elizabethtown Borough, East Donegal Township, and West Donegal Township are to the west, Mount Joy Borough is to the south, Rapho Township is to the east, and South Londonderry Township, Lebanon County and Conewago Township, Dauphin County are to the north. The base planning area for this study includes all of Mount Joy Township. Plate 1 illustrates the regional location of Mount Joy Township with respect to Southcentral Pennsylvania.

Sewer Authority Boundaries

The sewer service boundaries of MJTA are congruent with the Township's municipal boundaries.

Topography

The majority of Mount Joy Township lies within the Triassic Lowlands. The southeastern portion of the Township lies within the Lancaster Plain and the northeastern tip lies within the Furnace Hills. The region can be characterized as having gently rolling to moderately sloped topography. The Township contains four major drainage basins which are drained by a tributary to Donegal Creek, Conewago Creek, Conoy Creek, and Little Chickies Creek. The most significant areas with slopes in excess of 25 percent are found adjacent to the following roads: Fairview Road (adjacent to Mount Joy Borough), Ridge Road (north side), Grand View Road (west side), Quarry Road (south side), Camp Road (north side), and Newville Road (north side). Map 2 shows the Township's drainage basins and steep slopes.

The highest point within the region is at approximately 720 feet above sea level and is located in the far northeastern tip of the Township between Camp Creek Road, the Little Chickies Creek, and the Lebanon County line. The lowest point is at approximately 320 feet above sea level and is located in the far southeastern corner of Mount Joy Township along the Little Chickies Creek at Mount Joy Road.

Surface Waters

Water quality standards were established by DEP through the adoption of Title 25, Chapter 93. Streams are designated according to the water use. The following water use designations apply to the streams in Mount Joy Township:

REGIONAL LOCATION

MOUNT JOY TOWNSHIP, LANCASTER COUNTY, PA



- CWF** Cold Water Fisheries - Maintenance and propagation of fish species and additional flora and fauna which are indigenous to a cold water habitat.
- TSF** Trout Stocking - Maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.
- HQ** High Quality Waters - A stream or watershed which has excellent quality waters and environmental or other features that require special water quality protection.

Major streams within the Township are classified as follows:

Little Chickies Creek:	TSF
Unnamed Tributary to Donegal Creek:	CWF
Donegal Springs:	HQ-CWF
Conewago Creek:	TSF
Conoy Creek:	TSF

Floodplains

Floodplains allow for the drainage of large amounts of water during wet weather, and any dense vegetation covering floodplains filters out sediment and pollutants. Increased development and agricultural activity close to and within floodplains can result in increased erosion, stormwater runoff, and a general degradation of the quality of surface water. The 100-year floodplains shown on Map 2 are based on studies prepared by the Federal Emergency Management Agency. Floodplains include areas along the banks and/or tributaries of the Conewago, Conoy, Donegal, and Little Chickies creeks.

Wetlands

As defined by DEP, the U.S. Environmental Protection Agency (EPA), and the U.S. Army Corps of Engineers, wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Map 3 shows wetlands which were mapped by the National Wetlands Inventory and the Lancaster County Natural Heritage Project. In Mount Joy Township, wetlands are generally confined to relatively small areas adjacent to surface waters or within other low lying areas.

Wildlife Preservation

DEP maintains the Pennsylvania Natural Diversity Inventory (PNDI), a database which identifies plant and animal species which are either endangered or threatened. Throughout 1989 and 1990, LCPC and the Pennsylvania Science Office of the Nature Conservancy conducted field studies and consulted PNDI records for the preparation of the Natural Areas Inventory of Lancaster County. This study identified two sites of local significance within Mount Joy Township: (1) Bellaire Woods and (2) Conewago Trail Floodplain (see Map 3). Bellaire Woods was recognized for its woodland wildlife habitat and the relatively few invasive plant species.

Likewise, the Conewago Trail Floodplain is important due to its recreational value, forested floodplain, and the variety of herb species found in one section.

Prime Agricultural Soils

A description of the physical characteristics of Mount Joy Township would not be complete without addressing the agricultural value of the land. Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited for producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and water supply needed to economically produce a sustained high yield of crops when it is treated and managed using acceptable farming methods. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment (USDA-SCS 1985). Qualities which characterize prime agricultural soils include high permeability to water and air, few or no rocks, optimum levels of acidity and alkalinity, 0 to 8 percent slopes, and the absence of flooding during the growing season. These soils may now be utilized for crops, pasture, woodland, or land covers other than urban land or water areas.

Prime agricultural soils, presented in Map 4, comprise approximately two-thirds of the Township's land area. The largest contiguous concentrations of prime agricultural soils are found east of Route 283 in the vicinity of Elizabethtown Road and on both sides of Route 283 south of Mount Pleasant Road.

2.2 Soils Analysis

The region consists of three general soils units. The Ungers-Bucks-Lansdale unit covers the northern two-thirds of Mount Joy Township; the Duffield-Hagerstown unit covers the southern tip of the Township; and the Bedington unit is a pie-shaped wedge between these two units.

The Ungers-Buck-Lansdale unit consists of mostly well-drained soils, underlain with Triassic siltstone, conglomerate, shale, and sandstone. Much of it is in agricultural use, while other uses include woodland, recreation, and residential development. Slope and stoniness are the main limitations for non-agricultural use. The Duffield-Hagerstown unit consists of well-drained soils which are underlain with limestone. This unit is mainly in cropland, and sinkholes and the possibility of groundwater contamination are its major limitations. The Bedington unit consists of well-drained soils, underlain with acid shale. This unit is mostly in cropland, with some areas being woodland or in urban uses. Slope is the main limitation for non-agricultural uses in some areas.

This soils evaluation is given to provide a general indication of the soils limitations for OLDS which generally exist in the various Township sectors. The specific determination of the soil limitations should only be made after detailed testing at the site by a Sewage Enforcement Officer or soil scientist.

The characteristics of soils in Mount Joy Township were reviewed in order to determine the probable soil limitations for on-lot sewage disposal. Information on this topic was obtained from

the *Soil Survey of Lancaster County* (Custer 1985). The following classification system was used to rate these soils according to their limitations for OLDS:

slight	generally favorable.
moderate	not favorable; special planning and design is needed to overcome limitations.
severe	very unfavorable; special design, significant increases in construction costs, and possibly increased maintenance would result.

In addition to the general limitations for OLDS, it is important to evaluate the types of on-lot systems which are appropriate based on individual soil characteristics. The vast majority of the Township's soils typically have severe or moderate limitations caused by shallow depth to bedrock. Therefore, elevated sand mound systems are the most appropriate system design for these areas unless site-specific soils testing contradicts the general limitations of the soils. Typical soil limitations for OLDS are presented in Map 5 and Table 1.

2.3 Geological Analysis

The soils series identified by DEP as being underlain by limestone geology have a high hazard of groundwater pollution through bedrock solution channels. As a result, even though many of these soils may be indicated in the *Soil Survey of Lancaster County* (Custer 1985) as having moderate limitations, the underlying geology is another factor to consider in the location of on-lot systems.

The geology of an area generally dictates important groundwater characteristics. The groundwater quality is affected by the manner in which the geological formation processes the infiltration of water from the surface to the aquifer. Typical contaminants which enter the groundwater in this fashion include nitrate-nitrogen and various bacteria. The hardness of water is also directly related to the mineral composition of the geology. The geological formation is also a good indicator of groundwater yield.

Potable water in Mount Joy Township is provided by private wells as well as from public wells and Elizabethtown Borough sources by MJTA. MJTA has recently established its own water supply sources on the north side of the Township.

From a geological standpoint, there are two factors to evaluate when considering development in limestone areas. These factors are ease of excavation for basements, foundations, and on-lot septic systems, and groundwater contamination potential. Table 2 presents a general summary of regional geological information. According to *Engineering Characteristics of the Rocks of Pennsylvania* (1977), excavation in these limestone formations is difficult and expensive due to numerous bedrock pinnacles and quartz veins. In addition, sufficient soil depth to bedrock for the dilution of sewage effluent may be inadequate.

TABLE 1 - O.L.D.S. SOIL LIMITATIONS FOR Mount Joy Township

SOIL	SYMBOL	LIMITATIONS	SAND MOUND*
Abbottstown silt loam	AbB	Severe-percs slowly, wetness	
Bowmansville silt loam	Bo	Severe-flooding wetness, percs slowly	
Bedington silt loam	BdA	Moderate-depth to bedrock, percs slowly	X
Bedington silt loam	BdB	Moderate-depth to bedrock, percs slowly	X
Bedington silt loam	BdC	Moderate-depth to bedrock, percs slowly, slope	X
Bedington Channery silt loam	BeD	Severe-slope	
Blairton silt loam	BM	Severe-depth to bedrock wetness, percs slowly	X
Brecknock gravelly silt loam	BrB	Moderate-depth to bedrock, percs slowly	X
Brecknock gravelly silt loam	BrC	Moderate-depth to bedrock, percs slowly, slope	X
Brecknock very stony silt loam	BsB	Moderate-depth to bedrock, percs slowly	X
Brecknock very stony silt loam	BsC	Severe-wetness, slope	X
Bucks silt loam	BuA	Severe-percs slowly	
Bucks silt loam	BuB	Severe-percs slowly	
Bucks silt loam	BuC	Severe-percs slowly	
Bucks very stony silt loam	BxC	Severe-percs slowly	
Clarksburg silt loam	CkA	Severe-wetness, percs slowly	
Duffield silt loam	DbA	Moderate-depth to bedrock	X
Duffield silt loam	DbB	Moderate-depth to bedrock	X
Elk silt loam	EcA	Moderate-percs slowly	
Elk silt loam	EcB	Moderate-percs slowly	
Hagerstown silt loam	HaA	Moderate-depth to bedrock, percs slowly	X
Hagerstown silt loam	HaB	Moderate-depth to bedrock, percs slowly	X

TABLE 1 - O.L.D.S. SOIL LIMITATIONS FOR Mount Joy Township, cont'd

SOIL	SYMBOL	LIMITATIONS	SAND MOUND*
Hagerstown silty clay loam	HbC	Moderate-depth to bedrock, percs slowly, slope	X
Hagerstown silty clay loam	HbD	Severe-slope	
Holly silt loam	Hg	Severe-flooding, wetness, percs slowly	
Lansdale loam	LaB	Moderate-depth to bedrock, percs slowly	X
Lansdale loam	LaC	Moderate-depth to bedrock, percs slowly, slope	X
Lansdale loam	LaD	Severe-slope	
Lehigh silt loam	LbB	Severe-percs slowly, wetness	
Lehigh silt loam	LbC	Severe-percs slowly, wetness	
Lindside silt loam	Ln	Severe-flooding, wetness	
Mount Lucas silt loam	MdB	Severe-wetness, percs slowly	
Mount Lucas very stony silt loam	MeB	Severe-wetness, percs slowly	
Quarries	Qu	not rated	
Readington silt loam	RaB	Severe-wetness, percs slowly	
Rowland silt loam	Rd	Severe-flooding, wetness, percs slowly	
Ungers loam	UaB	Moderate-depth to bedrock, percs slowly	X
Ungers loam	UaC	Moderate-depth to bedrock, percs slowly	X
Ungers loam	UaD	Severe-slope	
Ungers extremely stony loam	UbB	Moderate-depth to bedrock, percs slowly	X
Ungers extremely stony loam	UbD	Severe-slope	X

SOURCE: USDA Soil Conservation Service Soil Survey of Lancaster County (1985)

* Sand mounds generally required

GEOLOGIC FORMATIONS

<u>Formation</u>	<u>Characteristics</u>	<u>Water Bearing Properties</u>
Annville	Finely crystalline, calcium limestone.	Median yield of nondomestic wells is over 100 gal/min.
Cocalico	Bluish-black to dark-gray fissile shale.	Reported yields range from 1 to 100 gal/min; about half acre less than 20 gal/min.
Epler	Limestone and dolomite.	Reported yields range from 1 to 600 gal/min.; median is about 30 gal/min. (High nitrates are common).
Hershey & Myerstown Formations, Undivided	Hershey: limestone Myerstown: crystalline limestone	Water bearing properties unknown.
Diabase	Feldspar, pyroxene, and associated magnetite.	Often inadequate for domestic use; about 25 percent of wells require storage.
Hammer Creek	Limestone and sandstone.	Median yield for domestic wells is 10 gal/min, 90-144 gal/min. for non-domestic.
Hammer Creek Conglomerate	Red sandstone.	Median yield for domestic wells is 10 gal/min, 90-144 gal/min. for non-domestic.
New Oxford	Red mudstone, shale, and sandstone.	Reported yields range from 1 to 330 gal/min. Median is about 12 gal/min.
New Oxford Conglomerate	Red mudstone, shale, and sandstone.	Reported yields range from 1 to 330 gal/min. Median is about 12 gal/min.
Stonehenge	Limestone	Reported median yield is 20 gal/min.

Groundwater contamination is a critical factor to consider when developing land use plans for residential or agricultural uses. The limestone formations present in Mount Joy Township are extremely susceptible to groundwater contamination. This is due to the fact that contaminants entering the groundwater can be transported long distances in an undiluted and untreated manner through cracks and solution channels that form in limestone bedrock. As a result, caution should be exercised when applying nutrients (and pesticides or herbicides) during agricultural operations, and when issuing permits for on-lot septic systems in limestone formations in Mount Joy Township. Geology is shown on Map 6.

In summary, from a geologic standpoint, development of on-lot septic systems throughout the Township should be conducted with caution, especially in the limestone formations (Annville, Epler, Hershey, Myerstown, and Hammer Creek).

2.4 Demographics

Table 3 presents 1990 U.S. Census data which is relevant to sewage facilities planning.

TABLE 3
SUMMARY OF 1990 U.S. CENSUS DATA
MOUNT JOY TOWNSHIP

Total Population:	6,227
Persons in Households:	6,190
Occupied Housing Units:	2,169
Persons per Household:	2.85

Table 4 shows past population trends and Table 5 shows population projections derived from various sources.

For purposes of this study, the current population is estimated at 7,905 persons. At 2.85 persons per household, currently there are an estimated 2,774 total households or EDU's in the Township.

TABLE 4
HISTORIC POPULATION GROWTH

Year	Population	Percent Increase
1960	4,135	--
1970	4,228	2.2
1980	5,128	21.3
1990	6,227	21.4
1998	7,905	26.9

TABLE 5

POPULATION PROJECTIONS

Source	1990	2000	2010	2020
1970 Lancaster Sewerage Plan	4,440	NA	5,700	NA
1987 Lancaster Sewer and Water Study	6,090	6,860	7,520	NA
1994 LCPC	6,227	7,312	8,467	9,896
1996 Regional Comprehensive Plan	NA	NA	11,370	NA

Discrepancies between these projections are due to older data or different methods of making projections. Due to the number of proposed developments in the Township and the potential for future development as a result of the availability of public services, projections for future wastewater needs will be developed independently as a part of this study.

2.5 Subdivision Activity

Appendix 1 presents a history of subdivision and land development planning in the Township. The listing is keyed to locations of the developments on Map 7.

CHAPTER 3



CHAPTER 3

EVALUATION OF EXISTING WATER AND WASTEWATER FACILITIES

3.1 Existing Water Supply

The majority of water supplied to Mount Joy Township is provided by individual onsite wells. Section 3.5, Groundwater Quality, addresses the area geology and the estimated quantity and quality of the groundwater.

Water supply is also provided by MJTA to customers by extensions of the Elizabethtown Borough and West Donegal Township Authority (village of Rheems) water systems and more recently by development of MJTA's Northside water system to supply the developments of Rockwood, Northbrooke and Ironstone Manor, in addition to adjacent existing and future development.

As of September 1998, approximately 721 customers were served. Map 8 identifies the existing areas served by public water and extensions in the near future due to ongoing development. The map also includes major components of the Elizabethtown system which continues to supply water to adjoining areas of the Township. Public water is also available at the Lakeview Mobile Home Park., State Correctional Institute Training Academy, and to a few customers tributary to the Mount Joy Borough system. In 1996, MJTA completed the first extension of water to its Southside water system by the extension of a water main along Cloverleaf Road to the Route 283 interchange.

Proposed development within the Township has resulted in a request for over 600 additional public water system connections. MJTA is in the process of investigating options for new capacity to meet the projected demand for water. MJTA has worked with developers to develop a capitalization plan to finance the extension of public water to new development. This includes requirements for installation of capped water lines in new developments.

Current water rates for public water are as follows:

Connection - \$2,700 plus \$75 permit plus \$110 meter assembly and backflow prevention.

Yearly Rental - \$23.00 per quarter for the first 5,000 gallons plus \$4.60 per 1,000 gallons over 5,000 gallons.

As the public water system is expanded within Mount Joy Township, consideration needs to be given to interbasin transfers of water and wastewater. MJTA's rules and regulations requires the use of water conservation devices in new construction.

Planning goals for the Township and MJTA are to continue to provide public water service to growth areas where feasible.

3.2 Existing Wastewater Facilities

Mount Joy Township Authority Service

MJTA provides public wastewater facilities within the Township. Map 9 illustrates the extent of the existing facilities. Wastewater flow is conveyed to both the Elizabethtown and Mount Joy Borough treatment facilities. This system consists of over 13 miles of 8- and 12-inch sewers. There are presently no treatment facilities owned or operated by MJTA in the Township. However, MJTA operates five pump stations located at Mill Road, Hershey Road, Schwanger Road, Aberdeen Road and at the Conewago Creek. Table 6 from the 1996 Chapter 94 report summarizes existing pump station conditions.

At the end of 1997, there were 1,683 and 61 equivalent dwelling units (EDU's) connected to the Elizabethtown and Mount Joy Borough systems, respectively. Existing flows to Elizabethtown were 239,000 gpd in 1997 based on metered and estimated unmetered flow. Metering accounts for 74 percent of Township flow. Based on a metered flow, current gpd per EDU was calculated to be 142. The metering chambers are identified as Kiwanis Boulevard, Radio Road, and the West Donegal metering chambers.

TABLE 6

MJTA WASTEWATER PUMPING STATIONS

Station	Actual Capacity (mgd)	Present Conditions	
		EDU's	Flow (mgd)
Hershey Road	0.114	337	0.044
Mill Road	0.071	248	0.037
Schwanger Road	0.108	507	0.058
Aberdeen Road	0.045	74	0.009
Conewago	0.012	24	0.003

- (1) Actual capacity based on Average Daily Flow with pump out of service, 2.5 peak factor, and wet well drawdown testing.
- (2) Information provided from 1996 MJTA Chapter 94 report prepared by Gannett Fleming.

MJTA allocates its capacity on a "first-come-first-served" basis. Connection permits are valid for two years. If a connection permit is not purchased within one year, the developer must begin to pay MJTA a percentage of the carrying cost of reserving the capacity. Capacity in the past was based on DEP's standard of 350 gpd per EDU (gpd/EDU). Based on metered data, average flows are between 150 and 180 gpd per EDU. Future planning is proposed based on 270

gpd/EDU to reflect a smaller household population and more reliable estimated flows utilized in the region. The 270 gpd/EDU estimate also accounts for 3-month maximum average daily flows during seasonal wet weather periods.

Current fees in Mount Joy are as follows:

<u>Connection</u>	
Sewer:	\$2,170 plus a \$75 permit
<u>Yearly Rental (Sewer)</u>	
Residential:	\$66.50 per quarter per EDU
Non-Residential:	\$66.50 per quarter for the first EDU plus \$5.82 per 1,000 gallons over the first EDU. (All commercial flows are metered)

Based on a review of the existing system and the Chapter 94 reports prepared for MJTA, the West Donegal Township Municipal Authority (WDTMA), Elizabethtown Borough, and Mount Joy Borough, the existing wastewater facilities are adequate to serve current conditions. The MJTA maintains its system in good operating condition and has a current infiltration/inflow (I/I) inspection program to determine priorities for preventive maintenance of the system. Based on current gpd/EDU calculations, I/I is not considered to be excessive for the overall system in Mount Joy Township.

Elizabethtown Borough Treatment Facility Service

MJTA has an agreement with Elizabethtown Borough for 404,000 gpd of reserved capacity. Appendix 2 includes a copy of this agreement.

Elizabethtown Borough owns and operates a secondary wastewater treatment plant (WWTP) which utilizes a 2-stage trickling filter process with chemical addition for phosphorus removal. In addition to Mount Joy Township, this facility treats flows from Elizabethtown Borough and portions of West Donegal Township. The Borough operates the facility under DEP NPDES Permit No. PA-0023108, which is valid through March, 2000 for discharge to the Susquehanna River. A summary of the NPDES permit criteria is presented below:

Parameter	Monthly Average Loading	Monthly Average Concentration
BOD	626 #/day	25 mg/l
TSS	751 #/day	30 mg/l
P	50 #/day	2 mg/l
DO		5.0 mg/l minimum
pH		6.0 min. to 9.0 max.
Flow		3.0 mgd
Total Residual Chlorine		0.5 mg/l
Fecal Coliform		200/100 ml summer 100,000/100 ml winter

The Borough staff's efforts in the operation, maintenance, and utilization of the wastewater treatment facilities are reflected in the outstanding plant performance record; the limited downtime of key system components; the general excellent condition of the facilities; and in the continued training efforts to maintain up-to-date operational techniques. As a result, the treatment facility is able to consistently meet or exceed its effluent limits.

Recent Chapter 94 annual reporting for the Elizabethtown WWTP from 1994 through 1997 is summarized in Table 7 along with a comparison of rainfall data.

While able to currently address permit limits for treatment, the plant in recent years due to protracted wet weather conditions has suffered from hydraulic overloading. Capacity limits, particularly in the outfall sewer from the treatment plant to the Susquehanna River, do not have the peak flow capacity to serve current conditions.

In August 1998, DEP was required to act and requested the contributing municipalities to submit a plan of action to address the hydraulic overload conditions. In addition, DEP imposed a building limitation on further connections.

The three contributing municipalities have developed an implementation plan to further increase efforts at infiltration/inflow control. The implementation plan also includes completion of planning efforts to expand and upgrade capacity for the plant and outfall.

Further evaluation of the Elizabethtown wastewater treatment facility is presented in the accompanying report prepared as a part of the regional alternatives evaluation for the 537 planning effort of Mount Joy Township, West Donegal Township and Elizabethtown Borough.

In order to utilize the Elizabethtown WWTP, it was necessary for MJTA to purchase the capacity of conveyance and collection facilities in West Donegal Township owned by WDTMA and Elizabethtown Borough. MJTA has purchased 535,200 gpd of average daily flow capacity in the Elizabethtown collection and conveyance system main interceptor. In addition, MJTA has approximately 132,500 gpd of average daily flow capacity in WDTMA conveyance facilities to the Borough plant. Current estimated flows through the WDTMA system are 109,000 gpd. Map 9 illustrates the key intermunicipal facilities utilized by MJTA. MJTA is currently evaluating these conveyance facilities for future development if additional treatment capacity at Elizabethtown is available or expanded.

Mount Joy Borough Treatment Facility Service

Current wastewater flow to Mount Joy Borough was estimated at 8,500 gpd in 1995 based on 61 EDU's at 144 gpd/EDU. Treatment facilities include a 2-stage aeration plant with a capacity of 1.53 mgd, and an average flow of 0.75 mgd (1995) with discharge into Little Chickies Creek. Summer season discharge permit requirements are as follows:

NPDES Permit No. PA-0021067
25 mg/l CBOD₅
30 mg/l SS
4.5 mg/l NH₃ - N
2.0 mg/l TP

TABLE 7

MONTHLY ANNUAL AVERAGE DAILY FLOW TOTALS
AND RAINFALL DATA

TREATMENT PLANT AVERAGE FLOWS (ADF)				
	1994	1995	1996	1997
Annual ADF (mgd)	2.129	1.700	2.430	1.927
Total Annual Rainfall (inches)	48.41	45.52	55.81	36.83

	1994		1995		1996		1997		1998	
	Monthly Average Flow (mgd)	Monthly Rainfall (inches)	Monthly Average Flow (mgd)	Monthly Rainfall (inches)	Monthly Average Flow (mgd)	Monthly Rainfall (inches)	Monthly Average Flow (mgd)	Monthly Rainfall (inches)	Monthly Average Flow (mgd)	Monthly Rainfall (inches)
Jan.	1.600	4.89	2.292	4.63	3.722	7.75	2.198	2.12	2.735	5.46
Feb.	2.499	2.90	1.696	2.05	2.905	1.75	1.999	1.99	3.286	4.94
March	6.334	6.30	1.833	1.50	2.469	4.37	2.417	4.45	3.989	5.88
April	2.582	3.40	1.536	2.25	2.929	4.61	2.097	1.08	2.475	5.03
May	1.582	3.10	1.453	3.18	2.275	3.98	1.633	3.92	3.305	6.07
June	1.375	3.15	1.401	4.10	1.803	5.09	2.236	3.20	2.478	6.66
July	1.610	6.30	1.796	8.20	2.547	6.64	1.628	4.77		
Aug.	1.756	4.95	1.481	1.85	1.777	2.68	1.820	4.06		
Sept.	1.472	2.65	1.243	2.01	2.166	3.79	1.554	2.27		
Oct.	1.332	0.90	1.876	8.10	2.217	5.27	1.845	2.14		
Nov.	1.607	6.22	2.302	5.10	2.330	4.03	1.762	4.66		
Dec.	1.804	3.65	1.495	2.55	3.312	5.85	1.932	2.17		

Requests for capacity in the past were negotiated on a case-by-case basis by Mount Joy Borough. MJTA has negotiated with the Mount Joy Borough Authority to establish a reserved capacity for future connections.

The agreement provides for 183,400 gpd of capacity which is equivalent to 524 EDU's at 350 gpd/EDU. A copy of the agreement and established service area is provided in Appendix 2.

As part of this agreement, in 1996 MJTA turned over responsibility and ownership of its facilities within the agreement's service area to the Mount Joy Borough Authority. The Mount Joy Borough Authority is in the process of implementing recommendations of a March 1995 Sewer Study to upgrade the treatment facility to 2.5 mgd of capacity.

Other Treatment Facilities

The Conewago Industrial Park in West Donegal Township is a private facility constructed in 1970 with a present capacity of 75,000 gpd. The plant is permitted to 150,000 gpd under NPDES Permit No. PA-0080055. Existing flows are estimated at 8,000 gpd. The plant consists of a steel package extended aeration process with a concrete sludge holding tank. Effluent limits are 15/15 BOD/TSS, seasonal NH₃-N at 3 and 9 mg/l, and 2 mg/l phosphorus. Effluent discharge is to the Conewago Creek.

3.3 On-Lot Disposal Areas

Individual onsite wastewater treatment is utilized by development in the Township not currently on public sewer. Aside from individual lots and strip R-2 zoned development surrounded by agriculturally zoned areas, there is no significant area zoned for new residential development that relies on on-lot wastewater management. There are no community on-lot systems in the Township

3.4 Unpermitted Disposal Areas

To the Township and SEO's knowledge, there are no existing unpermitted wastewater disposal areas in the Township with the exception of those on-lot facilities constructed prior to 1966 before permitting was required.

3.5 Sludge Generation and Disposal

Solids generated from public sewer wastewater treatment in Mount Joy Township are treated at the Elizabethtown and Mount Joy Borough treatment facilities. The Elizabethtown facility dewater its solids and landfills at the Lancaster County Solid Waste Authority facility or incineration at the Harrisburg incinerator. The Edward Sumpman farm along Fairview Road in Mount Joy Township is utilized by Mount Joy Borough for agricultural utilization of its solids. Neither facility handles septage waste.

Septage sludge is typically handled by three septic services:

- Edward Armstrong & Sons
- Kline's Septic Service
- Kauffman's Septic Service

Edward Armstrong & Sons and Kline's Septic Service provide their own treatment operations for septage.

Sludge from these services are typically transported to the Derry Township Municipal Authority for treatment. None of these services has permitted sites for disposal in the Township.



CHAPTER 4



CHAPTER 4

EVALUATION OF WASTEWATER TREATMENT NEEDS

4.1 Areas Dependent on OLDS

In accordance with the current Regional Comprehensive Plan, the proposed growth in Mount Joy Township is planned for the area west of Route 283 and in the vicinity of the Rheems and Route 743 interchanges. This growth is proposed to be handled by the extension of public sewer and water. Existing onsite systems will be served by the sewer lines which will be constructed in their vicinity.

Agriculturally zoned areas are to be maintained as rural low density, and therefore, will need to rely on on-lot treatment. The majority of these areas lie in the Little Chickies Creek drainage basin.

4.2 Identification of Malfunctions

According to the Township SEO, there are no known on-lot system malfunctions in Mount Joy Township. All known malfunctions have been issued repair permits by the SEO. Repair permits which were issued between 1987 and the present are shown on Map 10. In the past, malfunctions were recorded in the Aberdeen area, Milton Grove, the area north of Elizabethtown Road, and in other scattered locations throughout the Township. Malfunctions primarily resulted from poorly drained soils and systems designed prior to the enactment of DEP's Chapter 73 regulations in 1966.

4.3 Potential Malfunctions

An assessment was conducted to identify the areas of the Township where the following conditions exist that may contribute to the potential failure of an on-lot system:

- Dwellings constructed prior to 1966 (when design, construction, and inspection standards were developed);
- Repair permits;
- Floodplain;
- Steep slopes; and
- Housing density.

This information is presented in Map 10. By comparison with the existing wastewater facilities map (Map 9), soils map (Map 5), and existing information, two areas were identified as a consideration for public sewer service:

- Fairview and Terrace Roads junction north of Mount Joy Borough. Area consists of 12 EDU's.
- Village of Milton Grove. Area consists of 20 EDU's with surrounding strip development.

The Fairview and Terrace Roads area consists of older small lot homes. This area is proposed to be sewerred within five years as a result of the extension of public sewer by a proposed development tributary to Mount Joy Borough. MJTA has negotiated with the Borough to reserve capacity for growth which will allow this to occur.

The Milton Grove area is surrounded by agriculturally zoned areas and is currently located some distance from existing public sewers or proposed growth areas. In addition there is limited potential for further growth in this area. This area can be evaluated for alternatives to on-lot systems as a long-term improvement to the area if financially feasible.

Surrounding strip development will also be considered to evaluate cost effectiveness.

Table 8 presents a summary of the needs analysis of the estimated 1,173 EDU's that presently utilize on-lot disposal in the Township. As noted, an estimated 35 percent of the on-lot systems represent a potential malfunctioning system. Primarily this percentage may be due to the possibility that systems constructed prior to 1966 may not have been built to current acceptable standards, and in soils that may not be suitable for on-lot systems. Other than the areas mentioned above, these potential malfunctions are considered to be fairly well dispersed across those areas of the Township that are not presently served by public sewer. These areas are also either not zoned for future growth or have been fully developed as strip development.

4.4 Hydrogeological Analysis

A hydrogeological analysis of groundwater quality in the Township was performed during the summer of 1991. Results are summarized in Table 9. Nitrate-nitrogen results and sample locations are shown on Map 11. Areas with elevated nitrate-nitrogen results are presented in Map 12. A listing of all results are provided in Appendix 4. In total, 270 samples were tested.

The samples were tested for nitrate-nitrogen levels, total coliform, and fecal coliform with a representative sampling for fecal streptococcus. General results are found in Table 9.

TABLE 8

**MOUNT JOY TOWNSHIP
SUMMARY OF NEEDS ANALYSIS**

Limitation	EDU's Affected	Percent of Total
Floodplains	0	0
Slopes Over 25%	0	0
Severe Limitations as Defined by the SCS (geology and soils)	231	20
Wetland/Hydric Soils ¹	5	<1
Wells With Unacceptable Test Results (270 tests)	195	72
Potential Sub-Standard On-Lot Systems (pre-1966)	412	35
Potential Malfunctions	412	35

* 1,173 EDU's utilize OLDS. Percentages do not total 100 due to multiple limitations for some EDU's.

¹ Includes floodplain soils, wetlands as indicated by the USDA Fish and Wildlife Service's National Wetlands Inventory, and all soils listed as having major hydric components and inclusions of hydric components, according to the USDA Soil Conservation Service's Hydric Soils of the State of Pennsylvania, 1985.

TABLE 9

**MOUNT JOY TOWNSHIP
HYDROGEOLOGICAL STUDY RESULTS AND SUMMARY**

	Total Coliform (/100 ml)	Nitrate- Nitrogen (mg/l)	Fecal Coliform (/100 ml)	Fecal Strep (/100 ml)
Total Samples	270	270	270	270 66
Average	10.82	8.4	5.58	6.03
Maximum Value	95	34.3	80	513
Total Unacceptable	95	83	60	21
	35.2%	30.7%	22.2%	31.8%
Total Marginal	--	87	--	--
		32.2%		
Total Acceptable	175	100	210	45
	64.8%	37.0%	77.8%	68.2%

Nitrate-Nitrogen

DEP and EPA have adopted a maximum allowable limit of 10 milligrams per liter (mg/l) of nitrate-nitrogen for public/community water and sewer systems.

For the 270 samples, the nitrate-nitrogen levels ranged from 0.18 mg/l to 34.3 mg/l. More specifically, 83 (30.7 percent) of the samples tested have nitrate-nitrogen levels above the allowable limit of 10 mg/l. In addition, 84 (31.1 percent) of the samples had nitrate-nitrogen levels between 5 and 10 mg/l. Nitrate-nitrogen is a chemical compound containing nitrogen and oxygen, and may be associated with excessive or inappropriate land applications of manure. Ingestion of large amounts of nitrate-nitrogen can cause blood to be less able to carry oxygen. This condition may be dangerous to infants up to 6 months of age, as well as to pregnant or nursing mothers. High nitrate-nitrogen levels can also cause harm to livestock. DEP also recommends that infants, pregnant women, and nursing mothers be provided with alternate sources of safe drinking water if their domestic water exceeds 10 mg/l of nitrate-nitrogen.

The high nitrate levels also correspond to the predominantly long-term agricultural use in the area. High nitrate levels in agricultural areas with limestone geology are common in the Lancaster County area. As a result, nitrate groundwater contamination cannot be determined to be a result of malfunctioning OLDS, agricultural activity or both. Nitrate test results alone cannot be used in this case as a determination for the need for public sewer.

Coliform

Coliform bacteria are measured in terms of colonies per 100 milliliters (ml). Of the samples collected, 95 (35.2 percent) had more than one colony of total coliform per 100 ml. Also, 60 (22.2 percent) of the samples collected had more than one colony of fecal coliform per 100 ml. Total coliform is normally found in the intestines of humans, but is found in birds and animals, as well as in the soil. The bacteria is used as an indication that other pathogenic organisms may also be present. Fecal coliform is more closely associated with humans and warm blooded animals.

Fecal Streptococcus

Fecal streptococcus tests were performed on 25 percent of the samples. Of the samples collected, 21 (31.8 percent) had more than one colony per 100 ml. This bacteria is found in human and animal waste, but is not usually pathogenic. Fecal streptococcus is a relatively fragile organism and does not survive long in a cold water environment. Presence of fecal streptococcus usually indicates that the source of contamination is relatively close to the water source otherwise, the organism would probably have died.

The hydrogeological study also investigated the type and condition of each tested well. (In some cases, no information regarding type or condition was available). In general, most wells are drilled, with depths ranging from 30 feet to 450 feet. The shallowest drilled wells appear to be associated with coliform contamination, suggesting improper casing. There does not appear to be any strong correlation between increasing depth and decreasing nitrate-nitrogen levels. Hand-dug wells showed high levels of contamination but the sample (3) is not sufficient to support any conclusions.

In view of the data and general dispersal of potential problem sites throughout the Township, there are no specific areas identified as need areas that are required to be addressed by methods other than an individual lot-by-lot basis through repairs, voluntary in-home water treatment measures or improvements to well construction.

Further needs assessment is not justified at this time unless it is necessary to support PennVEST funding if sewer is shown to be economically feasible.

The Milton Grove area represents the greatest remaining village and population density when nearby strip development is included. An investigation of public sewer could be considered if economically feasible as a benefit to the residents of this area.

4.5 Projected Development Wastewater Needs

Proposed and future development clearly present the greatest need for wastewater facilities in Mount Joy Township. In accordance with previous planning, this growth is occurring as extensions of both Elizabethtown and Mount Joy Boroughs where both existing centralized sewer and water facilities exist.

Table 10 presents a summary of the MJTA capacity reservation list. This list illustrates the number of EDU's currently proposed for development that will require public sewer. Of the 1,792 EDU's requested, 528 EDU's are reserved for connection out of an original 780 EDU's granted. The 528 EDU's represent 142,560 gpd as the remaining allocation at Elizabethtown. An additional 1,012 EDU's are awaiting capacity at the Elizabethtown plant.

Based on 2.85 persons per household and 95 gpd per person to determine the above flows, an additional capacity of 273,240 gpd is needed in treatment capacity for currently proposed development.

Map 13 was developed to assist in the determination of future sewer needs in remaining available lands zoned for growth. This map identifies areas presently served by sewer, areas accounted for in the MJTA reservation list and areas considered unavailable for development due to agricultural zoning and current use (i.e. cemetery, institutional land, floodplain). The remaining lands were evaluated for additional wastewater capacity needs in the 20-year planning period. Based on current zoning provisions, the ultimate development potential was calculated using 60 percent of the land areas which are available for residential and commercial development.

A projection of 680 gpd per acre was used for industrial zoned land based on historical usage in similar industrial parks in Lancaster County.

The projections have been developed for the minor drainage basins shown on Map 2. These basins correspond to the conveyance system service areas identified on Map 9. Table 11 summarizes the estimate of the number of EDU's for available undeveloped land zoned for growth.

Table 12 was developed to establish flow projections for each sewer service basin using the 20-year projections (based on a 40 percent build-out rate) as well as existing and proposed development. Projections of 1,297,100 gpd exceed the current reserved capacity by 893,100 gpd. Note that these estimates do not include capacity for serving the Milton Grove area if feasible.

TABLE 10

MOUNT JOY TOWNSHIP AUTHORITY
SEWER CAPACITY RESERVATION REQUEST
LIST (EDU'S) as of 04/15/98

Drain Area	Development	Requested	Granted	Remaining	Year 1-5	Year 6-10	Year 10+
B	Bailey-Lakeview Country Est.	2	2	2	2		
J _P	Virgina Hoover	25	0	0	0	25	
L	Shybrook Meadows	45	45	6	6		
J _P	Gerald Hackman	15	0	0	0	15	
J _P	Pfaunmiller, Elwood	3	3	3	3		
J _G	Westbrooke II	28	28	2	2		
J _P	Westbrooke III	37	37	30	30		
H	Wendy's	8	8	8	8		
J _P	Farmbrooke III	30	30	6	6		
I	Espenshade	2	2	1	1		
J _G	Cloverleaf Sports Center	32	32	32	32		
J _P	Messick	2	2	2	2		
I	Bradfield Place I,II,III	136	136	136	91	45	
J _G	Shady Oaks I,III	74	74	74	28	46	
I	Shady Oaks II	38	38	38	38		
B	Rockwood III,IV	176	98	29	29	78	
L	MJT Associates	32	32	32	32		
H	Matthews Apartments	1	1	1	1		
M	Northbrooke I, II, III	194	70	25	25	124	
M	Sweigart Tract	58	-	-		58	
J _G	Sico (Muir Lot)	1	1	1	1		
J _G	Olweiler - Route 230 Tract	3	3	3	3		
A	Timber Ridge	45	45	45	45		
J _P	Elizabeth Management	6	6	6	6		

TABLE 10

MOUNT JOY TOWNSHIP AUTHORITY
SEWER CAPACITY RESERVATION REQUEST
LIST (EDU'S) as of 04/15/98

Drain Area	Development	Requested	Granted	Remaining	Year 1-5	Year 6-10	Year 10+
M	Foxbury V	24	24	1	1		
D	St. Peter's Catholic Church	4	4	4	4		
A	English Brothers	1	1	1	1		
M	Brook Ridge - Morris	8	8	3	3		
M	Olweiler - Mount Gretna Road	6	6	6	6		
A	O'Conner Rental Center	1	1	1	1		
C	Paul Liskey	9	9	2	2		
A	Miller Tract	538	-		-	200	338
L	Spring Ridge	2	2	2	2		
J _G	Penmark	45	-	-	-	45	
J _P	Farmbrooke IV	48	-	-	-	48	
B	Kings Mill	18	18	13	13		
A	Colin Management	31	31	0	-	31	
B	Mary Royer	2	2	1	1		
B	Steinkamp	9	9	9	9		
M	Brethren in Christ Church	1	1	1	1		
J _P	Paul Zaiac	1	1	1	1		
J _P	Hernley's Farm Equipment	1	1	1	1		
C	Dorothy Slessor	1	-	-	1		
C	Roy Slessor	1	-	-	1		
C	Gary Johnson	1	-	-	1		
J _P	Kreider/Snowden Apts.	32	-	-	32		
J _G	Olweiler - Route 230	15	-	-	15		
TOTALS		1,792	780	528	487	715	338

TABLE 11

**ULTIMATE GROWTH PROJECTIONS FOR
AVAILABLE UNDEVELOPED GROWTH AREAS**

Drainage Basin	Undeveloped EDU Projections¹	Undeveloped Land Acres	Undevelopable Acres	Developed Acres²	Total Acres
A	217	89	90	286	465
B	258	99	163	121	383
C	141	84	205	47	336
D	494	273	158	-	431
E	371	158	70	13	241
F	179	71	106	20	197
G	-	-	103	65	168
H	705	270	-	43	313
I	414	185	-	82	267
J	1,796	837	62	348	1,247
K	20	8	-	26	34
L	691	305	5	130	440
M	16	6	-	178	184
TOTAL	5,302	2,385	962	1,359	4,705

¹ EDU's represent ultimate development.

² Existing sewerred and projected development.

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TABLE 12

PROJECTED WASTEWATER NEEDS
ELIZABETHTOWN AREA

Drainage Basin	Existing Flow (gpd)	Proposed Flow		Projected Flow ¹		Total ² (gpd)
		(EDU)	(gpd)	(EDU)	(gpd)	
A	28,200	616	178,500	87	23,500	224,700
B	32,000	132	73,700	103	27,800	111,200
C	--	5	18,100	56	15,100	25,500
D	--	4	--	198	53,500	54,600
E	--	--	--	148	40,000	40,000
F ³	--	7*	1,900	72	19,400	21,300
G ³	--	10*	2,700	--	--	2,700
H	9,600	9	500	282	76,100	87,900
I	3,500	175	48,300	155	41,900	101,600
J _G	18,000	172	48,100	104	28,100	97,800
J _P	61,700	169	44,800	626	169,000	272,600
K	7,100	--	--	8	2,200	9,700
L	33,600	40	12,700	276	74,500	116,700
M	26,000	218	72,900	6	1,600	90,800
P	--	--	--	148	40,000	40,000
Total	229,700	1,557	420,400	2,269	612,700	1,297,100

¹ Projections based on approx. 40% of ultimate EDU's (5,302) at 270 gpd/EDU.

² Average Daily Flow.

³ Miller tract proposed development included in Drainage Basin A.

* Existing homes w/ on-lot disposal systems.

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1557
2269
3826

A similar estimate was developed for the growth area tributary to the Mount Joy Borough system. Table 13 summarizes the estimates for this area. A development of 70 percent was assumed for this area due to its proximity to the Borough boundary and the limited land area which is available.

TABLE 13

**PROJECTED WASTEWATER NEEDS
MOUNT JOY BOROUGH AREA**

	EDU's	Flows gpd¹
Existing Development	69	24,150
Proposed Development		
Gantz	3	1,050
Deerfield II	48	16,800
Grandview Meadows	98	34,300
Terrace/Fairview Road	12	4,200
Mount Joy Career/Tech Center	1	350
Projected Development		
R-1	193	67,550
R-2	50	17,500
C	50	17,500
Total	524	183,400

¹ Based on 350 gpd/EDU.

Based on 350 gpd/EDU, a total of 183,400 gpd of capacity is projected for the Mount Joy Borough area. As noted previously, Mount Joy Borough is in the process of implementing a plan to provide for expansion in plant capacity to 2.5 mgd.

This capacity was included in the turnover agreement with Mount Joy Borough. A copy of the agreement is included in Appendix 2.

The overall projections to the year 2020 represent a total of 5,795 persons.

Projected population growth from 1998 based on ongoing and proposed residential development is equivalent to an increase of 617 EDU's or 1,759 persons to a total 2005 population of 9,664.

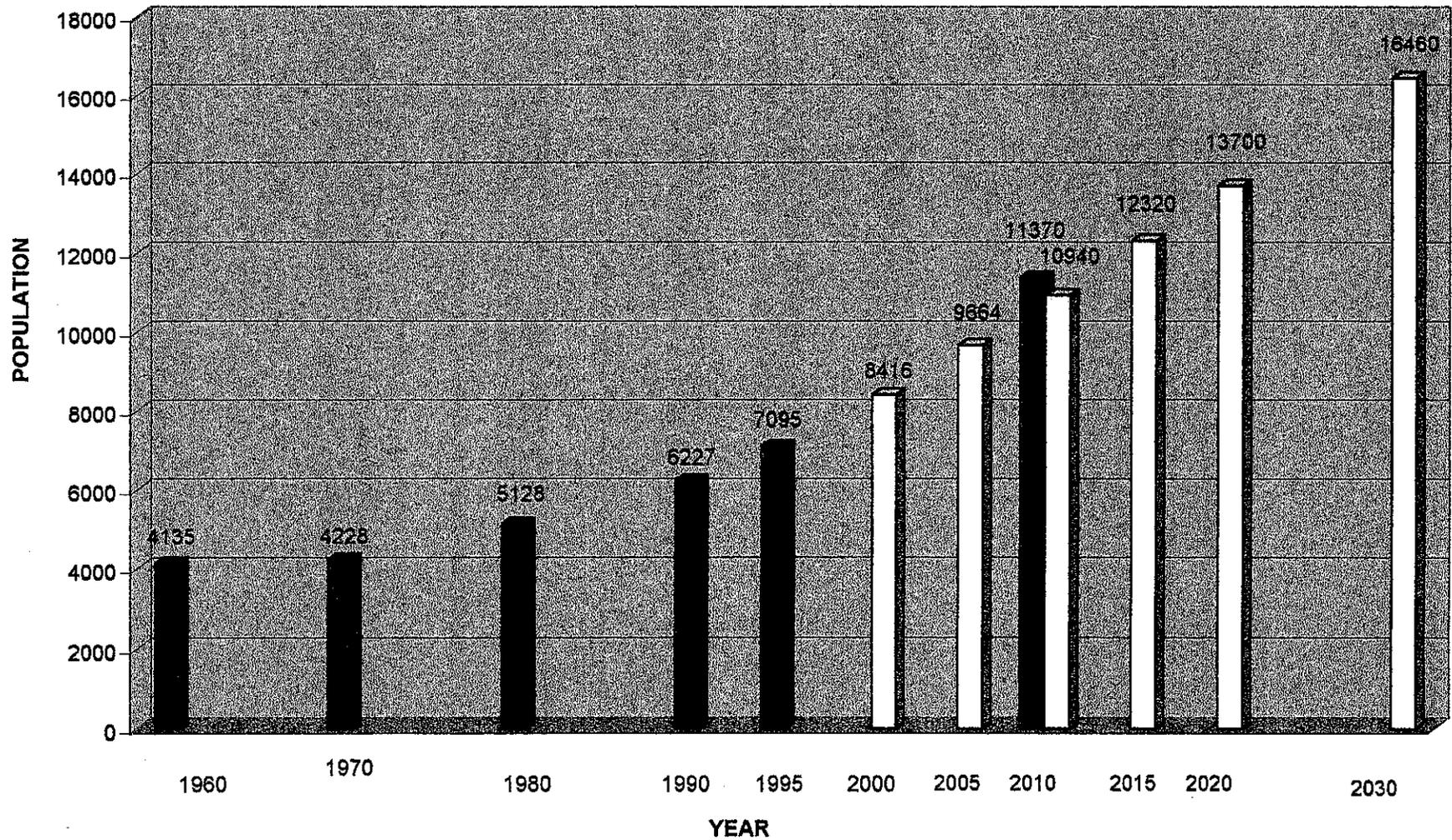
Projected growth of only residential ongoing and proposed development would add an additional 448 EDU's or 1,276 persons for a total year 2010 population of 10,940.

Projected long-term population in the year 2020 is estimated at 13,700.

Plate 2 illustrates a graph of projected population growth in Mount Joy Township.

These projections for growth will require evaluations of conveyance and treatment capacity on the Elizabethtown and West Donegal systems to determine the best method of wastewater management for this growth. Complicating this evaluation is the projected concurrent demands of these municipalities as a result of similar growth pressures.

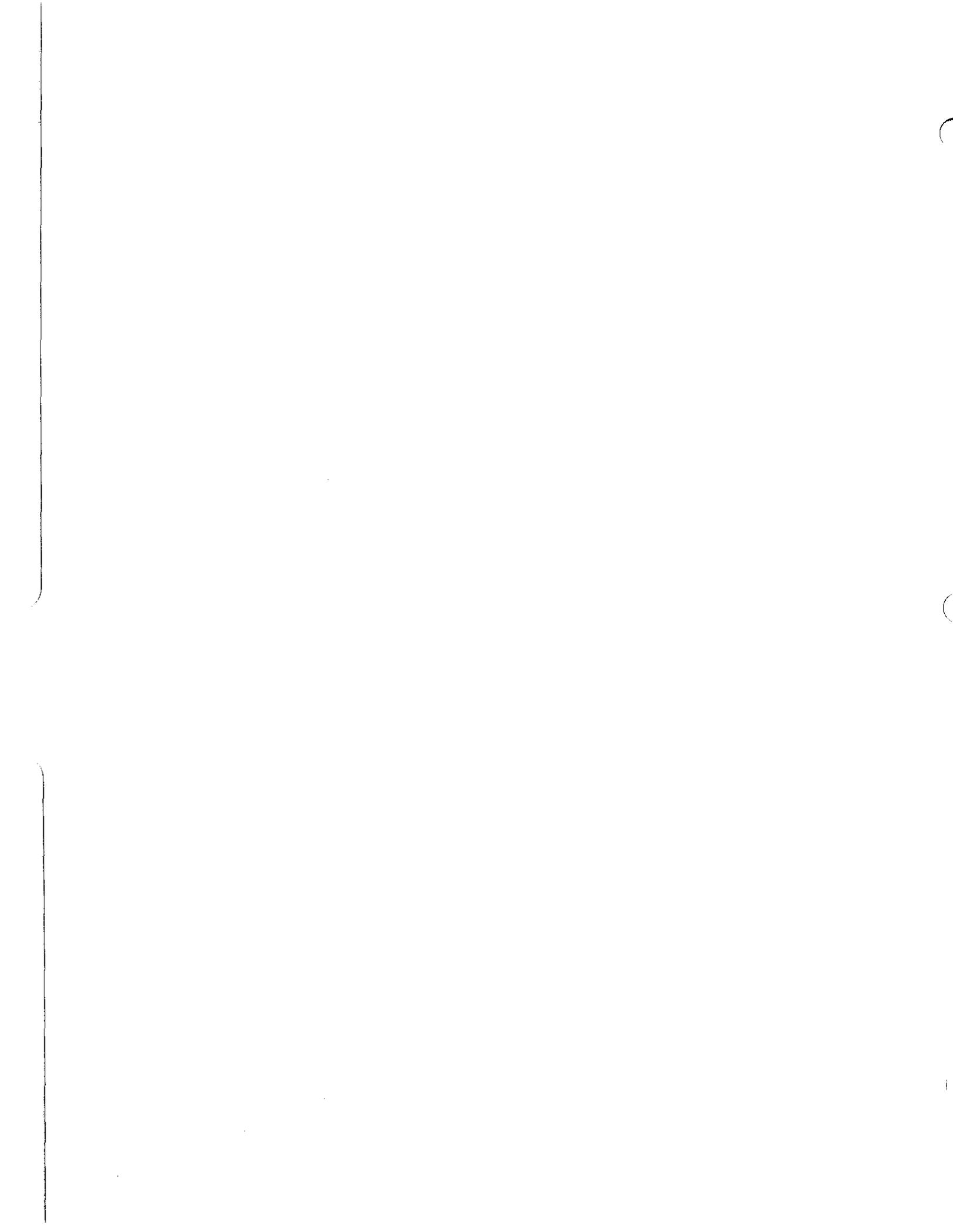
**PLATE 2
MOUNT JOY TOWNSHIP 537 PLAN POPULATION TRENDS**



10/10/98

POPULATION TRENDS LCPC
 POPULATION TRENDS 537 PLAN

CHAPTER 5



CHAPTER 5 ALTERNATIVE EVALUATION

5.1 Identification of Alternatives

Two alternative evaluations are considered for Mount Joy Township. The first evaluation includes assessment of the feasibility of providing community or centralized sewer to the Milton Grove area and surrounding strip development. The second evaluation considers methods for conveyance and treatment of projected wastewater flow in the Elizabethtown growth area.

In addition to structural alternatives, non-structural alternatives will be identified for evaluation.

5.2 Milton Grove Area Alternatives

The following three alternatives were evaluated for serving the Milton Grove area.

- Alternative 1: Collection/conveyance and treatment at a single wastewater treatment facility.
- Alternative 1A: Collection/conveyance to the Elizabethtown WWTP.
- Alternative 2: Collection/conveyance and treatment at community on-lot facilities.

Due to current agricultural zoning, the systems were assumed to serve only existing EDU's. Area 1 consists of 20 EDU's in the village of Milton Grove. Area 2 consists of 22 EDU's along Ridge Road. Area 3 consists of 39 EDU's in the Snyder Drive and Hilltop Circle development. Area 4 consists of 72 EDU's of strip development at the intersection of Elizabethtown Road and Trail Road. A total of 153 EDU's were included in the evaluation.

Based on site evaluations and preliminary analysis, a combination of gravity sewer, and pressure sewer was utilized for each alternative to convey wastewater flow.

Alternative 1 considers a small package treatment plant with a capacity of 45,000 gpd located off of Trail Road with a discharge to a tributary of Little Chickies Creek. Plate 3 illustrates Alternative 1.

Alternative 1A conveys flows to the same site as Alternative 1. A pump station is utilized to convey flows by a pressure main along Ridge Road to an existing manhole at the intersection of Sheaffer Road. Flow is then conveyed through the Borough system to the Elizabethtown WWTP. Plate 4 illustrates Alternative 1A.

Alternative 2 conveys wastewater flow by a pressure sewer to a small on-lot community system. Plate 5 illustrates Alternative 2.

Each alternative is illustrated on the following pages. Table 14 summarizes estimated costs for these alternatives

PLATE 3

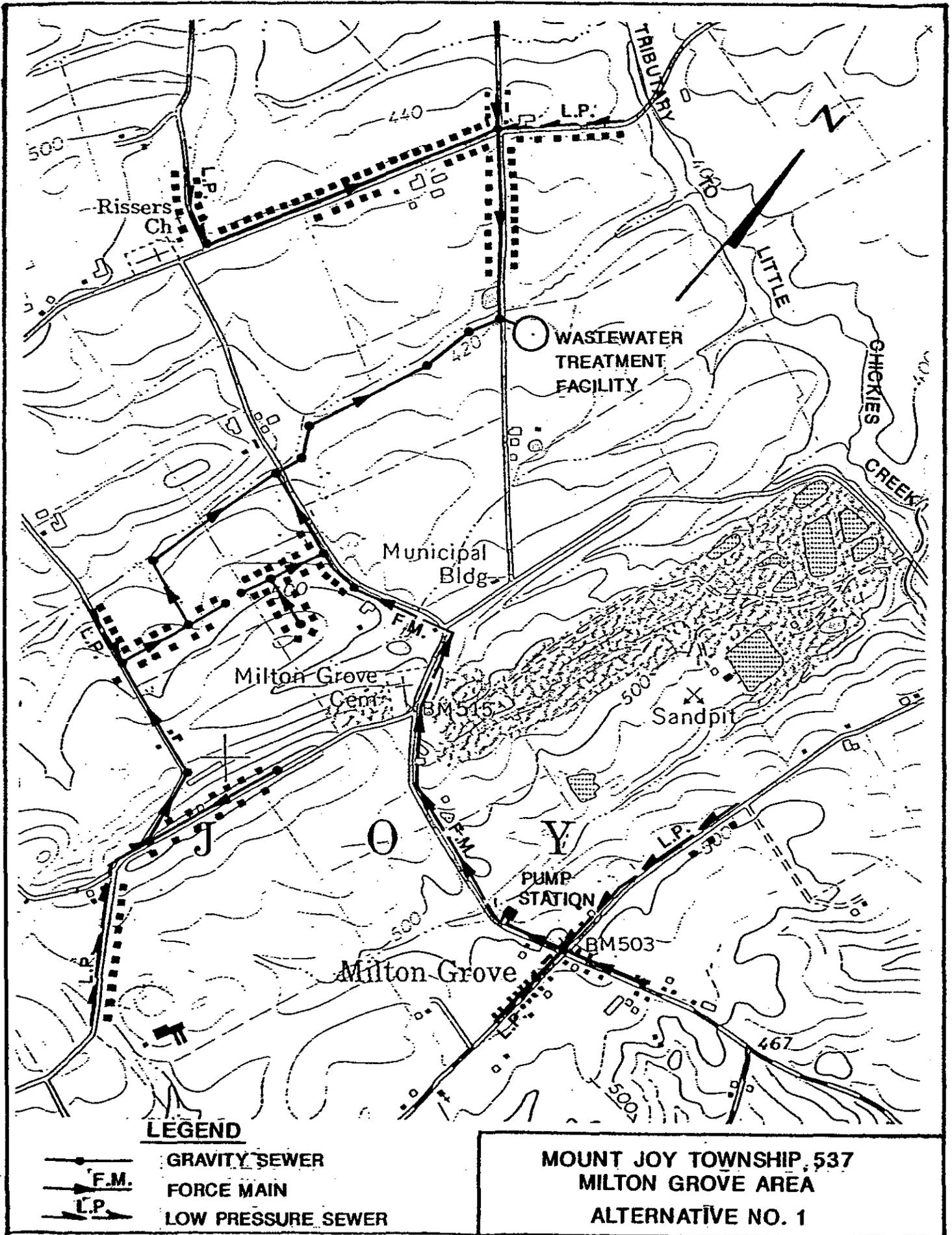
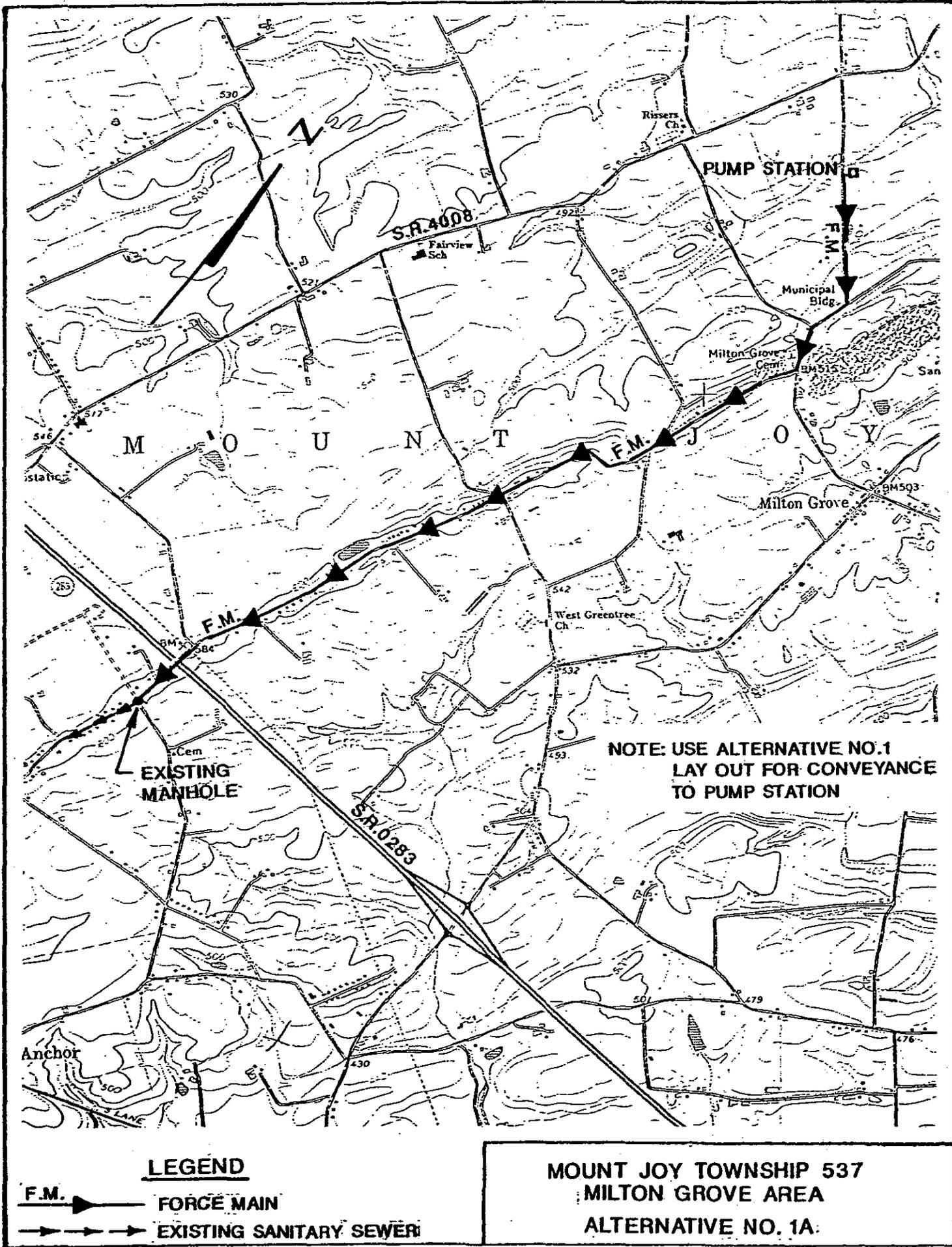


PLATE 4



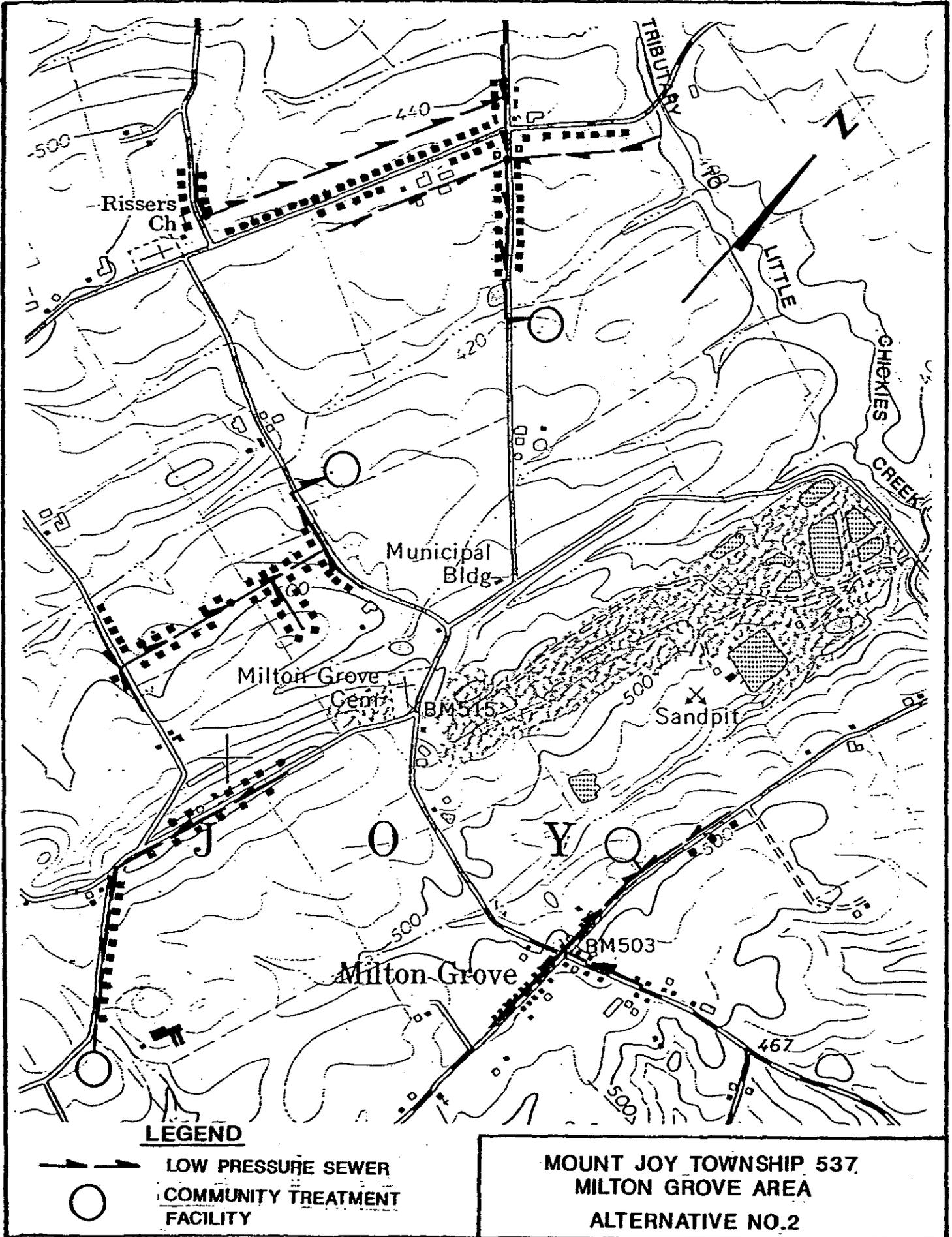
NOTE: USE ALTERNATIVE NO.1
LAY OUT FOR CONVEYANCE
TO PUMP STATION

LEGEND

- F.M.  FORCE MAIN
-  EXISTING SANITARY SEWER

**MOUNT JOY TOWNSHIP 537
MILTON GROVE AREA
ALTERNATIVE NO. 1A**

PLATE 5



LEGEND

-  LOW PRESSURE SEWER
-  COMMUNITY TREATMENT FACILITY

MOUNT JOY TOWNSHIP 537
MILTON GROVE AREA
ALTERNATIVE NO. 2

TABLE 14

MILTON GROVE AREA ALTERNATIVES

Construction Cost	Alternative 1	Alternative 1A	Alternative 2
8" PVC	\$ 822,000	\$ 742,800	-----
6" Service	72,000	70,800	-----
Manholes	87,600	78,000	-----
8" Road Boring	75,600	75,600	-----
6" Road Boring	228,000	201,600	-----
3" Low Pressure	158,400	181,200	493,200
1 1/2" Service Twp	8,400	9,600	30,000
1 1/2" Valve Assembly	4,800	4,800	18,000
Simplex Grinder	21,600	33,600	62,400
Duplex Grinder	138,000	152,400	501,600
1 1/2" Boring	26,400	37,200	54,000
3" Boring	21,600	32,400	43,200
Air Release Chambers	-----	20,400	15,600
Pump Station	121,200	160,800	-----
4" Force Main	114,000	-----	-----
6" Force Main	-----	628,800	-----
Wastewater Treatment	470,400	-----	793,200
Total Construction Cost ⁽¹⁾	2,370,000	2,430,000	2,011,200
Connection Fees	-----	332,000	-----
Land Acquisition	18,000	5,000	175,000
Construction Contingency, 10%	237,000	243,000	201,000
Non Construction Cost, 25%	593,000	607,000	503,000
Total Project Cost	3,218,000	3,617,000	2,890,200
Estimated Annual O & M	50,000	45,000	30,000
Present Worth ⁽²⁾	3,223,000	3,621,500	2,893,000

⁽¹⁾ Total Construction Cost updated to 1999 costs.

⁽²⁾ Present worth is based on 7.75% at 20 years for annual costs.

Based on a present worth analysis, Alternative 2 is the most cost-effective alternative for the Milton Grove area. The total construction cost is based on four individual community systems for each area. The systems would be conventional with alternating pressure dosing of absorption beds. The system would include staging of septic tanks and have sufficient land for a replacement system. No nitrate reduction is assumed since the system is sized as a replacement for existing systems.

Note that no detailed field analysis was conducted to determine design conditions. Sites were preliminarily located within proximity to the development and in Lansdale or Unger soil groups with moderate imitations for on-lot systems.

Table 15 presents an evaluation of the financial feasibility for this system.

Based on the feasibility analysis, centralized or community sewer facilities are not economically feasible for the Milton Grove area.

TABLE 15
MILTON GROVE SERVICE AREA
FINANCIAL FEASIBILITY

Estimated Construction Cost	\$2,011,200	
Land Acquisition	175,000	
Construction Contingency, 10%	201,000	
Non Construction Costs, 25%	503,000	

Estimated Total Project Cost	2,890,200	
Capital Contribution ⁽¹⁾	459,000	

Amount to be Financed	2,431,200	
Annual Debt Service ⁽²⁾	205,000	(148,700) ⁽³⁾
Annual O&M	30,000	30,000
	-----	-----
Total Annual Cost	\$ 235,000	\$178,700
Estimated Annual Cost EDU	\$ 1,536	\$ 1,168

⁽¹⁾ Based on \$3,000/EDU at 153 EDU's

⁽²⁾ Based on 6.5% and 30 year w/10% cover

⁽³⁾ Assuming Penn Vest Financing at 2% for 20 years

It is recommended that the Township consider non-structural alternatives for management of the existing systems in the Milton Grove area. These alternatives are discussed in more detail in Section 5.4. However these alternatives could include:

- Develop a Township-sponsored Homeowner Education Program to promote care and maintenance of OLDS.
- Create a Septage Management District to fund maintenance and replacement programs.
- Restrict the use of garbage grinders for onsite systems.
- Require mandatory septic tank pumping.
- Use Municipal Authority to acquire land for replacement systems if necessary on a case-by-case basis.

5.3 Evaluation of Elizabethtown Growth Area

The alternatives evaluation of the area of Mount Joy Township presently served by the Elizabethtown wastewater treatment facility involved the development of conveyance and treatment alternatives to provide capacity in the different drainage basins where future development is proposed or projected over the next 20 years. The drainage areas have been delineated on Map 2. Table 12 presents the total flows from each drainage basin that will be used for the alternative evaluation. Note that Drainage Area J has been subdivided to delineate the portion that flows by gravity into West Donegal Township (Jg) from the area that is serviced by the Schwanger Road pump station and must be pumped (Jp). This clarification was helpful in the evaluation.

As noted previously, MJTA must presently rely on conveyance facilities owned by Elizabethtown Borough and WDTA to convey wastewater flows from its system to the Elizabethtown WWTP in West Donegal Township. There are seven defined connection points from Mount Joy Township into the Elizabethtown Borough system. The flows from these points converge where the 27-inch Elizabethtown interceptor travels from the Borough to the plant. Table 16 presents the details of the various connection points, their allocated capacity to Mount Joy Township, and projected flows.

Connections to the West Donegal Township system occur primarily at the metering chamber located near the intersection of Cloverleaf Road and Harrisburg Avenue designated as connection point 8 by MJTA. In addition there are four other connection points (C9, C10, C11 and C12) where by MJTA has an agreement for capacity in WDTA sewers to serve homes in Mount Joy Township along Harrisburg Avenue.

In addition to sewer capacity, MJTA has reserved capacity in the Nolt Road, Colebrook Road and Cameron Street pump stations in the WDTA system serving the village of Rheems and the Miller Road pump station which conveys flow at the end of the WDTA system to the Elizabethtown treatment facility. Table 17 summarizes MJTA's reserved capacity and projected flows from the drainage areas tributary to the WDTA system.

TABLE 16

**COMPARISON OF PROJECTED FLOWS WITH
RESERVED CAPACITY IN ELIZABETHTOWN
CONVEYANCE SYSTEM**

Connection Point	Sewer Main	Reserved Capacity¹	Basin	Projected Flow²
C-5	1	24,500	K	24,500
C-4	2 (10")	275,000	L	1,726,500
C-4	2 (12")	275,000	L	1,726,500
C-1	3	136,320 ³	B, C, D	0
C-2	4	26,680 ³	B ^H	23,750
C-3	5 (15")	750,000	A, E, F, G, M	750,000
C-1, 2, 3	5 (18")	913,000	A to G, M	773,750
C-4, 5, 6, 7	6 (15")	424,800	K, L, H	1,775,750
C-1 to C-7	6 (27")	1,338,000	A to H, K, L, M	2,549,500
			A to H, K, L, M	1,019,800 ADF

¹ As per January 15, 1977 agreement.

² Based on peak flow factor of 2.5.

³ Transfer of EDU capacity from Highlawn Avenue to Mill Road approved in 1994.

Rev. 10/13/98

TABLE 17

**COMPARISON OF PROJECTED FLOWS
WITH RESERVED CAPACITY IN WDTMA CONVEYANCE SYSTEM**

Sewer Main	Reserved Capacity¹	Projected Flow²
To Nolt Road P.S.	44,700	131,125
Nolt Road P.S.	30,600	131,125
Nolt Road F.M.	62,300	131,125
To Colebrook Road P.S.	547,700	140,875
Colebrook Road P.S.	252,300	385,375
Colebrook Road F.M.	313,600	385,375
To Cameron Street P.S.	304,800	390,125
Cameron Street P.S.	262,200	390,125
Cameron Street F.M.	445,800	390,125
Harrisburg Pike	408,700	498,500
To Miller Road P.S.	331,200	693,250
Miller Road P.S.	272,000	693,250
Miller Road	489,200	693,250
		(277,300 ADF)

¹ Capacity based on actual constructed capacity.

² Based on peak flow factor of 2.5.

Rev. 10/13/98

As can be noted from Tables 16 and 17, projected flows from MJTA will exceed reserved capacity on the Elizabethtown and WDTA conveyance system. Studies by Elizabethtown Borough to evaluate remaining sewer capacity have indicated that there is no remaining capacity available to MJTA for additional flow above the current reserved capacity. Elizabethtown is currently performing ongoing infiltration/inflow studies to reduce wet weather surcharging in its collection system. As a result, an alternative for additional capacity at the Elizabethtown plant will require the construction of a new interceptor(s) to convey flow from Mount Joy Township through the Borough to the wastewater treatment facility. Due to the distance and difficulty of construction through the developed areas of the Borough, it would be more effective to construct a single parallel interceptor along Conoy Creek and divert flow as required from the MJTA pump stations in the Conewago Basin (referred to as the Northside system) and Donegal Basin (referred to as the Southside system) to the interceptors.

In the WDTA conveyance system there is currently the possibility of MJTA purchasing additional capacity from WDTA and/or upsizing certain limiting sections to increase capacity.

The most critical section is the 12-inch interceptor from Harrisburg Pike to the Miller Road pump station and to the Elizabethtown plant.

By diversion of the Schwanger Road pump station force main (Drainage Area Jp and pumped flow from Area P) from its current location at the West Donegal Township metering chamber to a new connection point (C-13) at the WDTA interceptor or into the Elizabethtown system, MJTA can avoid extensive improvements to the three pump stations and collection system in the village of Rheems. In addition, this diversion would include a reduction of 61,700 gpd of existing flow which can be utilized by future growth in drainage areas that flow by gravity into the village (areas Jg and I).

West Donegal Township is currently evaluating the future growth along the WDTA interceptor to the Miller Road pump station. Because of the availability of public sewer, this area is a likely candidate for future development. As a result, WDTA is unable to commit to additional existing conveyance capacity to meet its future needs, because it may need the remaining capacity for growth in West Donegal Township.

WDTA has been able to provide some additional capacity to MJTA for two developments (Bradfield and Espenshade) through the village of Rheems. This is a result of existing availability of capacity and the limited availability of land in the Rheems area for future growth in West Donegal Township. A copy of this agreement is included in Appendix 2.

If it is assumed that there is no new additional capacity in the West Donegal interceptor, then MJTA would be required to construct a parallel interceptor along the WDTA right-of-way. Given that MJTA already would have to construct an interceptor to the plant through Elizabethtown, it would be more effective to construct additional capacity in an MJTA interceptor along Conoy Creek and reach the plant by gravity rather than construct two interceptors, one of which would require expansion of the Miller Road pump station.

Elizabethtown Alternatives

The basis for developing these alternatives is for all wastewater flow from Mount Joy Township in the Elizabethtown area to be treated at the Elizabethtown treatment facility. Total projected flow to the Elizabethtown plant would be 1,297,100 gpd. The Elizabethtown plant would be need to be expanded and upgraded to a capacity of 4.5 mgd to treat projected flows from MJTA, WDTA, the Masonic Homes and Elizabethtown Borough.

Three Elizabethtown alternatives have been developed as a means of conveying wastewater flows to the WWTP. They are described as follows:

1. Elizabethtown Alternative 1

Alternative 1 involves the diversion of Northside flows in the Conewago Basin by way of modifications to the Hershey Road pump station to convey flows to a new MJTA interceptor along Conoy Creek. The diversion of existing flows into the new interceptor will make capacity available in the Elizabethtown system for projected growth in the Conoy Basin.

The Conoy Creek interceptor would start at the Kiwanis Boulevard metering chamber and extend along the Conoy Creek tributary through the Borough park to a point where the current Elizabethtown interceptor (at MH 45) begins. From there, the interceptor would follow Conoy Creek to the plant site. One possible route would be to follow the original plant interceptor sewer which was abandoned as part of the last plant expansion.

Improvements to the Southside system in the Donegal Basin would require diversion of flow from the Schwanger Road pump station directly into the West Donegal Township interceptor. With this alternative, we have assumed that MJTA can acquire remaining capacity in the WDTA system and upsize sections to obtain the capacity necessary to continue to utilize the WDTA system. Appendix 4 presents Table D as an evaluation of the WDTA system and capital contribution by MJTA for the reallocation of collection system capacity (\$7,738) and interceptor capacity reallocation (\$107,229). Also included in Appendix 4 is a summary of the WDTA pump stations that would be affected by an increase in the MJTA allocation.

Table 18 presents a summary of the Elizabethtown alternative connection points and capacity allocations. Map 14 illustrates the location of the connection points and improvements to the MJTA system.

2. Elizabethtown Alternate 2

This alternative is similar to the first alternative with the exception that an assumption is made that capacity is not available in the WDTA interceptor. Conveyance to Elizabethtown is provided for areas Jp and P by diverting the Schwanger Road pump station force main along Campus Road to tie into the diversion of the Kiwanis Boulevard metering chamber to the new MJTA Conoy Creek interceptor. This would require the interceptor to be increased in size from 18 inches to 24 inches.

3. Elizabethtown Alternative 3

This alternative again assumes no capacity is available in the WDTA interceptor. However, an alternate route for the Schwanger Road forcemain is utilized to connect into the new Conoy Creek interceptor. The connection is located downstream from the Borough near Manhole 45 of the Elizabethtown interceptor, just west of the end of College Avenue.

Elizabethtown Treatment Capacity

The three Elizabethtown alternatives have explored different conveyance methods for getting wastewater flow to the Elizabethtown plant for treatment.

As presented, the cost to make these improvements is anticipated to be significant. In addition, it is necessary to make significant improvements to the treatment facilities to provide capacity for MJTA.

In order to determine the cost of these improvements to the treatment facilities, the three contributing municipalities (Mount Joy Township, West Donegal Township and Elizabethtown Borough) funded a regional study in November 1995 to evaluate the existing facilities and make

TABLE 18

**ELIZABETHTOWN ALTERNATIVE 1
PROPOSED CONNECTION POINT
CAPACITY ALLOCATIONS**

Connection Point	Location	Allocation	
		gpd ADF	gpd PDF
C1	E - Mill Road	0	0
C2	E - Highlawn Avenue	9,500	23,750
C3	E - Radio Road Metering Chamber	0	0
C4	E - Kiwanis Boulevard Metering Chamber	0	0
C5	E - Ridge Avenue	9,700	24,250
C6	E - Mount Joy Street	0	0
C7	E - Oak Manor Pump Station	0	0
C8	WD - West Donegal Metering Chamber	97,800	244,500
C9	WD - E. Harrisburg Ave. to Brett Blvd.	52,450	131,125
C10	WD - Brett Blvd. to Colebrook Road	3,900	9,750
C11	WD - Colebrook Road to Lime Street	1,900	4,750
C12	WD - Anchor Road to Route 230	43,350	108,375
C13 new	WD - West Donegal Interceptor Metering Chamber	400,500	1,001,250
C14 new	Elizabethtown Interceptor	678,000	1,695,000
	Total Allocated Flow	1,297,100	3,242,750

REV. 10/09/98 w/Diversion of Area P to Schwanger Road Pump Station.

recommendations on expansion and upgrading to provide future capacity. A copy of this report is provided as an attachment to the 537 Plan.

The report, as prepared by the Borough's consultant, Camp Dresser & McKee, Inc. (CDM), initially determined that the treatment facilities at current design conditions would be utilized to their maximum capacity. There is little or no additional wastewater treatment capacity in the facility (i.e. interunit piping, settling volume, pumping capacity, etc.) which could be utilized cost effectively in an expansion. This was attributed to earlier value engineering during the last plant improvements and the need to manage peak flows through the plant.

As a result, it is necessary to either make modifications to virtually all of the existing plant wastewater processes or construct an entirely new plant to obtain the required capacity.

The one exception to the need for expansion of the Elizabethtown plant is the solids dewatering and storage facilities. These facilities recently completed in 1995, were provided with sufficient capacity for future expansion.

In addition to the treatment facilities, the CDM study also determined that the existing 5-mile outfall pipe to the Susquehanna River would need to be upsized or converted to a pumped forcemain. The current outfall has a capacity of 6.0 mgd before flow begins to back up in the chlorine contact tanks. Hydraulically the outfall was found to be the weakest link in the plant and the greatest concern for an upgrade/expansion.

In light of the apparent significant cost of providing additional treatment capacity at the Elizabethtown plant, other alternatives were also developed to explore new treatment facility locations that would not require as large a capital investment in conveyance facilities by locating the treatment site closer to the source of the flow.

Conewago Alternatives

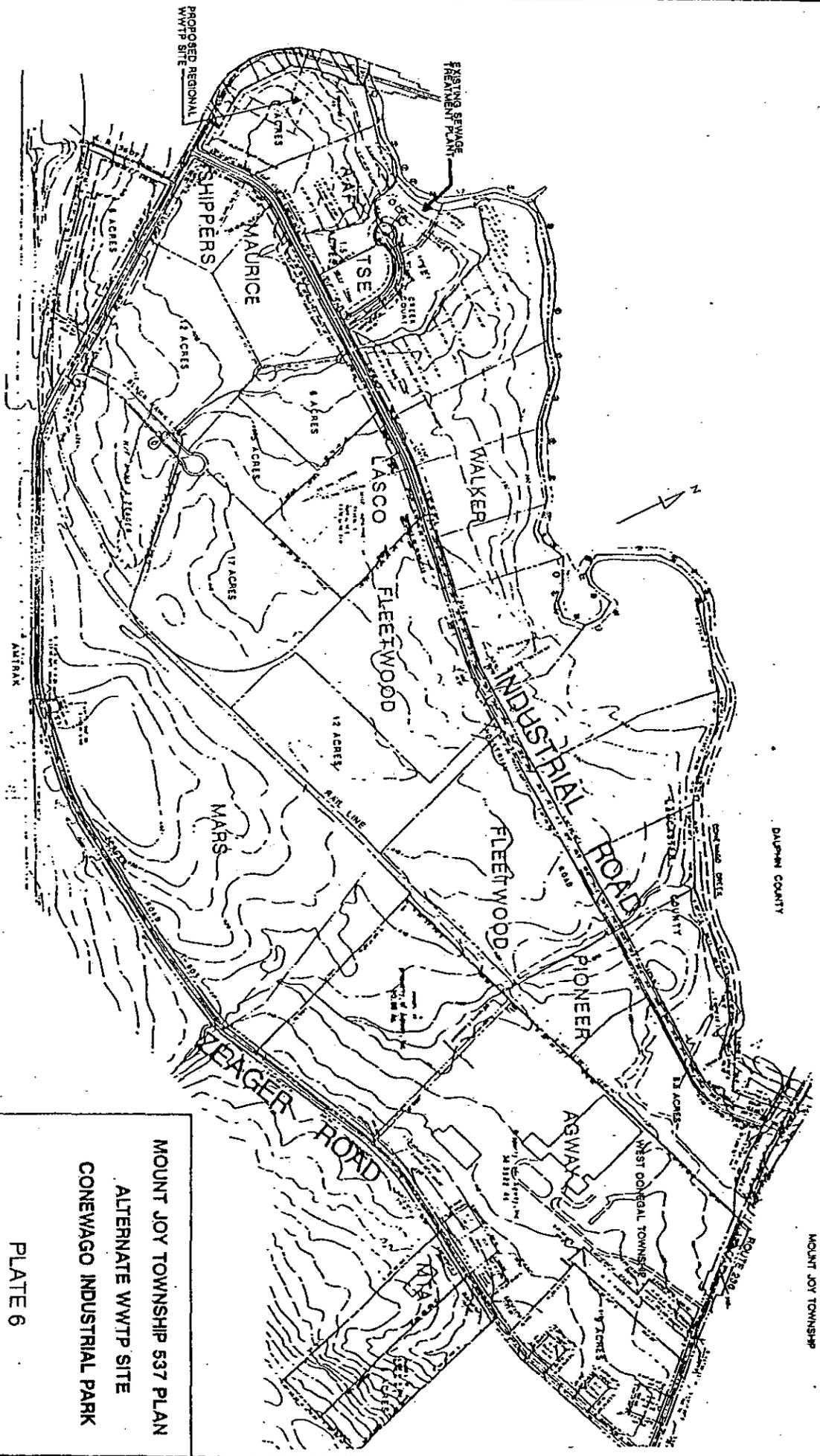
Drainage areas A, B, C, D, E, F, and G within the Conewago Basin as shown on Map 2 represent 514,400 gpd of projected capacity or 30 percent of the total flow projected to be needed by MJTA through the year 2020.

Conewago Creek provides a potential effluent discharge location for serving Mount Joy Township as well as potentially other neighboring municipalities including Conewago, West Donegal and Londonderry Townships for area wastewater management. There are presently only two other area discharges to the creek, including the previously mentioned Conewago Industrial Park in West Donegal Township and the Conewago Mobile Home Park and Campground upstream in Conewago Township. The stream is designated under Chapter 93.90 as a Trout Stocking Fishery.

The preferred site location for a possible treatment facility would be downstream from the Aberdeen Road ridge where the Borough draws water for its public water supply (see Map 8). Site locations could include a site adjacent to Route 230 in Mount Joy Township to permit gravity service upstream along Conewago Creek

An alternative site would be located in the Conewago Industrial Park site adjacent to Zeager Road in West Donegal Township. This site, which is located in an industrial use area, would also permit transfer of flow from and abandonment of the Industrial Park treatment facility and would provide service to several existing commercial facilities including Agway and a mobile home park in West Donegal Township. Furthermore, the site is downstream from Lynch Run, a tributary of Conewago Creek that flows through Londonderry Township. Londonderry's Township Act 537 Plan eventually proposes serving this area with public sewer to accommodate growth and service to several existing mobile home parks.

Plate 6 illustrates the layout of the Conewago Industrial Park and potential site location of a regional treatment facility. Table 19 presents a preliminary facility wastewater capacity sizing for a 25-year planning period using information from the Londonderry Township 537 Plan.



MOUNT JOY TOWNSHIP 537 PLAN
 ALTERNATE WWTP SITE
 CONEWAGO INDUSTRIAL PARK

PLATE 6

SCALE: 1"=500' APPROX.

001288-02

RETTEW ASSOCIATES

TABLE 19**CONEWAGO WASTEWATER TREATMENT FACILITY ALTERNATIVE
PRELIMINARY WASTEWATER CAPACITY SIZING**

	1-5 Year	10- Year	25- Year
Mount Joy Township	203,900	306,800	500,900
West Donegal Township	20,000	20,000	20,000
Conewago Industrial Park	75,000	115,000	150,000
Londonderry Township	160,000	210,000	300,000
Conewago Township	--	--	--
Elizabethtown Borough	--	--	--
Total Flow (gpd)	458,900	651,800	970,900
Design Capacity	500,000	750,000	1,000,000

Construction in three phases would permit a total of 1.0 mgd of capacity of which MJTA would utilize 500,900 gpd. The remaining 13,500 gpd flow on the basin from MJTA would continue to flow into the Borough from areas directly adjacent to the Borough system through currently allocated conveyance capacity (generally, the Highlawn Avenue area).

For planning purposes, we have selected the plant location in the Conewago Industrial Park site since it would represent the preferred location and the most conservative in terms of cost for Mount Joy Township due to its distance further downstream. While potentially a higher cost, there is also a greater potential for cost sharing and economy of scale advantages at this location. As a result, depending upon regional participation, there would actually be a lower net cost to MJTA. Plate 7 illustrates a preliminary site layout for the Conewago regional wastewater treatment facility.

It is understood that this location would require concurrence with 537 Planning by West Donegal Township in order to facilitate its implementation. In the event it becomes difficult to obtain approvals for a treatment facility in this location, an alternative site in Mount Joy Township would be proposed adjacent to Route 230 and Conewago Creek.

Plate 8 illustrates the location of the Conewago interceptors that would convey flows in the basin to a Conewago treatment facility. The location of the interceptor generally follows the Conewago Recreation Trail which utilizes a converted railroad right-of-way. Table 20 presents a summary of the proposed connection point capacity allocations for the Conewago Alternative. Map 15 illustrates the location of the connection points and improvements to the MJTA system.

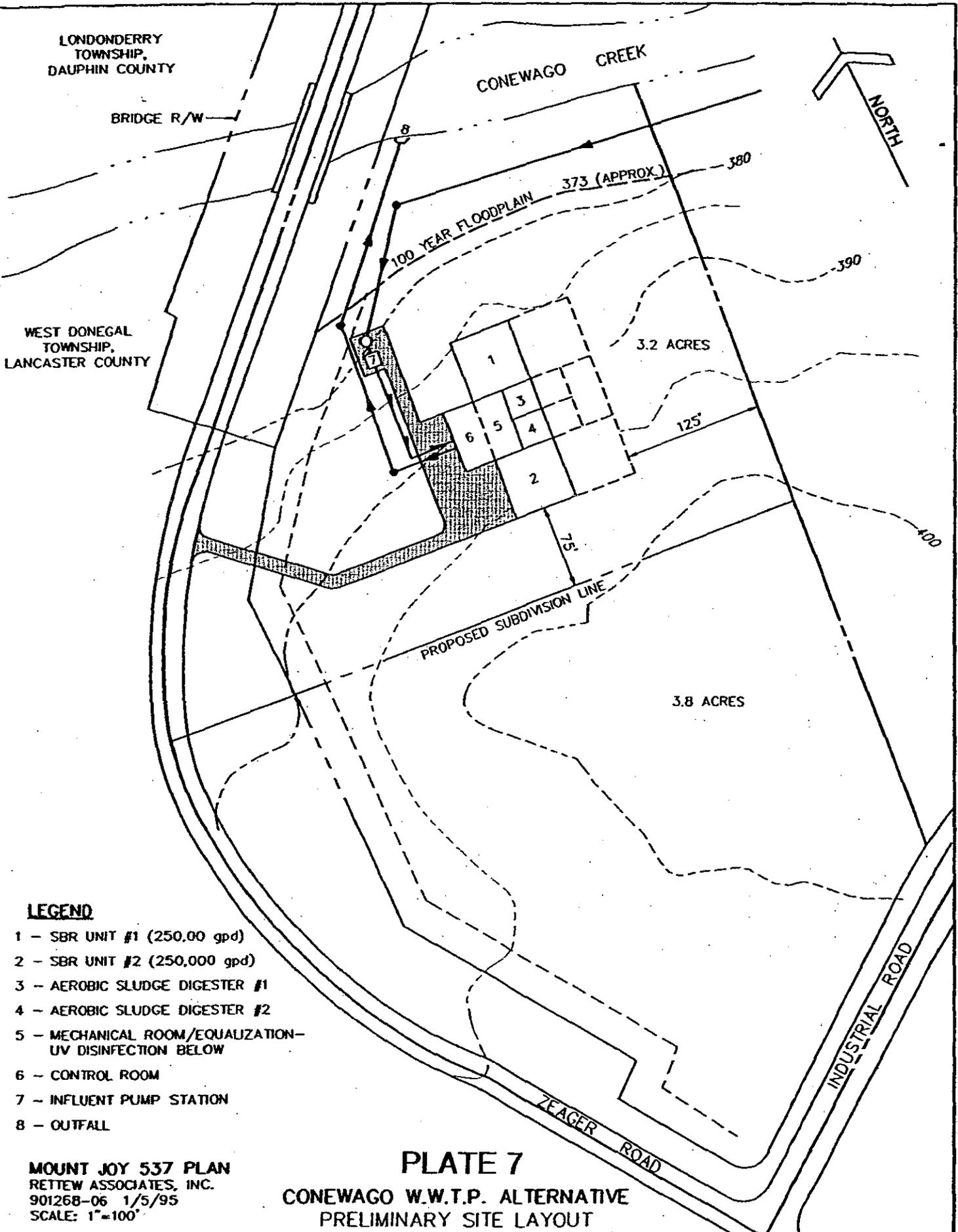
LONDONDERRY
TOWNSHIP,
DAUPHIN COUNTY

BRIDGE R/W

CONEWAGO CREEK

NORTH

WEST DONEGAL
TOWNSHIP,
LANCASTER COUNTY



LEGEND

- 1 - SBR UNIT #1 (250,000 gpd)
- 2 - SBR UNIT #2 (250,000 gpd)
- 3 - AEROBIC SLUDGE DIGESTER #1
- 4 - AEROBIC SLUDGE DIGESTER #2
- 5 - MECHANICAL ROOM/EQUALIZATION-
UV DISINFECTION BELOW
- 6 - CONTROL ROOM
- 7 - INFLUENT PUMP STATION
- 8 - OUTFALL

MOUNT JOY 537 PLAN
RETTEW ASSOCIATES, INC.
901268-06 1/5/95
SCALE: 1"=100'

PLATE 7
CONEWAGO W.W.T.P. ALTERNATIVE
PRELIMINARY SITE LAYOUT

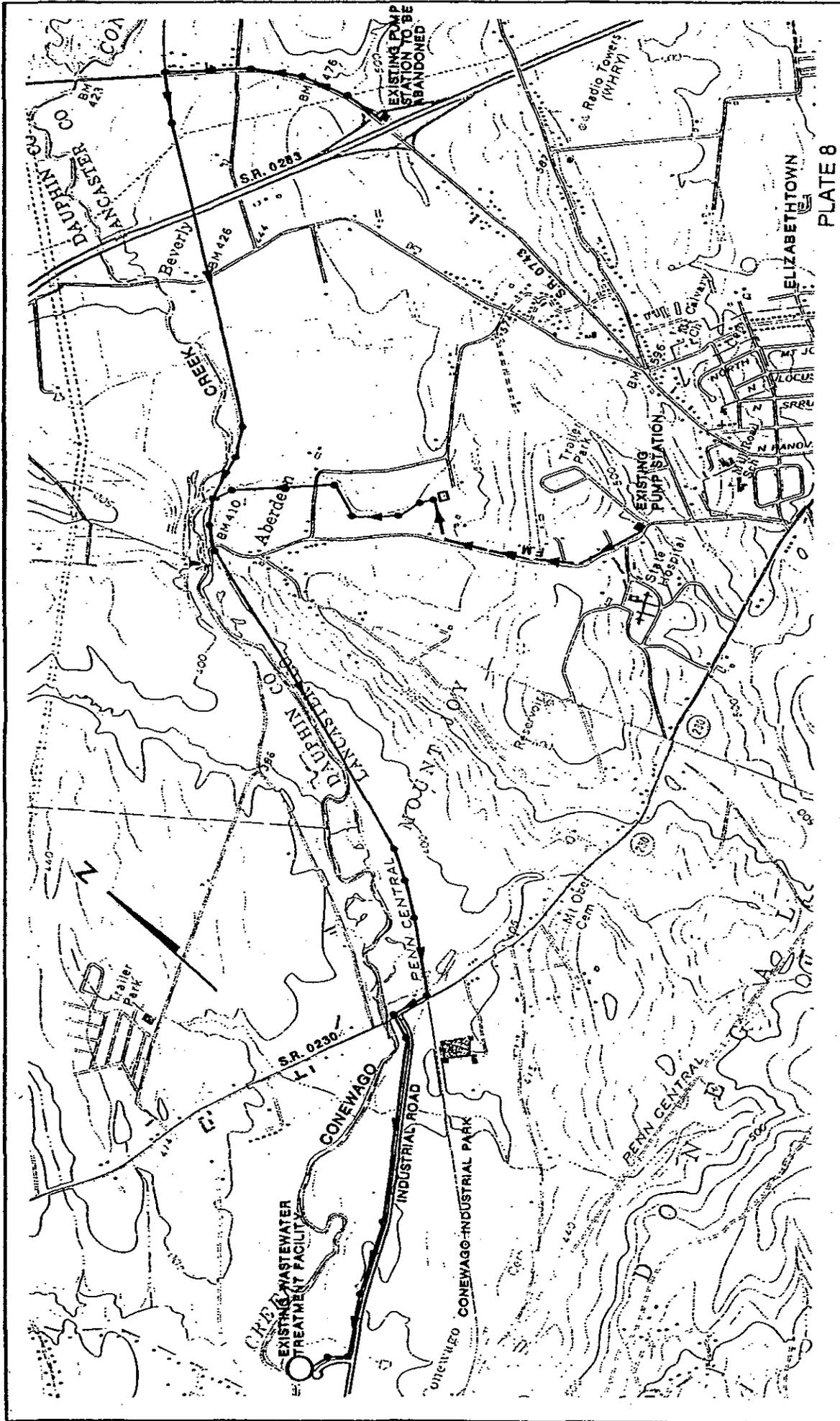


PLATE 8

MOUNT JOY TOWNSHIP 637
 CONEWAGO CREEK INTERCEPTOR

LEGEND

GRAVITY SEWER

 F.M. FORCE MAIN

TABLE 20

**CONEWAGO ALTERNATIVE
PROPOSED CONNECTION POINT
CAPACITY ALLOCATIONS**

Connection Point	Location	Allocation	
		gpd ADF	gpd PDF
C1	E - Mill Road	0	0
C2	E - Highlawn Avenue	9,500	23,750
C3	E - Radio Road Metering Chamber	90,700	226,750
C4	E - Kiwanis Boulevard Metering Chamber	116,700	291,750
C5	E - Ridge Avenue	9,700	24,250
C6	E - Mount Joy Street	0	0
C7	E - Oak Manor Pump Station	0	0
C8	WD - West Donegal Metering Chamber	97,800	244,500
C9	WD - E. Harrisburg Ave. to Brett Blvd.	52,450	131,125
C10	WD - Brett Blvd. to Colebrook Road	3,900	9,750
C11	WD - Colebrook Road to Lime Street	1,900	4,750
C12	WD - Anchor Road to Route 230	43,350	108,375
C13 new	WD - West Donegal Interceptor Metering Chamber	400,500	1,001,250
	Conewago Interceptor	470,600	1,176,500
	Total Allocated Flow	1,297,100	3,242,750

REV. 10/06/98 w/Diversion of Area P to Schwanger Rd. PS.

In consideration of the significant cost to expand and upgrade the Elizabethtown treatment plant, the cost of building a new interceptor to reach the Elizabethtown treatment plant and the requirement for a new outfall line, a second Conewago alternative was developed. This alternative considers construction of the Conewago plant to a 1.0 mgd capacity as a comparison to handle all of the additional capacity needed by Mount Joy Township. As a result, MJTA would be able continue to maintain its current allocation at Elizabethtown (0.404 mgd).

While there would be a significant reduction in the Authority's contribution toward the Elizabethtown expansion, there would still be a contribution for upgrading costs at the plant as

well as annual costs to process biosolids from the Conewago plant at Elizabethtown using available belt filter press capacity.

In order to convey flows to a Conewago site it would also be necessary to divert flows from the Schwanger Road (areas Jp and P) pump station as well as drainage basins K and L into the Conewago interceptor at the former Hershey Road pump station.

This alternative would also reduce the contribution necessary for MJTA to obtain additional capacity in the WDTA system.

Southside Treatment Facility Alternatives

The concept of locating treatment facilities closer to the Township in an effort to reduce conveyance facility construction costs was taken one step further by developing two treatment alternatives in the Donegal drainage basin on the south side of the Township. These alternatives would be developed in conjunction with a 0.5 mgd Conewago treatment facility. This would allow the Authority to avoid conveying wastewater by pumping twice across two drainage basins from the Schwanger Road pump station to a larger Conewago plant site or over to the Elizabethtown plant.

Both alternatives would allow MJTA to maintain its existing allocation at Elizabethtown. Both alternatives would also involve the same conveyance costs. The difference would be on the method of treatment.

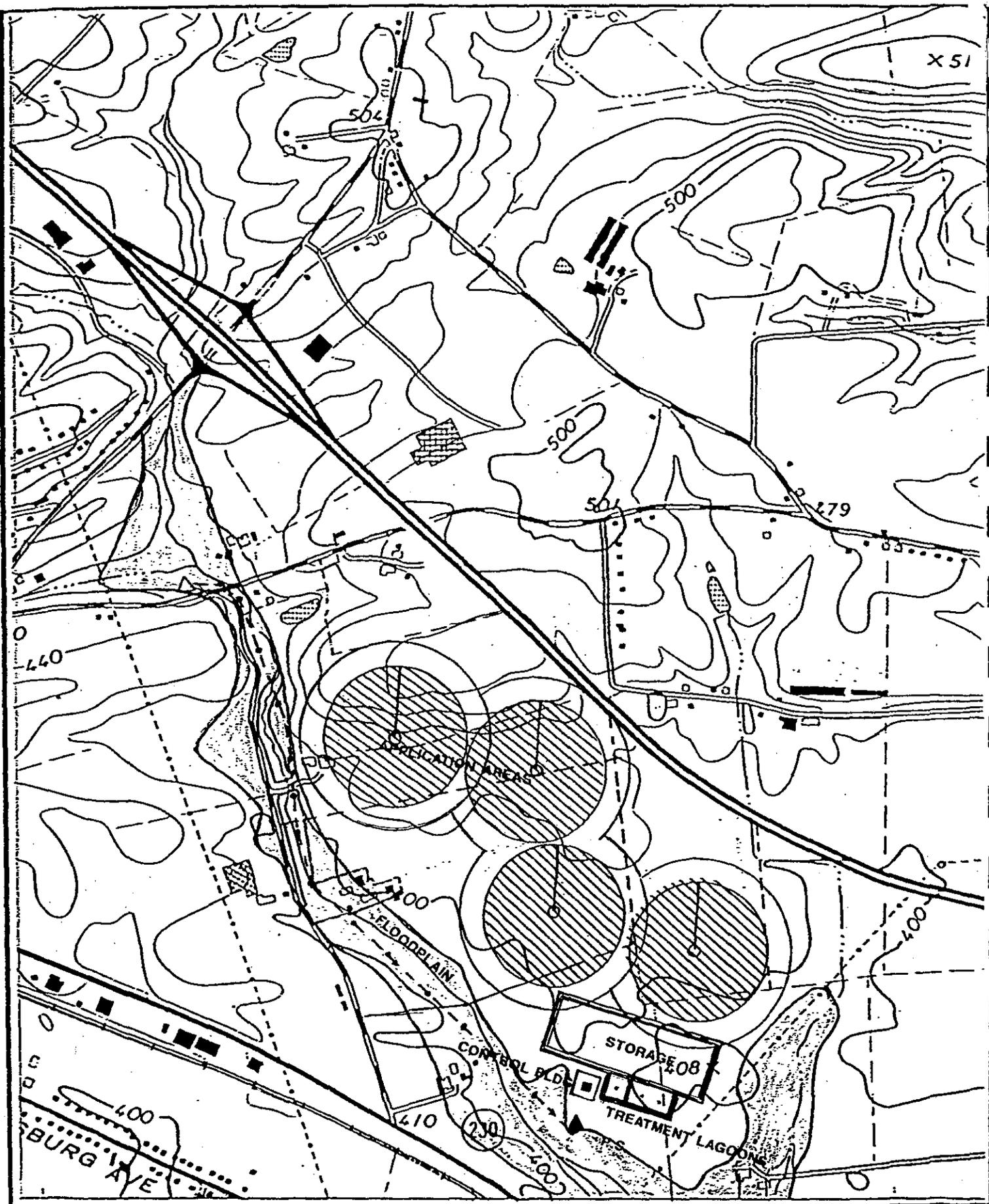
Because the Donegal Springs drainage basin is designated as a high quality stream DEP, a stream discharge would require a greater degree of treatment utilizing best available technology. In many cases, this involves filtration and chemical treatment. A stream discharge must also demonstrate that it is socially and economically justified and other alternatives such as conveyance to other sites and land application are shown to be environmentally and economically unfeasible.

To demonstrate this, a second Southside treatment alternative utilizing spray irrigation was developed.

Both Southside treatment alternatives would provide approximately 0.5 mgd of capacity. Plate 9 illustrates a proposed land application system that was used for developing a construction cost estimate.

The following presents a summary of the seven wastewater management alternatives for development in the Elizabethtown growth area.

Table 21 also provides a summary of the projected flow distribution among treatment facilities for each alternative.



TITLE
SOUTHSIDE LAND APPLICATION
ALTERNATIVE



MOUNT JOY 537
PLAN Retter
 Associates, Inc.

DRAWN BY: _____
 DATE: 5/3/95
 SCALE: 1" = 1000'

TABLE 21

**ELIZABETHTOWN AREA
WASTEWATER MANAGEMENT ALTERNATIVE FLOW DISTRIBUTION
AVERAGE DAILY FLOW (MGD)**

	<u>Existing Capacity</u>	<u>Elizabethtown Alternative 1</u>	<u>Elizabethtown Alternative 2</u>	<u>Elizabethtown Alternative 3</u>	<u>0.5 MGD Conewago Alternative</u>	<u>1.0 MGD Conewago Alternative</u>	<u>Conewago Southside Alternative</u>	<u>Conewago Southside L.A. Alternative</u>
Elizabethtown Interceptor	0.5352	0.0192	1.0198	1.0198	0.2266	0.1099	0.1099	0.1099
MJTA Interceptor		0.6780						
WDTA Interceptor	0.1325	0.5999	0.2773	0.2773	0.5999	0.2873	0.2873	0.2873
Conewago Interceptor					0.4706	0.8265	0.4706	0.4706
Elizabethtown WWTP	0.4040	1.2971	1.2971	1.2971	0.8265	0.3972	0.3972	0.3972
Conewago WWTP					0.4706	0.8265	0.4706	0.4706
Southside WWTP							0.4293	0.4293
TOTAL WWTP	0.4040	1.2971	1.2971	1.2971	1.2971	1.2971	1.2971	1.2971

Summary of Alternatives for Cost Evaluation

1. Elizabethtown Alternative 1 - Convey all flow to the Elizabethtown WWTP by way of a new interceptor through the Borough and a diversion of the Schwanger Road pump station to an upsized WDTA interceptor.
2. Elizabethtown Alternative 2 - Convey all flow to the Elizabethtown WWTP by way of a new interceptor through the Borough and a diversion of the Schwanger Road Pump Station to the new interceptor at Kiwanis Boulevard.
3. Elizabethtown Alternative 3 - Convey all flow to the Elizabethtown WWTP by way of a new interceptor through the Borough and a diversion of the Schwanger Road pump station to the new interceptor at Conoy Creek (in the vicinity of EMH-45).
4. Conewago Alternative (0.5 mgd) - Divert flows in the Conewago basin to a new 0.5 mgd WWTP located near the Conewago Industrial Park. Wastewater flows in the Southside area would be conveyed through an upsized WDTA interceptor as in the Elizabethtown Alternative 1.
5. Conewago Alternative (1.0 mgd) - Divert flows in the Conewago basin, as well as the Schwanger Road, Wissler, Ridge Road, and Kiwanis Boulevard basins, to a new Conewago interceptor and a 1.0 mgd WWTP near the Conewago Industrial Park. This alternative would maintain Mount Joy Township's current allocation of 0.404 mgd at the Elizabethtown WWTP.
6. Conewago - Southside Alternative - Divert flows in the Conewago basin to a 0.5 mgd WWTP near the Conewago Industrial Park. In addition, the Schwanger Road pump station, Wissler, Kiwanis Boulevard, and Ridge Road flows would be diverted to a new Southside 0.5 mgd WWTP. This alternative would maintain Mount Joy Township's current allocation of 0.404 mgd at the Elizabethtown WWTP.
7. Conewago - Southside L.A. Alternative - Similar to Alternative 6, except that a land application treatment facility is considered instead of a stream discharge facility.

Development of Construction Costs

Planning estimates of construction costs for a 4.5 mgd and 4.0 mgd expansion/upgrade of the Elizabethtown treatment facility were developed as part of the regional study performed by CDM in November, 1995. This study also provided information to determine what portion of the treatment facility costs are related to upgrading the facility for the MJTA's current allocation. This would result in a 3.6 mgd capacity treatment facility at Elizabethtown.

Table 22 presents a summary of the construction cost distribution for MJTA for the Elizabethtown facility expansion and upgrade from the CDM study.

TABLE 22

ELIZABETHTOWN WWTP CONSTRUCTION COST DISTRIBUTIONS
(as per 11/95 CDM Report)

Construction Costs - High/Low Cost Average

	4.5 mgd		4.0 mgd	
	WWTP	Outfall	WWTP	Outfall
Expansion	\$3,306,000	\$1,330,000	\$3,010,000	\$1,080,000
Upgrade	\$2,009,000	\$ 970,000	\$1,995,000	\$1,220,000

Construction w/ Construction Contingency and Mark-up 35%

	4.5 mgd		4.0 mgd	
	WWTP	Outfall	WWTP	Outfall
Expansion	\$4,463,000	\$1,796,000	\$4,064,000	\$1,458,000
Upgrade	\$2,712,000	\$1,310,000	\$2,693,000	\$1,647,000

MJTA Distribution Factors

	4.5 mgd		4.0 mgd	
	WWTP	Outfall	WWTP	Outfall
Expansion	0.62525	0.62525	0.43825	0.43825
Upgrade	0.13467	0.16865	0.13467	0.16865

MJTA Cost Share

	4.5 mgd		4.0 mgd	
	WWTP	Outfall	WWTP	Outfall
Expansion	\$2,790,000	\$1,123,000	\$1,781,000	\$ 639,000
Upgrade	\$ 365,000	\$ 221,000	\$ 363,000	\$ 278,000
Total	\$3,155,000	\$1,344,000	\$2,144,000	\$ 917,000
Overall Share	\$4,499,000		\$3,061,000	

The following pages provide a breakdown of the different components of the sewer alternatives. Each component is subtitled and titled to identify the improvement. These components are then assembled to develop an overall construction cost estimate for each alternative.

Table 23 provides a breakdown and composition of estimated construction costs for the four Township treatment components. The difference in relative cost per gallon between the 0.5 and 1.0 mgd Conewago facilities reflects an economy of scale achieved with a larger facility.

The higher cost of the Southside treatment facility reflects the higher degree of treatment required. The land application treatment cost primarily reflects the high cost of land in the area.

Present Worth Analysis

Table 24 presents a summary of the different component capital costs estimated for each of the seven alternatives. Included are conveyance system and treatment facility improvements associated with each of the three systems that MJTA would construct or make a capital contribution. Total capital construction costs have been updated to 1999 costs. To the total estimated construction cost an estimate for planning purposes of 35 percent for engineering, construction observation, legal, permits, and administration costs has been added to develop a total project cost.

Given the significant cost of the proposed alternatives and the similar objective, there is a \$292,000 or 25 percent difference in capital cost between the highest and lowest cost alternatives. The apparent lowest capital cost alternative is Elizabethtown Alternative 2 at a cost estimate of \$11,423,000.00. The 1.0 MGD Conewago Alternative is the lowest cost of the non-Elizabethtown alternatives.

The present worth evaluation must also consider operation, maintenance and administrative cost differences between alternatives. Each alternative has different operating costs due to the number and size of pump stations and treatment facilities needed to implement each alternative. Common to each alternative are administrative and collection system costs associated with MJTA's annual operations budget. These costs have been projected in Table 25.

A summary of the operation and maintenance (O&M) costs and the equivalent present worth is presented in Table 26. Conversion to a present worth cost is based on a 7.75 percent interest rate and 20-year time frame.

The difference in estimated costs between the highest and lowest annual O&M cost is \$210,000 per year or a range of 28 percent. The Elizabethtown alternative's O&M costs are the lowest, reflecting the economy of scale for a large treatment facility as compared to the highest cost for the Conewago - Southside alternative utilizing a high quality water discharge and three treatment facilities. The 1.0 MGD Conewago Alternative is in the upper range of O&M costs for the seven alternatives.

ELIZABETHTOWN WWTP CONVEYANCE ALTERNATIVE

Item	Description	Units	Quantity	Unit Cost	Total
<u>Conoy Creek Interceptor</u>					
1	18" PVC Pipe	LF	8780	\$65.00	\$570,700.00
2	Manholes	EA	30	\$1,265.00	\$37,950.00
3	Road Boring	LF	120	\$240.00	\$28,800.00
4	Stream Crossing	LF	240	\$150.00	\$36,000.00
5	Encasement	LF	330	\$75.00	\$24,750.00
6	Conn. to Exist. MH	EA	1	\$1,500.00	\$1,500.00
7	Seed & Mulch	LF	8450	\$1.50	\$12,675.00
8	Metering Chamber	EA	1	\$18,000.00	\$18,000.00
	Subtotal				\$730,375.00
<u>Conoy Creek Combined Interceptor at MH 45</u>					
1	24" PVC Pipe	LF	8780	\$82.00	\$719,960.00
2	8" DI FM	LF	7600	\$32.00	\$243,200.00
3	Manhole	EA	30	\$1,265.00	\$37,950.00
4	Road Boring	LF	170	\$750.00	\$127,500.00
5	Stream Crossing	LF	240	\$150.00	\$36,000.00
6	Encasement	LF	330	\$75.00	\$24,750.00
7	Conn. to Exist. MH	EA	1	\$1,500.00	\$1,500.00
8	Seed & Mulch	LF	8450	\$1.50	\$12,675.00
9	Road Restoration	LF	7600	\$13.00	\$98,800.00
10	Metering Chamber	EA	1	\$18,000.00	\$18,000.00
11	Air Release Chamber	EA	1	\$2,500.00	\$2,500.00
	Subtotal				\$1,322,835.00
<u>Conoy Creek Combined Interceptor at Kiwanis Boulevard</u>					
1	24" PVC Pipe	LF	14180	\$82.00	\$1,162,760.00
2	Manhole	EA	52	\$1,265.00	\$65,780.00
3	Road Boring	LF	360	\$750.00	\$270,000.00
4	Stream Crossing	LF	270	\$150.00	\$40,500.00
5	Encasement	LF	330	\$75.00	\$24,750.00
6	Conn. to Exist. MH	EA	1	\$1,500.00	\$1,500.00
7	Seed & Mulch	LF	12650	\$1.50	\$18,975.00
8	Road Restoration	LF	1200	\$13.00	\$15,600.00
9	Metering Chamber	EA	1	\$18,000.00	\$18,000.00
	Subtotal				\$1,617,865.00
<u>WDTA System Improvements @ 1.4992 MGD</u>					
1	Exist. Capacity Reallocation	LS	1	\$107,229.00	\$107,229.00
2	15" Interceptor Upsizing	LF	2694	\$40.00	\$107,760.00
3	18" Interceptor Upsizing	LF	1453	\$45.00	\$65,385.00
4	21" Interceptor Upsizing	LF	2027	\$60.00	\$121,620.00
5	Manhole	EA	28	\$1,265.00	\$35,420.00
6	Seed and Mulch	LF	6174	\$1.50	\$9,261.00
7	Miller Rd. PS Expansion	LS	1	\$84,000.00	\$84,000.00
8	Miller Rd. FM Expansion	LS	1	\$245,000.00	\$245,000.00
	Subtotal				\$775,675.00

ELIZABETHTOWN WWTP CONVEYANCE ALTERNATIVE

Item	Description	Units	Quantity	Unit Cost	Total
<u>Kiwanis Boulevard PS to Schwanger Road</u>					
1	Kiwanis Blvd. PS	LS	1	\$120,000.00	\$120,000.00
2	6" DI FM	LF	4400	\$26.00	\$114,400.00
3	8" PVC Pipe	LF	2600	\$32.00	\$83,200.00
4	Conn. to Exist. MH	EA	1	\$1,000.00	\$1,000.00
5	Road Restoration	LF	7000	\$13.00	\$91,000.00
	Subtotal				\$409,600.00
<u>WDTA System Improvements @ 0.6804 MGD</u>					
1	Exist. Capacity Reallocation	LS	1	\$34,429.00	\$34,429.00
2	18" Interceptor Upsizing	LF	2027	\$45.00	\$91,215.00
3	Manhole	EA	10	\$1,265.00	\$12,650.00
4	Seed and Mulch	LF	2027	\$1.50	\$3,040.50
5	Miller Rd. PS Expansion	LS	1	\$53,750.00	\$53,750.00
	Subtotal				\$195,084.50
<u>WDTA Parallel Interceptor</u>					
1	15" Parallel Interceptor	LF	15100	\$40.00	\$604,000.00
2	Manholes	EA	49	\$1,265.00	\$61,985.00
3	Stream Crossing	LF	50	\$125.00	\$6,250.00
4	Railroad Boring	LF	50	\$240.00	\$12,000.00
5	Road Restoration	LF	150	\$13.00	\$1,950.00
6	Seed and Mulch	LF	14950	\$1.50	\$22,425.00
7	Miller Rd. PS Expansion	LS	1	\$84,000.00	\$84,000.00
8	Miller Rd. FM Expansion	LS	1	\$245,000.00	\$245,000.00
	Subtotal				\$1,037,610.00
<u>Schwanger Road Pump Station to MH 45</u>					
1	8" DI FM	LF	16500	\$32.00	\$528,000.00
2	Conn. to Exist PS	EA	1	\$1,500.00	\$1,500.00
3	Road Boring	LF	180	\$240.00	\$43,200.00
4	Stream Crossing	LF	60	\$125.00	\$7,500.00
5	Curb Replacement	LF	60	\$12.00	\$720.00
6	Road Restoration	LF	9200	\$13.00	\$119,600.00
7	Seed and Mulch	LF	7300	\$1.50	\$10,950.00
8	Air Release Chamber	EA	1	\$2,500.00	\$2,500.00
9	Alt. to Exist. PS	LS	1	\$220,000.00	\$220,000.00
	Subtotal				\$933,970.00

ELIZABETHTOWN TREATMENT PLANT ALTERNATIVE

Item	Description	Units	Quantity	Unit Cost	Total
Mill Road Pump Station					
1	6" DI FM	LF	2600	\$26.00	\$67,600.00
2	Conn. to MH 30	EA	1	\$1,000.00	\$1,000.00
3	Road Restor.	LF	50	\$13.00	\$650.00
4	Seed & Mulch	LF	2550	\$1.50	\$3,825.00
5	Alt to P.S.	LS	1	\$50,000.00	\$50,000.00
	Subtotal				\$123,075.00
Route 743 Relief Sewer					
1	8" PVC Pipe	LF	4350	\$32.00	\$139,200.00
2	Manholes	EA	18	\$1,265.00	\$22,770.00
3	Road Boring	LF	300	\$240.00	\$72,000.00
4	Conn. to Exist. MH	EA	2	\$1,000.00	\$2,000.00
5	Conn. to Exist. Sewer	EA	2	\$2,000.00	\$4,000.00
6	Stream Crossing	LF	15	\$125.00	\$1,875.00
7	Road Restoration	LF	350	\$20.00	\$7,000.00
8	Seed & Mulch	LF	4000	\$1.50	\$6,000.00
	Subtotal				\$254,845.00
Hershey Road Pump Station					
1	10" PVC Pipe	LF	900	\$34.00	\$30,600.00
2	12" PVC Pipe	LF	1550	\$37.00	\$57,350.00
3	12" x 6" Wyes	EA	3	\$65.00	\$195.00
4	6" PVC Lateral	LF	30	\$30.00	\$900.00
5	Manholes	EA	10	\$1,265.00	\$12,650.00
6	Conn. to Exist. MH	EA	1	\$1,000.00	\$1,000.00
7	10" DI FM	LF	4600	\$38.00	\$174,800.00
8	Air Release Chamber	EA	1	\$2,500.00	\$2,500.00
9	Road Boring	LF	30	\$240.00	\$7,200.00
10	Road Restoration	LF	4500	\$13.00	\$58,500.00
11	Seed & Mulch	LF	2550	\$1.50	\$3,825.00
12	Alt to PS	EA	1	\$75,000.00	\$75,000.00
	Subtotal				\$424,520.00
Radio Road Pump Station					
1	New Radio Rd. PS	LS	1	\$120,000.00	\$120,000.00
2	10" DI FM	LF	2650	\$38.00	\$100,700.00
3	15" PVC Pipe	LF	1050	\$50.00	\$52,500.00
4	Air Release Chamber	EA	1	\$2,500.00	\$2,500.00
5	Manholes	EA	5	\$1,265.00	\$6,325.00
6	Road Boring	LF	50	\$240.00	\$12,000.00
7	Stream Crossing	LF	15	\$125.00	\$1,875.00
8	Road Restoration	LF	1000	\$13.00	\$13,000.00
9	Seed & Mulch	LF	2700	\$1.50	\$4,050.00
	Subtotal				\$312,950.00
Elizabethtown Interceptor					
1	18" PVC Pipe	LF	5400	\$45.00	\$243,000.00
2	Manholes	LF	22	\$1,265.00	\$27,830.00
3	Road Boring	LF	240	\$240.00	\$57,600.00
4	Stream Crossing	LF	30	\$150.00	\$4,500.00
5	Road Restoration	LF	1200	\$13.00	\$15,600.00
6	Seed and Mulch	LF	4200	\$1.50	\$6,300.00
	Subtotal				\$354,830.00

WEST DONEGAL TOWNSHIP AUTHORITY ALTERNATIVE

Item	Description	Units	Quantity	Unit Cost	Total
<u>Schwanger Road Pump Station to Schwanger Road</u>					
1	8" DI FM	LF	8500	\$32.00	\$272,000.00
2	Conn. to Exist PS	EA	1	\$1,500.00	\$1,500.00
3	Road Boring	LF	60	\$240.00	\$14,400.00
4	Stream Crossing	LF	30	\$125.00	\$3,750.00
5	Conc. Curb Repl.	LF	30	\$12.00	\$360.00
6	Road Restoration	LF	2800	\$13.00	\$36,400.00
7	Seed and Mulch	LF	5700	\$1.50	\$8,550.00
8	Alt. to Exist. PS	LS	1	\$220,000.00	\$220,000.00
	Subtotal				\$556,960.00
<u>Schwanger Road Extension</u>					
1	12" PVC Pipe	LF	3800	\$37.00	\$140,600.00
2	Manholes	EA	17	\$1,265.00	\$21,505.00
3	Road Boring	LF	80	\$240.00	\$19,200.00
4	Conn. to Exist. MH	EA	1	\$1,000.00	\$1,000.00
5	Stream Crossing	LF	30	\$125.00	\$3,750.00
6	Road Restoration	LF	350	\$13.00	\$4,550.00
7	Seed and Mulch	LF	3800	\$1.50	\$5,700.00
8	Demolition	LF	350	\$100.00	\$35,000.00
9	Metering Chamber	LS	1	\$18,000.00	\$18,000.00
	Subtotal				\$249,305.00
<u>Woodland Avenue Extension</u>					
1	8" PVC Pipe	LF	700	\$32.00	\$22,400.00
2	Manholes	EA	3	\$1,265.00	\$3,795.00
3	Conn. to Exist. MH	EA	2	\$1,000.00	\$2,000.00
4	Stream Crossing	LF	15	\$125.00	\$1,875.00
5	Road Restoration	LF	300	\$13.00	\$3,900.00
6	Seed and Mulch	LF	400	\$1.50	\$600.00
	Subtotal				\$34,570.00
<u>Schwanger Road Replacement</u>					
1	8" PVC Pipe	LF	400	\$32.00	\$12,800.00
2	Manholes	EA	3	\$1,265.00	\$3,795.00
3	Conn to Exist. MH	EA	1	\$1,000.00	\$1,000.00
4	Road Restoration	LF	800	\$13.00	\$10,400.00
5	Demolition	LF	400	\$100.00	\$40,000.00
	Subtotal				\$67,995.00
<u>WDTA Collection System Improvements</u>					
1	Existing Capacity Reallocation	LS	1	\$7,738.00	\$7,738.00
2	Nolt Rd. PS/FM Expansion	LS	1	\$196,000.00	\$196,000.00
3	Colebrook PS Expansion	LS	1	\$25,000.00	\$25,000.00
	Subtotal				\$228,738.00

CONEWAGO TREATMENT FACILITY ALTERNATIVE

Item	Description	Units	Quantity	Unit Cost	Total
<u>Mill Road Pump Station</u>					
1	6" DI FM	LF	2700	\$26.00	\$70,200.00
2	8" PVC Pipe	LF	2550	\$32.00	\$81,600.00
3	Manholes	EA	10	\$1,265.00	\$12,650.00
4	Conn to Exist. MH	EA	2	\$1,000.00	\$2,000.00
5	Road Restoration	LF	1000	\$13.00	\$13,000.00
6	Seed and Mulch	LF	4250	\$1.50	\$6,375.00
7	Mod. to Mill Rd. PS	LS	1	\$25,000.00	\$25,000.00
8	Mod. to Aberdeen PS	LS	1	\$25,000.00	\$25,000.00
9	Conn. to Exist. FM	LS	1	\$3,000.00	\$3,000.00
	Subtotal				\$238,825.00
<u>Radio Road P.S.</u>					
1	Radio Road PS	LS	1	\$120,000.00	\$120,000.00
2	6" DI FM	LF	5200	\$25.00	\$130,000.00
3	Air Release Chamber	EA	1	\$2,500.00	\$2,500.00
4	Road Boring	LF	50	\$240.00	\$12,000.00
5	Road Restoration	LF	5200	\$13.00	\$67,600.00
6	Aband. Hershey Rd. PS	LS	1	\$20,000.00	\$20,000.00
	Subtotal				\$352,100.00
<u>S.R. 0743 Extension</u>					
1	12" PVC Pipe	LF	3000	\$37.00	\$111,000.00
2	Manholes	EA	11	\$1,265.00	\$13,915.00
3	Road Boring	LF	50	\$240.00	\$12,000.00
4	Stream Crossing	LF	20	\$125.00	\$2,500.00
5	Seed and Mulch	LF	3000	\$1.50	\$4,500.00
	Subtotal				\$143,915.00
<u>Conewago Creek Interceptor</u>					
1	15" PVC Pipe	LF	6700	\$40.00	\$268,000.00
2	18" PVC Pipe	LF	22000	\$45.00	\$990,000.00
3	Manholes	EA	72	\$1,265.00	\$91,080.00
4	Road Boring	LF	200	\$240.00	\$48,000.00
5	Stream Crossing	LF	100	\$125.00	\$12,500.00
6	Road Restoration	LF	3000	\$13.00	\$39,000.00
7	Seed and Mulch	LF	25700	\$1.50	\$38,550.00
	Subtotal				\$1,487,130.00

1 MGD CONEWAGO ALTERNATIVE

Item	Description	Units	Quantity	Unit Cost	Total
<u>Mill Road Pump Station</u>					
1	6" DI FM	LF	2700	\$26.00	\$70,200.00
2	8" PVC Pipe	LF	2550	\$32.00	\$81,600.00
3	Manholes	EA	10	\$1,265.00	\$12,650.00
4	Conn. to Exist. MH	EA	2	\$1,000.00	\$2,000.00
5	Road Restoration	LF	1000	\$13.00	\$13,000.00
6	Seed and Mulch	LF	4250	\$1.50	\$6,375.00
7	Mod. to Mill Rd. PS	LS	1	\$25,000.00	\$25,000.00
8	Mod. to Aberdeen PS	LS	1	\$25,000.00	\$25,000.00
9	Conn. to Exist. FM	LS	1	\$3,000.00	\$3,000.00
	Subtotal				\$238,825.00
<u>S.R. 0743 Extension</u>					
1	12" PVC Pipe	LF	3000	\$37.00	\$111,000.00
2	Manholes	EA	11	\$1,265.00	\$13,915.00
3	Road Boring	LF	50	\$240.00	\$12,000.00
4	Stream Crossing	LF	20	\$125.00	\$2,500.00
5	Seed and Mulch	LF	3000	\$1.50	\$4,500.00
	Subtotal				\$143,915.00
<u>Conewago Creek Interceptor</u>					
1	18" PVC Pipe	LF	6700	\$45.00	\$301,500.00
2	21" PVC Pipe	LF	22000	\$60.00	\$1,320,000.00
3	Manholes	EA	72	\$1,265.00	\$91,080.00
4	Road Boring	LF	200	\$750.00	\$150,000.00
5	Stream Crossing	LF	100	\$125.00	\$12,500.00
6	Road Restoration	LF	3000	\$13.00	\$39,000.00
7	Seed and Mulch	LF	25700	\$1.50	\$38,550.00
	Subtotal				\$1,952,630.00
<u>Schwanger Road Pump Station</u>					
1	8" DI FM	LF	9000	\$32.00	\$288,000.00
2	12" PVC Pipe	LF	4000	\$37.00	\$148,000.00
3	Conn. to Exist. PS	EA	1	\$1,500.00	\$1,500.00
4	Road Boring	LF	60	\$240.00	\$14,400.00
5	Stream Crossing	LF	30	\$125.00	\$3,750.00
6	Conc. Curb Repl.	LF	30	\$12.00	\$360.00
7	Road Restoration	LF	10400	\$13.00	\$135,200.00
8	Seed and Mulch	LF	2600	\$1.50	\$3,900.00
9	Alt. to Exist. PS	LS	1	\$220,000.00	\$220,000.00
	Subtotal				\$815,110.00
<u>Kiwanis Boulevard Pump Station</u>					
1	Kiwanis Blvd. PS	LS	1	\$280,000.00	\$280,000.00
2	8" DI FM	LF	11300	\$32.00	\$361,600.00
3	Air Release Chamber	EA	2	\$2,500.00	\$5,000.00
4	Road Boring	LF	100	\$240.00	\$24,000.00
5	Road Restoration	LF	7100	\$13.00	\$92,300.00
6	Seed and Mulch	LF	4200	\$1.50	\$6,300.00
7	Aband. Hershey Rd. PS	LS	1	\$20,000.00	\$20,000.00
	Subtotal				\$789,200.00

TABLE 23

MOUNT JOY TOWNSHIP 537 PLAN
TOWNSHIP TREATMENT FACILITY ESTIMATED CONSTRUCTION COSTS

	<u>0.5 MGD Conewago</u>	<u>1.0 MGD Conewago</u>	<u>0.5 MGD S. Side⁽¹⁾</u>	<u>0.5 MGD Land App.</u>
Preliminary Treatment	\$ 37,400	\$ 52,000	\$ 37,400	\$ 37,400
Pumping Station	62,900	159,000	62,900	142,900
Pumps	78,200	120,000	78,200	380,000
Concrete	520,000	753,000	675,000	20,000
Biological Treatment	366,000	510,000	630,000	290,000
Control Building	150,000	280,000	360,000	120,000
Emergency Power	85,000	130,000	95,000	60,000
Chemical Treatment	20,000	30,000	42,000	-----
Piping	87,000	140,000	100,000	10,000
Disinfection	57,000	85,500	57,000	-----
Potable/Process Water	15,000	38,000	38,000	15,000
Sitework	32,000	60,000	45,000	160,000
Excavation	56,000	95,000	74,000	-----
Storage	-----	-----	-----	720,000
Distribution	-----	-----	-----	320,000
Mobilization/Demobilization	50,000	69,000	62,000	63,700
Land ⁽²⁾	80,000	80,000	80,000	1,400,000
Electrical	132,500	382,000	346,500	80,000
Outfall	<u>5,000</u>	<u>5,500</u>	<u>5,000</u>	<u>-----</u>
Estimated Treatment Facilities Construction Cost	\$1,834,000	\$2,989,000	\$2,788,000	\$3,819,000

⁽¹⁾ Based on Socio-Economic justification for discharge to a High Quality Stream.

⁽²⁾ Land cost based on \$5,000/acre.

TABLE 24
MOUNT JOY TOWNSHIP 537 PLAN ALTERNATIVES
CAPITAL COST COMPARISON
AS OF 10/9/98

CONSTRUCTION COST ESTIMATES	ELIZABETHTOWN ALTERNATIVE 1 (CONOY & WDTA INTERCEPTOR)	ELIZABETHTOWN ALTERNATIVE 2 (CONOY INTERCEPTOR & KIWANIS)	ELIZABETHTOWN ALTERNATIVE 3 (CONOY INTERCEPTOR & MH 45)	0.5 MGD CONEWAGO ALTERNATIVE	1.0 MGD CONEWAGO ALTERNATIVE	CONEWAGO SOUTHSIDE ALTERNATIVE	CONEWAGO SOUTHSIDE L.A. ALTERNATIVE
<u>MTA System Improvements</u>							
Mill Road Pump Station	\$123,075	\$123,075	\$123,075	\$238,825	\$238,825	\$238,825	\$238,825
Route 743 Sewer Improvements	\$254,845	\$254,845	\$254,845	\$143,915	\$143,915	\$143,915	\$143,915
Hershey Road Pump Station	\$424,520	\$424,520	\$424,520	\$20,000	\$0	\$20,000	\$20,000
Radio Road Pump Station	\$312,950	\$312,950	\$312,950	\$0	\$0	\$0	\$0
Elizabethtown Interceptor	\$354,830	\$0	\$354,830	\$0	\$0	\$0	\$0
Conewago Creek Interceptor	\$0	\$0	\$0	\$1,487,130	\$1,952,630	\$1,487,130	\$1,487,130
Schwanger Road Pump Station	\$556,960	\$815,110	\$933,970	\$556,960	\$815,110	\$180,000	\$180,000
Schwanger Road Extension	\$249,305	\$0	\$0	\$249,305	\$0	\$0	\$0
Woodland Avenue Extension	\$34,570	\$0	\$0	\$34,570	\$0	\$0	\$0
Schwanger Road Replacement	\$67,995	\$0	\$0	\$67,995	\$0	\$0	\$0
Kiwanis Blvd. Pump Station	\$0	\$0	\$0	\$0	\$289,200	\$409,600	\$409,600
Subtotal (3)	\$2,379,000	\$1,931,000	\$2,404,000	\$2,799,000	\$3,940,000	\$2,479,000	\$2,479,000
<u>WDTA System Improvements</u>							
Collection System Capacity Realloc.	\$3,684	\$3,425	\$3,425	\$3,684	\$3,425	\$3,425	\$3,425
Interceptor Capacity Reallocation	\$38,843	\$1,783	\$1,783	\$38,843	\$1,783	\$1,783	\$1,783
Interceptor Upsizing	\$478,148	\$250,727	\$250,727	\$478,148	\$250,727	\$250,727	\$250,727
Nolt Road PS/FM Expansion(1)	\$196,000	\$196,000	\$196,000	\$196,000	\$196,000	\$196,000	\$196,000
Colebrook PS Expansion	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Miller Road PS Expansion (1)	\$84,000	\$53,750	\$53,750	\$84,000	\$53,750	\$53,750	\$53,750
Miller Road FM Expansion(1)	\$245,000	\$0	\$0	\$245,000	\$0	\$0	\$0
Subtotal (3)	\$1,071,000	\$531,000	\$531,000	\$1,071,000	\$531,000	\$531,000	\$531,000
<u>Elizabethtown System Improvements</u>							
Interceptor Parallel Extension(1)	\$321,000	\$401,775	\$333,600	\$0	\$0	\$0	\$0
<u>Conewago Treatment Plant</u>							
0.5 or 1.0 MGD Capacity	\$0	\$0	\$0	\$1,834,000	\$2,989,000	\$1,834,000	\$1,834,000
<u>Southside Treatment Plant</u>							
0.5 MGD Capacity	\$0	\$0	\$0	\$0	\$0	\$2,788,000	\$3,819,000
<u>Elizabethtown Treatment Plant</u>							
4.5 MGD Expansion/Upgrade	\$4,499,000	\$4,499,000	\$4,499,000				
4.0 MGD Expansion/Upgrade				\$3,061,000			
3.6 MGD Expansion/Upgrade					\$582,000	\$582,000	\$582,000
Total Estimated Construction Cost(3)(4)	\$8,849,000	\$7,878,000	\$8,311,000	\$9,379,000	\$8,605,000	\$8,789,000	\$9,892,000
Construction Contingency (10%)	\$885,000	\$788,000	\$831,000	\$938,000	\$861,000	\$879,000	\$989,000
Total Estimated Project Cost(2)(3)	\$12,831,000	\$11,423,000	\$12,051,000	\$13,600,000	\$12,478,000	\$12,744,000	\$14,343,000

(1) Cost Sharing considered between MTA and Borough or WDTA.

(2) Project Costs estimated at 35% of construction costs.

(3) Totals rounded to nearest \$1,000.

(4) Costs updated to 1999

TABLE 25

**MOUNT JOY TOWNSHIP
537 PLAN ALTERNATIVES
ESTIMATED ANNUAL ADMINISTRATIVE COSTS**

Item	Estimated Cost
Administration	8,000.00
Operator Salary w/ Benefits	72,000.00
Trustee Fee	2,500.00
Office Supplies	4,000.00
Advertising	500.00
Insurance	15,000.00
Audit	5,000.00
Telephone	3,200.00
Postage	2,000.00
Legal	2,000.00
Engineering	15,000.00
Electricity	0.00
Collection System Maintenance and Repair	20,000.00
Chemical and Supplies	200.00
Testing	100.00
Total Estimated Operating Cost	149,500.00
Includes overall system operating costs associated with all alternatives.	

TABLE 26
MOUNT JOY TOWNSHIP 537 PLAN ALTERNATIVES
ESTIMATED OPERATION AND MAINTENANCE COSTS
AS OF 10/9/98

O AND M COST ESTIMATES	ELIZABETHTOWN ALTERNATIVE 1 (CONOY & WDTA INTERCEPTOR)	ELIZABETHTOWN ALTERNATIVE 2 (CONOY INTERCEPTOR @ KIWANIS)	ELIZABETHTOWN ALTERNATIVE 3 (CONOY INTERCEPTOR @ MH 45)	0.5 MGD CONEWAGO ALTERNATIVE	1.0 MGD CONEWAGO ALTERNATIVE	CONEWAGO SOUTHSIDE ALTERNATIVE	CONEWAGO SOUTHSIDE L.A. ALTERNATIVE
<u>Pump Stations</u>							
Mill Road Pump Station	\$4,000	\$4,000	\$4,000	\$4,050	\$4,050	\$4,050	\$4,050
Hershey Road Pump Station	\$14,550	\$14,550	\$14,550	\$0	\$0	\$0	\$0
Radio Road Pump Station	\$11,325	\$11,325	\$11,325	\$0	\$0	\$0	\$0
Schwanger Road Pump Station	\$11,750	\$12,800	\$16,100	\$11,750	\$12,800	\$0	\$0
Kiwanis Pump Station	\$0	\$0	\$0	\$0	\$19,300	\$4,500	\$4,500
Conewago Pump Station	\$1,475	\$1,475	\$1,475	\$0	\$0	\$0	\$0
Aberdeen Pump Station	\$1,530	\$1,530	\$1,530	\$0	\$0	\$0	\$0
Subtotal (3)	\$44,630	\$45,680	\$48,980	\$15,800	\$36,150	\$8,550	\$8,550
<u>Wastewater Treatment Facilities</u>							
0.5 Mgd Conewago	\$0	\$0	\$0	\$202,000	\$0	\$202,000	\$202,000
0.5 Mgd Southside	\$0	\$0	\$0	\$0	\$0	\$223,500	\$0
1.0 Mgd Conewago	\$0	\$0	\$0	\$0	\$354,500	\$0	\$0
0.5 Southside Land Application	\$0	\$0	\$0	\$0	\$0	\$0	\$99,000
<u>Elizabethtown System</u>							
Treatment Charges	\$153,300	\$223,300	\$223,300	\$57,400	\$31,500	\$31,500	\$31,500
Conveyance Charges	\$500	\$515	\$720	\$5,350	\$2,700	\$2,700	\$2,700
<u>West Donegal System</u>							
Treatment Charges	\$126,300	\$57,700	\$57,700	\$141,000	\$69,700	\$69,700	\$69,700
Conveyance Charges	\$126,900	\$58,000	\$58,000	\$126,900	\$58,000	\$58,000	\$58,000
MITA System Administration	\$149,500	\$149,500	\$149,500	\$149,500	\$149,500	\$149,500	\$149,500
Total Estimated Annual O&M Cost(1)	\$601,000	\$535,000	\$538,000	\$698,000	\$702,000	\$745,000	\$621,000
Estimated Present Worth O&M Cost (1)(2)(3)	\$6,438,000	\$5,731,000	\$5,764,000	\$7,478,000	\$7,520,000	\$7,981,000	\$6,653,000

(1) Totals rounded to nearest \$1,000.

(2) Present Worth Based on 7.75% and 20 Years.

(3) Costs updated and estimated to 1999

It is interesting to note that while the Elizabethtown alternatives provide the economy of scale for treatment costs, there is a higher price to be paid for conveyance charges and pumping costs to convey flow to the distant plant site.

Salvage values are included as a part of the cost effectiveness analysis to compare the seven different alternatives equally within the same 20-year time frame. For example, a salvage value would place a higher value on interceptor construction over a treatment facility due to the interceptors' longer life expectancy. The remaining 30 years of interceptor value is credited as a straight line depreciation to the present worth analysis.

The following schedule is used as a basis for determining salvage values for the sewer alternatives.

Estimated Depreciation Schedule for Wastewater Facilities

1. **Conveyance Facilities**
50 years - straight line depreciation
2. **Wastewater Treatment Facilities**
Equipment (1/2 construction cost) - 20 years - straight line depreciation
Structures (1/2 construction cost) - 40 years - straight line depreciation
3. **Pumping Facilities**
Equipment (1/3 construction cost) 20 years - straight line depreciation
Structures (2/3 construction cost) 40 years - straight line depreciation
4. **Spray Irrigation Facilities**
Spray System - 20 years - straight line depreciation
Sitework - 40 years - straight line depreciation
5. **Land**
No depreciation

Table 27 presents a summary of the estimated future salvage values and the equivalent present worth value based on 7.75 percent interest and a 20-year time frame. As expected the alternative utilizing a spray irrigation treatment system has the highest salvage value as attributed to the value of land utilized for spray irrigation.

The lowest salvage value is attributed to the Conewago-Southside alternative which utilized closer treatment facility sites to avoid higher conveyance interceptor costs.

Table 28 presents the present worth analysis combining the project costs, annual generation and maintenance and salvage values. The table allows a common comparison of the cost benefits of each alternative in terms of lower construction cost, lower O&M cost or greater life expectancy to be compared in an equal manner.

Net present worth is determined by adding the estimated project costs and present worth O&M costs and deducting the present worth salvage value.

TABLE 27
MOUNT JOY TOWNSHIP 537 PLAN ALTERNATIVES
ESTIMATED SALVAGE VALUES
AS OF 10/9/98

SALVAGE VALUES	ELIZABETHTOWN ALTERNATIVE 1 (CONOY & WDTA INTERCEPTOR)	ELIZABETHTOWN ALTERNATIVE 2 (CONOY INTERCEPTOR @ KIWANIS)	ELIZABETHTOWN ALTERNATIVE 3 (CONOY INTERCEPTOR @ MH 45)	0.5 MGD CONEWAGO ALTERNATIVE	1.0 MGD CONEWAGO ALTERNATIVE	CONEWAGO SOUTHSIDE ALTERNATIVE	CONEWAGO SOUTHSIDE L.A. ALTERNATIVE
<u>MJTA System Improvements</u>							
Mill Road Pump Station	\$60,550	\$60,550	\$60,550	\$130,000	\$130,000	\$130,000	\$238,825
Route 743 Sewer Improvements	\$152,900	\$152,900	\$152,900	\$86,350	\$86,350	\$86,350	\$143,915
Hershey Road Pump Station	\$234,700	\$234,700	\$234,700	\$0	\$0	\$0	\$0
Radio Road Pump Station	\$203,800	\$203,800	\$203,800	\$0	\$0	\$0	\$0
Elizabethtown Interceptor	\$212,900	\$0	\$212,900	\$0	\$0	\$0	\$0
Conewago Creek Interceptor	\$0	\$0	\$0	\$892,300	\$1,171,500	\$892,300	\$1,487,130
Schwanger Road Pump Station	\$275,500	\$430,400	\$560,400	\$275,500	\$430,400	\$108,000	\$180,000
Schwanger Road Extension	\$149,600	\$0	\$0	\$149,600	\$0	\$0	\$0
Woodland Avenue Extension	\$20,750	\$0	\$0	\$20,750	\$0	\$0	\$0
Schwanger Road Replacement	\$40,800	\$0	\$0	\$40,800	\$0	\$0	\$0
Kiwanis Blvd. Pump Station	\$0	\$0	\$0	\$0	\$198,800	\$211,750	\$409,600
Subtotal (3)	\$1,352,000	\$1,082,000	\$1,425,000	\$1,595,000	\$2,217,000	\$1,430,000	\$2,459,000
<u>WDTA System Improvements</u>							
Collection System Capacity Realloc.	\$2,200	\$2,050	\$2,050	\$2,200	\$2,050	\$2,050	\$2,050
Interceptor Capacity Reallocation	\$23,300	\$1,050	\$1,050	\$23,300	\$1,050	\$1,050	\$1,050
Interceptor Upsizing	\$286,900	\$150,400	\$150,400	\$286,900	\$150,400	\$150,400	\$150,400
Nolt Road PS/FM Expansion (1)	\$97,300	\$97,300	\$97,300	\$97,300	\$97,300	\$97,300	\$97,300
Colebrook PS Expansion	\$8,300	\$8,300	\$8,300	\$8,300	\$8,300	\$8,300	\$8,300
Miller Road PS Expansion (1)	\$28,000	\$17,900	\$17,900	\$28,000	\$17,900	\$17,900	\$17,900
Miller Road FM Expansion (1)	\$147,000	\$0	\$0	\$147,000	\$0	\$0	\$0
Subtotal (3)	\$593,000	\$277,000	\$277,000	\$593,000	\$277,000	\$277,000	\$277,000
<u>Elizabethtown System Improvements</u>							
Interceptor Parallel Extension(1)	\$192,600	\$241,100	\$200,200	\$0	\$0	\$0	\$0
<u>Conewago Treatment Plant</u>							
0.5 or 1.0 MGD Capacity	\$0	\$0	\$0	\$518,500	\$807,250	\$518,500	\$518,500
<u>Southside Treatment Plant</u>							
0.5 MGD Capacity	\$0	\$0	\$0	\$0	\$0	\$697,000	\$2,064,750
<u>Elizabethtown Treatment Plant</u>							
4.5 MGD Expansion/Upgrade	\$1,124,750	\$1,124,750	\$1,124,750				
4.0 MGD Expansion/Upgrade				\$765,250			
3.6 MGD Expansion/Upgrade					\$145,500	\$145,500	\$145,500
Total Estimated Future Salvage Value(2)(4)	\$3,491,000	\$2,916,000	\$3,239,000	\$3,715,000	\$3,688,000	\$3,283,000	\$5,847,000
Present Worth Salvage Value (2)(3)	\$787,000	\$658,000	\$730,000	\$838,000	\$832,000	\$748,000	\$1,318,000

(1) Cost Sharing considered between MJTA and Borough or WDTA.
(2) Totals rounded to nearest \$1,000.
(3) Present Worth Based on 7.75% and 20 Years.
(4) Future costs updated to 1999 estimates

TABLE 28
MOUNT JOY TOWNSHIP 537 PLAN ALTERNATIVES
PRESENT WORTH COST COMPARISON
AS OF 10/9/98

CONSTRUCTION COST ESTIMATES	ELIZABETHTOWN ALTERNATIVE 1 (CONOY & WDTA INTERCEPTOR)	ELIZABETHTOWN ALTERNATIVE 2 (CONOY INTERCEPTOR & KIWANIS)	ELIZABETHTOWN ALTERNATIVE 3 (CONOY INTERCEPTOR & MR 45)	0.5 MGD CONEWAGO ALTERNATIVE	1.0 MGD CONEWAGO ALTERNATIVE	CONEWAGO SOUTHSIDE ALTERNATIVE	CONEWAGO SOUTHSIDE L.A. ALTERNATIVE
MJTA System Improvements							
Mill Road Pump Station	\$123,075	\$123,075	\$123,075	\$238,825	\$238,825	\$238,825	\$238,825
Route 743 Sewer Improvements	\$254,845	\$254,845	\$254,845	\$143,915	\$143,915	\$143,915	\$143,915
Hershey Road Pump Station	\$424,520	\$424,520	\$424,520	\$20,000	\$0	\$20,000	\$20,000
Radio Road Pump Station	\$312,950	\$312,950	\$312,950	\$0	\$0	\$0	\$0
Elizabethtown Interceptor	\$354,830	\$0	\$354,830	\$0	\$0	\$0	\$0
Conewago Creek Interceptor	\$0	\$0	\$0	\$1,487,130	\$1,952,630	\$1,487,130	\$1,487,130
Schwanger Road Pump Station	\$556,960	\$815,110	\$933,970	\$556,960	\$815,110	\$180,000	\$180,000
Schwanger Road Extension	\$249,305	\$0	\$0	\$249,305	\$0	\$0	\$0
Woodland Avenue Extension	\$34,570	\$0	\$0	\$34,570	\$0	\$0	\$0
Schwanger Road Replacement	\$67,995	\$0	\$0	\$67,995	\$0	\$0	\$0
Kiwanis Blvd. Pump Station	\$0	\$0	\$0	\$0	\$789,200	\$409,600	\$409,600
Subtotal (3)	\$2,379,000	\$1,931,000	\$2,404,000	\$2,799,000	\$3,940,000	\$2,479,000	\$2,479,000
WDTA System Improvements							
Collection System Capacity Realloc.	\$3,684	\$3,425	\$3,425	\$3,684	\$3,425	\$3,425	\$3,425
Interceptor Capacity Reallocation	\$38,843	\$1,783	\$1,783	\$38,843	\$1,783	\$1,783	\$1,783
Interceptor Upgrading	\$478,148	\$250,727	\$250,727	\$478,148	\$250,727	\$250,727	\$250,727
Noh Road PS/FM Expansion (1)	\$196,000	\$196,000	\$196,000	\$196,000	\$196,000	\$196,000	\$196,000
Colebrook PS Expansion	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Miller Road PS Expansion (1)	\$84,000	\$53,750	\$53,750	\$84,000	\$53,750	\$53,750	\$53,750
Miller Road FM Expansion (1)	\$245,000	\$0	\$0	\$245,000	\$0	\$0	\$0
Subtotal (3)	\$1,071,000	\$531,000	\$531,000	\$1,071,000	\$531,000	\$531,000	\$531,000
Elizabethtown System Improvements							
Interceptor Parallel Extension (1)	\$321,000	\$401,775	\$333,600	\$0	\$0	\$0	\$0
Conewago Treatment Plant							
0.5 or 1.0 MGD Capacity	\$0	\$0	\$0	\$1,834,000	\$2,989,000	\$1,834,000	\$1,834,000
Southside Treatment Plant							
0.5 MGD Capacity	\$0	\$0	\$0	\$0	\$0	\$2,788,000	\$3,319,000
Elizabethtown Treatment Plant							
4.5 MGD Expansion/Upgrade	\$4,499,000	\$4,499,000	\$4,499,000				
4.0 MGD Expansion/Upgrade				\$3,061,000			
3.6 MGD Expansion/Upgrade					\$582,000	\$582,000	\$582,000
Total Estimated Construction Cost (3)(4)	\$8,849,000	\$7,578,000	\$8,311,000	\$9,379,000	\$8,605,000	\$8,789,000	\$9,992,000
Construction Contingency (10%)	\$885,000	\$788,000	\$831,000	\$938,000	\$861,000	\$879,000	\$999,000
Total Estimated Project Cost (2)(3)	\$11,831,000	\$11,423,000	\$12,051,000	\$13,600,000	\$12,478,000	\$12,744,000	\$14,343,000
Total Estimated Annual O&M Cost (3)	\$601,000	\$535,000	\$538,000	\$698,000	\$702,000	\$745,000	\$621,000
Estimated Present Worth O&M Cost (3)	\$6,438,000	\$5,731,000	\$5,764,000	\$7,478,000	\$7,520,000	\$7,981,000	\$6,653,000
Total Estimated Future Salvage Value (3)	\$3,491,000	\$2,916,000	\$3,239,000	\$3,715,000	\$3,688,000	\$3,283,000	\$5,847,000
Present Worth Salvage Value (3)	\$787,000	\$658,000	\$730,000	\$838,000	\$832,000	\$740,000	\$1,318,000
ESTIMATED PRESENT WORTH (3)	\$18,482,000	\$16,496,000	\$17,085,000	\$20,240,000	\$19,166,000	\$19,985,000	\$19,678,000

(1) Cost sharing considered between MJTA and Borough or WDTA.
(2) Project Costs estimated at 35% of construction costs.
(3) Totals rounded to nearest \$1,000.
(4) Costs updated to 1999 costs.

Based on the relative present worth, the Elizabethtown alternatives are the most cost-effective of the seven alternatives. Alternative 2, using a diversion of the Schwanger Road pump station to bypass the WDTA interceptor and discharge into the Conoy Creek interceptor at Kiwanis Boulevard, is the most cost-effective of the three Elizabethtown alternatives.

We note that the comparisons made for these alternatives included opportunities for cost sharing by municipalities toward construction and O&M costs that may result from the following:

- Upsizing of the Conoy Creek interceptors by the Borough to accommodate additional flows in Mount Joy Township; and
- Possible joint regional use of the Conewago treatment facility site to accommodate flows from West Donegal Township and Londonderry Township.

During the development of alternatives it was recognized that it would be costly for MJTA to be responsible for cost improvements to both the WDTA interceptor and Elizabethtown interceptor to reach the treatment facility. It would be beneficial to identify a single route for expansion of an existing interceptor to reduce the cost of conveyance.

As the Borough and WDTA developed their planning, it was determined that WDTA would need to reserve any remaining capacity in their interceptor for growth in West Donegal Township. As a result, any expansion costs would be the responsibility of MJTA. However, in Elizabethtown, the Borough determined the need to rehabilitate the Conoy Creek interceptor through the Borough to the treatment plant. By jointly participating in this project there would be a significant cost savings to both municipalities. It would also be cost effective to size the new interceptor to handle the additional flows proposed in the Township due to the central location of the Conoy Creek interceptor.

With respect to the Conewago treatment facility, initial discussions on the location of a site in the Conewago Industrial Park were not favorable. Interest in a cooperative cost sharing with West Donegal Township and Londonderry Township was also hampered by differences in implementation schedules for public sewer.

In addition to cost there are other factors that will need to be considered in the final selection (i.e., environmental, service area availability, construction phasing, implementation, reliability, and operability).

5.4 Non-Structural Alternatives

The continued use of individual sewage disposal systems is currently the only feasible alternative for those areas of the Township which cannot be served by existing public sewer systems. Therefore, the Township can develop effective non-structural measures aimed at increasing the longevity of on-lot systems and improving groundwater protection measures.

A "no action" alternative would potentially create future long-term problem areas as it would not address the issues of properly maintained systems and further groundwater degradation from future system malfunctions. Therefore, a no-action alternative is not recommended.

The following non-structural alternatives should be evaluated by the Township to protect the groundwater from further degradation and to promote adequate sewage facilities planning:

OLDS Education

An educational program should be initiated which would involve mailings and/or public meetings intended to promote proper maintenance of on-lot sewage disposal systems. The Township SEO would be primarily responsible for developing such a program.

Sewage Management Program

In addition to encouraging the proper maintenance of OLDS through an educational program, the Township should adopt a comprehensive sewage management program, by ordinance, which would require adequate management of sewage facilities. This ordinance would be consistent with the requirements of the Pennsylvania Code 25, Chapter 71, and would address the following:

1. **Modifications to OLDS** - Any modifications or improvements to existing on-lot systems will be consistent with the requirements of this program as well as Chapter 71. Depending on the type of modification, the Township or DEP may require expanded absorption areas, alternating absorption areas, or water conservation devices.
2. **Maintenance of OLDS** - Consistent with Chapter 71, Section 71.73, the sewage management program would establish the legal authority to require proper maintenance or operation for facilities which are not properly functioning. Based on the deficiencies, the Township could enforce regulations regarding periodic pumping of septage, surface contouring, water conservation, mechanical and electrical devices, standards for septage pumps/haulers, and the maintenance of holding tanks.
3. **Holding Tanks and Privies** - Procedures would be established for the use and maintenance of existing and new holding tanks and privies consistent with the requirements of Chapter 71, Section 71.63.
4. **Alternate Absorption Areas** - The testing and designation of land suitable for an alternate on-lot system would be required for each lot proposed in all new subdivisions and land developments.
5. **Inspection Procedures** - In order to effectively enforce the sewage management program, the Township must establish the right to inspect all sewage facilities within the Township.
6. **Flow Metering** - The Township may require flow metering if hydraulic overloading is believed to be the cause of a malfunctioning facility.

Areas Requiring Hydrogeologic Studies

State regulations in Chapter 71, Section 71.62(c)(2) require a preliminary hydrogeologic analysis for developments proposing on-lot sewage disposal systems when any of the following conditions exist:

1. A large volume (>10,000 gpd) on-lot sewage system is proposed.
2. A subdivision of more than 50 EDU's with a density of more than one lot or EDU per acre is proposed.
3. A well within ¼ mile of the development is known to have nitrate results exceeding 5 parts per million (ppm).
4. The underlying geology may contribute to the potential for groundwater pollution from on-lot sewage systems.

Based on the background findings of this Plan, the Township must develop a plan of action for requiring hydrogeologic analyses for proposed land developments which is consistent with the intent of these state regulations. In addition to requiring such studies for all properties within 1/4 mile of any well containing elevated nitrates, the Township should consider requiring hydrogeologic studies prior to the development or subdivision of land in other areas of concern which are addressed in this Plan. The Township should consider the following alternatives for requiring hydrogeological analyses for projects proposing the use of on-lot sewage disposal:

1. Require such studies for all subdivisions or land developments which require a planning module.
2. Require such studies for all subdivisions or land developments which require a planning module, in areas which are underlain by limestone geology.
3. Require such studies for all projects which require a planning module in areas which are designated by this Plan as having a history of malfunctioning on-lot sewage disposal systems.
4. For those areas of the Township which are not identified by this Plan as having elevated nitrates or any of the conditions listed in the above paragraphs (a-c), require the applicant to present at least one nitrate test result from the site (or adjacent to the site if no well exists) which was collected and tested by a DEP-certified laboratory. A hydrogeologic study is only required if the nitrate result is greater than 5 ppm. As a condition to this requirement, the laboratory and applicant shall certify that all well results collected for this purpose have been presented to the Township.

Nitrate Monitoring Policy

Based on the number of nitrate results above 5.0 ppm which were tested for this study, it is apparent that hydrogeologic studies will be required prior to land development in many areas of

the Township. The Township should adopt a nitrate monitoring policy which would evaluate the consistency between this Plan and hydrogeologic studies submitted by a developer as part of a planning module. Well results submitted with planning modules would be compared to the results of the 537 Plan for nearby areas and would be recorded by the Township on the Hydrogeologic Map (Map 11). If the submitted well results vary from the findings of the 537 Plan, the Township may require additional testing. This program will enhance the administration of DEP's requirements for preliminary hydrogeologic studies while producing a continuous supply of new well data which will be available to the Township and DEP for future studies.

Non-Building Waivers

DEP has developed a procedure (Form B) which allows a property owner to apply for a waiver of the requirement to obtain planning module approval for the subdivision of land if the lots which are to be created will not be built upon. By acknowledging such a waiver, the municipality accepts full responsibility, now and in the future, to prevent any violation of the conditions of the lot. If a violation occurs, the Township must acquire planning module approval from DEP which will include soil testing and other environmental studies for the entire subdivision. Therefore, the Township should consider attaching the following conditions to such waivers for all or specified areas of the Township:

1. Any existing lot which required a hydrogeologic analysis prior to its creation shall not be decreased in size through the use of a non-building waiver. The applicant of such a subdivision shall acquire planning module approval using the Component 2 process.
2. Non-building waiver requests for properties utilizing on-lot sewage disposal systems, in areas with elevated nitrates shall include evidence which supports the proposed lot sizes. If the Board of Supervisors determines that this evidence does not adequately address the nitrate issue, the applicant shall be required to submit a Component 2 planning module which would include a hydrogeologic analysis.
3. In addition to the requirements of Section D of Form B which requires an inspection of any existing OLDS by the Township SEO, the applicant shall also demonstrate that there is an adequate location for a replacement absorption field for the proposed lot or lots. This replacement area shall be approved by the SEO and reserved for future use. The replacement area shall remain free of any structures or vegetation which may adversely impact the suitability of the soil. Only shallow-rooted plant matter will be permitted in the replacement area.

Capped Sewer Ordinance

Depending on the availability of public sewer service, the installation of capped sewers may be required by the Township for land developments in areas which are proposed by this Plan to be sewerer within five or ten years. After adopting a capped sewer ordinance, the Township would require such systems when the existing public sewer system is currently incapable of accepting flows from a proposed development due to either the location of the project or the lack of sufficient conveyance or treatment capacity. Since on-lot sewage disposal systems would be utilized as an interim measure, the developer of such a project would be required to comply with

all regulations of the Township and DEP for OLDS which may include, but is not limited to, minimum lot sizes and hydrogeologic studies. Additionally, capped sewers must be constructed in accordance with MJTA regulations.

Dispersion Plume Easements

Preliminary hydrogeologic analyses usually require large lots in areas with marginally elevated nitrates (5 ppm to 10 ppm). Although this requirement is intended to protect the groundwater by restricting the development potential of land which is not currently served by public sewers, excessive lot sizes most often result in the inefficient use of land. Additionally, larger lots are more costly to serve with public sewers if it is required at some point in the future.

The concept of a dispersion plume easement is intended to protect the groundwater in a manner which is equal to, or greater than, the requirement of large lot sizes. A hydrogeologic study would be performed in a similar manner as required with traditional development; however, the study must include the mapping of the plume of dispersion from each proposed drainfield which is in excess of 10 ppm. Smaller lot sizes would be utilized in combination with an easement near the drainfield on the adjacent or remaining lands. The easement would cover the area of land which is outside the proposed lot and would contain the dispersion plume. This method would protect the groundwater to a greater extent than the large-lot method since it would require developers to position each drainfield in a location where the dispersion plume will not adversely impact any future or existing land uses. (The traditional large-lot hydrogeologic analysis does not address the location of each proposed drainfield since it is based only on lot area.)

For subdivisions which would require excessive lot sizes, a dispersion plume easement may be utilized on the parent tract, or adjacent land, so that the subdivision may utilize smaller, more efficient lot sizes. If public sewer service is later provided to the development, the easement would be removed from the deed and the land which the easement covered would become available for development. Dispersion plume easements could also be used with capped sewers in areas where sewer service is planned but not yet available.

In addition to any DEP policies, land developments proposing the use of dispersion plume easements shall be consistent with the following standards:

1. The dispersion plume must be delineated by a qualified professional hydrogeologist, and the proposed easement shall be located and sized to correspond to the limits of the dispersion plume.
2. The use of dispersion plume easements should be limited to developments proposing four or fewer lots unless a capped sewer system is installed to MJTA standards and public sewer service is planned within 10 years.
3. The placement of wells within the easement area will be prohibited.

4. Impervious surfaces may not be included as land which is available for groundwater recharge within the dispersion plume easement area. Additionally, no impervious materials may be added to the easement area after the limits of the easement have been defined.
5. The easement area may not be used to dilute future sewage effluent proposed by any additional subdivision or land development.
6. A legal description of the surveyed boundary of the easement shall be required by the Township prior to the issuance of a building permit.
7. Dispersion plume easements will not be permitted in areas which have documented well test results indicating nitrate-nitrogen levels in excess of 10 ppm, nor will any easement be approved which has not been certified by a professional hydrogeologist to be large enough to maintain background nitrate levels below 10 ppm.
8. The easement must remain as a deed restriction until public sewer service is provided to the lots which created the need for the easement.
9. The Township shall develop techniques to administer deed restrictions which may include any of the following options:
 - a. Require the easement to be recorded as a separate instrument prior to planning module approval.
 - b. Require the proposed easement to be shown on the subdivision plan.
 - c. Approve the planning module based on the condition that the proposed easement will be recorded prior to the issuance of the on-lot sewage disposal permit for the lot which created the need for the easement. The Township Zoning Officer would also require a copy of the deed showing the easement, prior to the issuance of a building permit.

5.5 Environmental Considerations

As with any waste handling facility, the environmental impacts of the proposed action(s) in the planning area must be assessed. The construction and operation of new facilities will have some adverse environmental impacts. Impacts may be temporary or permanent; some may even be beneficial to the environment. In addition to immediate impacts, there may be those which do not appear until the system has been in operation for a period of time. These delayed impacts may be of two types; those resulting from the aging of the system and those known as secondary impacts, which include land development induced by the location of new sewers.

Long-term impacts are primarily effects on soils, ground and surface waters, and some aesthetic considerations. By altering the ground and surface water regimes, certain wastewater treatment schemes can have an adverse environmental impact on soils. Long-term aesthetic considerations include the proximity of the treatment plant to existing development and drinking water sources.

Short-term effects on the environment are basically the effects of treatment plant construction.

Environmental quality may benefit from certain treatment schemes which improve the quality of effluent discharged to surface waters or groundwater. Suitable aquatic habitats are enlarged and overall water quality and supply is improved.

Some problems result as treatment systems age. These problems include equipment breakdowns or failures and leaks in piping or tanks.

The specific temporary (short-term), permanent (long-term), and delayed adverse impacts as well as beneficial impacts are presented for the wastewater treatment methods in this report as non-monetary cost considerations. The environmental factors to be considered are listed below.

Environmental Considerations

- | | |
|-----------------------|-----------------|
| • Climate | • Physiography |
| • Aesthetics | • Geology |
| Noise | • Groundwater |
| Air | Quality |
| Visual | Quantity |
| • Terrestrial Ecology | • Surface Water |
| • Aquatic | Quality |
| • Soils | Quantity |

A matrix summary of the environmental impacts associated with the different alternatives is provided on Table 29. Factors range from 1 to 5 on the basis of least impact to greater impact. The alternative with the lowest total score in the matrix is considered to have the lowest impact associated with environmental considerations.

TABLE 29

ENVIRONMENTAL IMPACTS

Category	Alternatives						
	Elizabethtown			Conewago		Southside	
	1	2	3	.5 mgd	1 mgd	Stream	Spray
Climate	1	1	1	1	1	1	1
Aesthetic							
Visual	1	1	1	2	2	2	3
Noise	1	1	1	1	1	1	1
Air	1	1	1	1	1	1	2
Culture	1	1	1	1	1	1	1
Physiology	2	2	2	2	2	2	2
Geology	1	1	1	1	1	1	2
Groundwater							
Quality	1	1	1	1	1	1	3
Quantity	3	3	3	3	3	2	1
Surface Water							
Quality	2	2	2	2	3	4	1
Quantity	2	2	2	1	2	1	1
Soils	1	1	1	1	1	1	2
Terrestrial Ecology	1	1	1	1	1	1	2
Aquatic Ecology	2	2	2	2	2	3	1
Total Point Factors	20	20	20	20	22	22	23

In addition to environmental considerations, there are also several other impacts associated with state and federal preservation programs as well as operations and implementation issues. These impacts are summarized below with general comment as a consideration in the selection of a preferred alternative by the Township.

- Archeological and Historical - No historical structures are anticipated to be disturbed as a result of the proposed improvements associated with the lowest cost alternative. Due to the location of sewer near natural water courses, a Phase I archaeological survey is expected to be required during design by the Pennsylvania Historical and Museum Commission (PHMC) (see correspondence).
- Natural Resources - Based on a review of the Pennsylvania Natural Diversity Inventory (PNDI), some natural resources can be potentially impacted by the proposed sewer conveyance facilities. A response from PNDI (see correspondence) indicated a Pennsylvania rare plant on wooded slopes. Generally, most of the proposed facilities will be located in low areas and along roads. Some wetlands involvement is anticipated by the extension of sewers. This impact is anticipated to be temporary due to sewer construction with no loss of wetlands.
- Prime Agricultural Land - Some prime agricultural soils are located in the proposed sewer areas. However, the limited defined service areas severely limit the potential for significant loss of prime agricultural land. The large tracts of prime agricultural land to the east of Route 283 will be protected by directing growth to occur in the designated growth areas where public sewer service will be available. No public sewer is proposed in agricultural zoned areas of the Township. Capacity has been developed to serve areas zoned for residential, commercial and industrial uses.
- Wild and Scenic Rivers - No involvement of this resource occurs in the project area.
- Socioeconomic Considerations - The availability of sewer service to Mount Joy Township (Township) is necessary to maintain water quality, protect public health and secondarily to support growth in the Township. The proposed conveyance facilities continue to support a goal of providing public sewer facilities to growth areas of the Township.
- Operability - Alternatives proposing conveyance to existing treatment facilities are considered to have the best operability due to an existing operations structure and lower increase in operating needs. The local Township treatment alternatives can be considered equal if the systems are operated as an extension of the existing MJTA system. Operating needs could then be supported by the expansion of the existing Township Authority operations structure.
- Reliability - The conveyance alternatives to Elizabethtown are considered the more reliable due to the availability of a larger operating system, full-time staffing, and onsite analysis. The local treatment alternatives need to provide the necessary reliability by the use of current technology utilizing computer system process control, equipment redundancy, alarm telemetry, and emergency power generation capability.

- **Resource Use** - High conveyance cost alternatives are considered to require the most significant need of resources due to the need to transport wastewater significant distances involving several pump stations prior to treatment. A single treatment facility is also generally more efficient in handling larger volumes of flow than multiple plant locations.
- **Implementability** - Regional treatment alternatives are usually considered to be the least implementable due to intermunicipal involvement, existing limits on available conveyance capacity and the need to acquire and locate sites and easements in adjacent municipalities. In this case, an intermunicipal structure for regionalization currently exists.

5.6 Organizational and Management Considerations

The implementation of the expansion of wastewater facilities in Mount Joy Township will be sponsored and financed by the existing MJTA. This 5-member group was organized over twenty-three years ago. MJTA is experienced at owning and operating the existing sewer and water systems in the Township.

Continued ownership and operation of the wastewater facilities by MJTA offers the following advantages:

- Existing management and operations structure.
- Availability of operating and administration staff.
- Established legal basis for securing debt and system regulation.
- Coordination of water and wastewater utilities within a common sewer service area.

Elizabethtown Borough is also experienced and capable of owning and operating the existing sewer treatment facilities.

Both municipalities have demonstrated a long-term cooperation through an existing intermunicipal service agreement. Continued operation and management of the existing respective sewer facilities by MJTA and Elizabethtown Borough is feasible for any alternative under consideration.



CHAPTER 6



CHAPTER 6

RECOMMENDED WASTEWATER MANAGEMENT ALTERNATIVES

Based on the detailed evaluation of alternatives, this chapter identifies the recommended alternatives which are proposed to be implemented by the Township. The consistency between the plan of action and the goals and policies of the Township, county, state, and federal government will also be addressed in this chapter.

6.1 Recommended Structural Alternatives

Based on the proposed Comprehensive Plan and recently revised zoning map of the Township, it is proposed that improvements to the MJTA sewer system be implemented to continue to provide public sewer service to areas of the Township where growth is to be directed. Concurrently, MJTA should also make provisions for additional capacity to be obtained in the West Donegal Township sewer system to continue to serve areas of the Township that can naturally flow into the West Donegal Township system. Capacity should also be obtained through the cooperative expansion and rehabilitation of the park conveyance sewer from the Kiwanis Boulevard metering chamber to Market Street and the Conoy Creek interceptor to the Elizabethtown treatment facility.

In addition to conveyance capacity, it is recommended that MJTA obtain additional treatment capacity at the Elizabethtown treatment plant to serve capacity needs through the year 2020.

Capacity determinations for the conveyance and treatment facilities should address long term needs of the Township. This will result in capacity beyond the planning time frame of the proposed Comprehensive Plan. However, due to the large capital investment needed to install and/or replace conveyance facilities and the time required to develop planning and intermunicipal constraints associated with implementation, it is more cost effective to provide for future needs in an increased pipe size at this time.

As a result of the maximization of the existing treatment plant hydraulic capacity, studies by Elizabethtown Borough have determined that it is not feasible to phase the addition of treatment capacity. Considering the time needed to develop planning and implementation of future capacity, the limited need of the Borough for future capacity and the need to build proposed capacity initially at the plant, it is recommended that long-term capacity also be considered in the plant expansion for the Township.

Elizabethtown Alternative 2 has been demonstrated to be the most cost-effective alternative for developing additional conveyance and treatment capacity for the Township. Alternative 2 is recommended for implementation as a part of the 537 Plan. Alternative 2 will provide an increase in sewer treatment capacity from 404,000 gpd to 1,297,100 gpd.

Total estimated project costs for implementing Elizabethtown Alternative 2 are \$11,423,000. Included in the project costs is a contribution of \$4,499,000 in construction cost (\$6,498,800 project cost) to Elizabethtown Borough for upgrading of the treatment plant and an additional capacity of 893,100 gpd.

Table 30 provides a breakdown of projected flows from the Township into the various connection points with the Elizabethtown Borough and West Donegal Township sewer systems. Map 16 illustrates the proposed improvements to the MJTA system.

No collection sewer facilities are proposed as part of these costs. The proposed facilities are anticipated to provide additional conveyance capacity within the existing system service area. Extensions to the existing sewer service area will be constructed and paid for by development and proposed for dedication to MJTA. Any existing homes that will be provided with sewer service will occur as a result of developer extensions within 150 feet of the home.

It is recommended that MJTA negotiate with Elizabethtown Borough on a cost-sharing agreement for the Conoy Creek and Park interceptor. By proceeding on this project as a joint venture, it is estimated that MJTA will save over \$1,200,000 in construction costs over having to do the project themselves.

In the Mount Joy Borough service area, projected growth has been addressed through the existing service agreement with Mount Joy Borough. No further implementation is required in this area.

6.2 Recommended Non-Structural Alternatives

Public sewer service to other existing developed areas of the Township is not warranted at this time. The Milton Grove area, as evaluated in the plan, is not recommended for public sewer service due to a lack of justified need, the high cost of sewer service, and it would not be compatible with the Township comprehensive plan and zoning for an agricultural zoned non-growth area.

In order to continue to address wastewater management in areas of the Township that will not be served with public sewer, it is recommended that the Township promote OLDS education to homeowners. This would educate homeowners on the value of maintaining their septic systems and greatly reduce the potential for future system failures.

New development in the Township which utilize OLDS treatment is required as part of the Township subdivision and land development ordinance to test and preserve a replacement area on any proposed lot.

Due to the widespread conditions where high nitrates and limestone geology is present, it is recommended that the Township not allow a Component 1 module in areas of the Township where high nitrate ground water levels have been identified as indicated on Map 12. The Township should require preliminary hydrogeological analyses for all subdivisions proposing OLDS in these areas. Where appropriate, dispersion plume easements should be provided to mitigate increases in nitrate levels due to OLDS.

TABLE 30

**ELIZABETHTOWN ALTERNATIVE 2
PROPOSED CONNECTION POINT
CAPACITY ALLOCATIONS**

Connection Point	Location	Allocation	
		gpd ADF	gpd PDF
C1	E - Mill Road	0	0
C2	E - Highlawn Avenue	9,500	23,750
C3	E - Radio Road Metering Chamber	300,000	750,000
C4	E - Kiwanis Boulevard Metering Chamber	690,600	1,726,500
C5	E - Ridge Avenue	9,700	24,250
C6	E - Mount Joy Street	5,500	13,750
C7	E - Oak Manor Pump Station	4,500	11,250
C8	WD - West Donegal Metering Chamber	97,800	244,500
C9	WD - E. Harrisburg Ave. to Brett Blvd.	52,450	131,125
C10	WD - Brett Blvd. to Colebrook Road	3,900	9,750
C11	WD - Colebrook Road to Lime Street	1,900	4,750
C12	WD - Anchor Road to Route 230	43,350	108,375
C13 new	WD - West Donegal Interceptor Metering Chamber	<u>77,900</u>	<u>194,750</u>
Total Allocated Flow		1,297,100	3,242,750

REV. 10/09/98 w/Diversion of Area P to Schwanger Road Pump Station.

6.3 Financial Considerations

The proposed project and operating costs associated with the implementation of the proposed alternative represent a significant cost to MJTA. As a large portion of the costs are needed to service future development in growth areas of the Township, initially there will not be a sufficient number of users to finance these costs. As a result, it will be necessary for MJTA to arrange for long-term financing to spread the cost of the improvements out over a period of time.

A second source of funding is also necessary to secure an equity contribution from developers proposing to build in the Township in the next 5 to 10 years until the user base has increased to support the debt service. Provisions are allowed under the Act 209 Tapping Fee to allow an increase in capital contributions to the sewer system in anticipation of improvements proposed as part of a 5-year capital improvements plan.

The development of this 537 Plan is considered to meet the planning requirements of the Act for establishing a capital contribution to incorporate costs of improvements proposed by the 537 Plan. Capital contribution fees will be utilized by MJTA to meet debt service requirements during the initial years of operation.

MJTA has conducted several meetings with area developers planning to and presently committed to development in the Township. Based on the response from these meetings, it is anticipated that MJTA will be able to negotiate developer agreements to provide guarantees of developer contributions to meet debt service requirements.

As noted previously, it will be necessary to construct improvements to the treatment facilities, outfall and Conoy Creek and Park interceptors to take advantage of cost savings on an intermunicipal project level. In order to reduce initial costs until there is growth in the user base, MJTA may consider deferring some construction to the 5-year improvement plan, when that specific need is demonstrated due to development. For example, additional improvements to the WDTA system may be deferred as a result of the diversion of the Schwanger Road pump station to the new Park interceptor. The diversion will immediately create an availability of existing capacity in the WDTA system for MJTA areas that will continue to flow into the WDTA interceptor by gravity.

Another example would be the Radio Road pump station construction. The Township has existing capacity in the Conoy Creek interceptor at Radio Road. A pump station could be delayed until available capacity in the interceptor is utilized.

Table 31 presents an analysis of financial costs for implementation of Elizabethtown Alternative 2 based on the assumptions as we have noted here. Scenario 1 is based on limiting some of the initial improvements. Scenario 2 is based on completion of all the proposed improvements initially. O&M costs are estimated based on projected first year operation flows in 2002. Estimated developer contributions are conservatively estimated at a rate less than current rates and the projected growth rate. The tapping fee rate is also estimated less than the maximum rate depending on final rate determinations and costs. Financing is based on securing a public bond issue for 30 years.

TABLE 31

**MOUNT JOY TOWNSHIP 537 PLAN
WASTEWATER MANAGEMENT ALTERNATIVES
MJTA FINANCED IMPROVEMENTS FINANCIAL ANALYSIS
Based on Elizabethtown Alternative 2**

	Scenario 1	Scenario 2
Total Estimated Construction Cost	\$6,389,000.00	\$7,878,000.00
Construction Contingency, 10%	639,000.00	788,000.00
Estimated Non-Construction Costs, 35%	2,236,000.00	2,757,000.00
Total Estimated Project Cost	\$9,264,000.00	\$11,423,000.00
1999-2002 Developer Tapping Fees ⁽¹⁾	\$800,000.00	\$800,000.00
Tapping Fee Discount Purchase	0.00	0.00
Capital Contribution ⁽²⁾	750,000.00	750,000.00
Amount of New Construction to be Financed	\$7,714,000.00	\$9,873,000.00
Existing Debt Service	1,900,000.00	1,900,000.00
Total Amount to be Financed	\$9,614,000.00	\$11,773,000.00
Debt Service ⁽³⁾	\$688,000.00	\$842,000.00
Estimated Year 2002 Annual O&M Cost	430,000.00	430,000.00
Total Estimated Annual Cost	\$1,118,000.00	\$1,272,000.00
Connection Fee Revenue	\$320,000.00 ⁽⁴⁾	\$360,00.00 ⁽⁵⁾
Miscellaneous Revenue ⁽⁶⁾	35,000.00	35,000.00
Rental Fees	763,000.00	877,000.00
Total Estimated Revenue	\$1,118,000.00	\$1,272,000.00
Estimated Number of EDU's, 2002	1,870	1,870
Estimated Annual User Fee, \$/EDU/Year	\$408.00	\$469.00
Estimated Number of EDU's, Current	1,675	
Existing Annual User Fee, \$/EDU/Year	\$266.00	

Scenario 1 includes construction of WWTP, outfall, Conoy Creek interceptor, Schwanger Road pump station and Route 743 improvements.

Scenario 2 includes all project improvements.

(1) Based on 65 EDU's/year for three years (1999-2002).

(2) Estimated funds available from the Bond Redemption, Debt Reserve and Operating Funds.

(3) Based on 5%, 30 years with 10% coverage (0.06505).

(4) Assume 80 EDU's/year at \$4,000/EDU used toward debt principal payments.

(5) Assume 80 EDU's/year at \$4,500/EDU used toward debt principal payments.

(6) Administrative Fees, Lancaster County Solid Waste Management Authority income, interest, etc.

10/98

Because the project will primarily address new growth in the area, PENNVEST funding is not considered to be viable due to an anticipated low priority ranking. As a result, PENNVEST funding is not considered as part of this 537 Plan.

Based on the projected number of EDU's in 2002 and the proposed number of developer contributions, the estimated initial user fee is anticipated to range from \$480 to \$541 per year. In addition to the cost of expansion of conveyance and treatment capacity, the increase in user fees will also address the need to upgrade the existing treatment and conveyance interceptor facilities as part of the project that serve current users.

6.4 Growth Areas

Growth areas corresponding to areas that will be proposed for sewer service are shown on Map 13. Included on Map 14 is the UGB 5 and 10 year growth areas as an overlay on the Township zoning map. Public sewer service is proposed in residential, commercial and industrially zoned areas.

6.5 Consistency Analysis

The following consistency analysis was utilized during the preparation of this 537 Plan.

1. Consistency between the proposed alternative and the objectives and policies of the Clean Streams Law or Section 208 of the Clean Water Act.

Generally, the Clean Streams Law is intended to prevent further pollution and reclaim and restore a clean, unpolluted condition to every stream in Pennsylvania that is presently polluted; to allow no discharge of sewage, industrial waste, or any substance which contributes to pollution; and to review all related permit applications. The Clean Water Act directs a federal administrator to designate problem watersheds and have states prepare plans to improve them.

The preparation of the 537 Plan by Mount Joy Township is in response to state requirements for wastewater management planning as established by the Clean Water Act. The proposed alternative is intended to address the requirements of the Clean Water Act by providing a plan to address wastewater management of future growth to prevent the degradation of area groundwater.

The proposed plan provides a continued regional approach to wastewater management through the improvement and expansion of existing facilities. Treatment will be consistent with the Clean Water Act for discharge into the Susquehanna River.

The non-structural alternatives are intended to provide guidelines for managing sewage disposal, under the requirements of Chapter 71. Therefore, the non-structural alternatives are consistent with the Clean Water Act.

2. Consistency with municipal wasteload management plans developed under Chapter 94.

This regulation prevents overloaded facilities, limits their expansion (according to permitted plans), prevents the introduction of pollutants, untreatable wastes or substances which would interfere with their operations, and to improve the recycling and reclamation of wastewater sludge for municipalities.

The plan is consistent with Chapter 94 by providing a schedule to implement treatment plant improvements to relieve hydraulic overload conditions.

3. Consistency with plans developed under Title II of the Clean Water Act or Titles II and VI of the Water Quality Act of 1987.

This applies primarily to federal funding. The following items have been or will be addressed as required when the proposed plan is in the preliminary design stage. No federal funding for this project is anticipated to be available.

a. A demonstration that innovative and alternative (I/A) technologies have been evaluated.

The existing conveyance system already utilizes a gravity conveyance system with remote pump stations. The MJTA system also flows into existing gravity systems in Elizabethtown Borough and West Donegal Township. As the proposed plan only proposes expansion to the existing system and no extension construction by MJTA, I/A conveyance technology was not feasible for consideration.

The treatment plant evaluation performed by CDM considered I/A technology including use of sequencing batch reactor technology for treatment.

b. A demonstration that potential open space and recreational opportunities has been analyzed.

The proposed improvements will be located along existing right-of-ways, roads and utility sites to minimize impacts on open space areas. The Park interceptor construction is located within the Elizabethtown Borough linear park. Recreation opportunities will be preserved after construction of these improvements.

c. A demonstration of non-excessive infiltration and inflow (I/I) to existing sewers.

As part of the sewer moratorium response, the three municipalities have presented an implementation plan to DEP for I/I investigation and

d. A demonstration that the chosen alternative is the most cost effective and environmentally sound.

The 537 Plan includes detailed cost estimates, and the environmental characteristics of the proposed alternative will be controlled by applicable regulations.

e. Compliance with the National Environmental Policy Act

As identified in the plan and as part of the design process, coordination will be provided with PHMC, PNDI, and DEP to avoid adverse impact to the following:

- Historical and archeological sites
- Natural resources
- Endangered and protected species
- Fish and wildlife
- Prime agricultural land
- Wetlands
- Air quality
- Floodplains
- Water supplies

Based on correspondence from regulatory agencies presented in the Appendix and available site information, no significant adverse environmental impact is predicted that would prevent the project from further implementation into the design and permit application stages.

Prime agricultural soils are shown on Map 4. Most of these areas are located in the agricultural zoning district.

As part of the implementation process, it is anticipated that MJTA and Elizabethtown Borough will renegotiate the existing intermunicipal agreement for service. Presently, however, there is an existing sewer use ordinance and user charge system in place by MJTA.

4. Consistency with comprehensive plans developed under the Pennsylvania Municipalities Planning Code.

Comprehensive Plans for the County and Township were previously evaluated for this 537 Plan. Both the County and Township comprehensive plans envision public sewer service to the urban growth areas and commercial and industrial zoned areas of Mount Joy Township. Infrastructure will also plan for long-term development in residential zoned areas.

The 537 Plan reflects growth management policies expressed by the County and Township land use plans. Therefore, the proposed facilities are considered consistent with applicable comprehensive plans.

The policies and procedures of the non-structural recommendations support the Township's proposed structural alternative, as well as Chapter 71. Therefore, these recommendations are considered to be consistent.

5. Consistency with antidegradation requirements as contained in Chapters 93, 95, and 102 (relating to water quality standards; wastewater treatment requirements; and erosion control) and the Clean Water Act.

Chapter 93.5 through 93.8(a) regulates the uses and quality of discharges permitted according to a ranking of stream quality.

Chapter 95 sets the wastewater treatment requirements for each water quality designated in Chapter 93.

Chapter 102 mandates erosion control by setting requirements for earthmoving which could result in accelerated erosion and by establishing a permitting process for soil conservation practices to prevent sedimentation or pollution from fertilizers, pesticides or other harmful substances.

The Elizabethtown sewage treatment facility will be designed by the Borough to meet applicable construction and effluent standards. Compliance with these requirements will be demonstrated by submittal and approval of NPDES, Water Quality, and Erosion and Sedimentation Control Permit applications. Therefore, this alternative is consistent with the applicable requirements.

Non-structural recommendation consistency is not considered applicable.

6. Consistency with state water plans developed under the Water Resources Planning Act.

The Comprehensive Water Management Plan for the Lower Susquehanna Basin was previously discussed in this study.

The proposed sewer system involves providing service to existing population centers, and is therefore consistent with state water plans.

Non-structural recommendations consistency is not considered applicable.

7. Consistency with Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W (relating to prime agricultural land policy).

Some areas of prime agricultural land are potentially impacted by the future extension of sewers by development. However, these areas have been designated for growth by zoning. The Township's prime agricultural land protection policy protects the large areas of agricultural land located east of Route 283. No sewer service has been proposed in this area.

In as much as the proposed improvements are intended to serve growth in areas zoned for development in the Township, the 537 Plan is generally consistent with prime agricultural land policy.

Non-structural recommendations consistency is not considered applicable.

8. Consistency with plans adopted by the County and approved by DEP under the Stormwater Management Act.

Lancaster County has no County-wide stormwater management plan. All development in the County is required to meet locally oriented stormwater management plans. Mount Joy

Township has its own stormwater management requirements as part of its subdivision and land development ordinance. Therefore, this provision is not applicable.

9. Consistency with wetland protection under Chapter 105 (relating to dam safety and waterway management).

Map 3 shows wetland locations.

Construction of conveyance sewer lines will primarily be located in streets or in shoulder areas and will not typically involve wetlands. Where a stream crossing or stream bed location is required, applicable regulations will be followed to minimize temporary impacts and result in no net loss of wetlands. Therefore, the proposed alternative is compatible with wetland protection policies.

Non-structural recommendations consistency is not considered applicable.

10. Consistency with the protection of rare, endangered, or threatened plant and animal species as identified by PNDI.

A request was made to the DEP Bureau of Forestry on September 2, 1998 for comments regarding the potential presence of any rare, endangered or threatened plants or animal species in the proposed project area. A response was received from the Bureau on September 17, 1998 from Jeanne Brennan which indicated that a potential endangered plant species in Helt's Woods. The correspondence recommended that a field survey be conducted prior to any earth disturbance. This activity will be conducted during the design phase to be consistent with these requirements.

11. Consistency with Section 507 of Title 37 of the Pennsylvania Consolidated Statutes (relating to cooperation by public officials with PHMC).

This section requires public officials to cooperate with PHMC's Bureau of Historic Preservation by notifying PHMC of any project, activity or program which affects or may affect an archeological site, and empowering PHMC to require a survey or other investigation to recover, preserve or otherwise protect information from the archaeological resource.

The Township has complied to date with the requirements and notified PHMC. MJTA intends to continue to cooperate with PHMC during the development of the design and preliminary investigation. Refer to Appendix 5 for correspondence with PHMC.

MJTA will coordinate their program with all applicable agencies as required by law. Therefore, all proposals and alternatives are compatible with this provision.

12. The resolution of inconsistencies identified in this section.

Any inconsistencies identified in this section have or will be resolved through implementation of the proposed project in accordance with current regulations for permitting and construction of the proposed wastewater facilities.

CHAPTER 7



CHAPTER 7

PLAN IMPLEMENTATION

7.1 Implementation Schedule

The Selected Alternative presumes local financing and developer contributions over a 20-year period. The Selected Alternative will be the primary activity to provide wastewater management for new growth in the Township. The Selected Non-Structural Alternative policies and programs will be utilized for maintenance of existing on-lot systems.

Mount Joy Township has a full-time manager and clerical staff, as well as contract engineering and sewage enforcement services on an as-needed basis. The Mount Joy Township Authority will primarily be responsible for implementation of the structural alternative with respect to improvements in Mount Joy Township. MJTA will enter into agreements with West Donegal Township Authority and Elizabethtown Borough for cost sharing and expansion of their facilities to handle the projected flows.

As a result of review of the 1997 Borough Chapter 94 report, DEP has required the three municipalities to develop an implementation schedule for addressing hydraulic overloads at the treatment plant. An implementation schedule was developed to address steps necessary to complete expansion of the treatment plant, outfall and main interceptor. This schedule has been submitted to the DEP for approval. This schedule has been reproduced as Table 32 for this 537 Plan.

The Implementation Schedule represents the intent of the Board of Supervisors of Mount Joy Township based on a timely review and approval of this 537 Plan, regulatory approvals for construction and completion of 537 planning in West Donegal Township and Elizabethtown Borough.

Ordinances and Programs for Outlying Areas

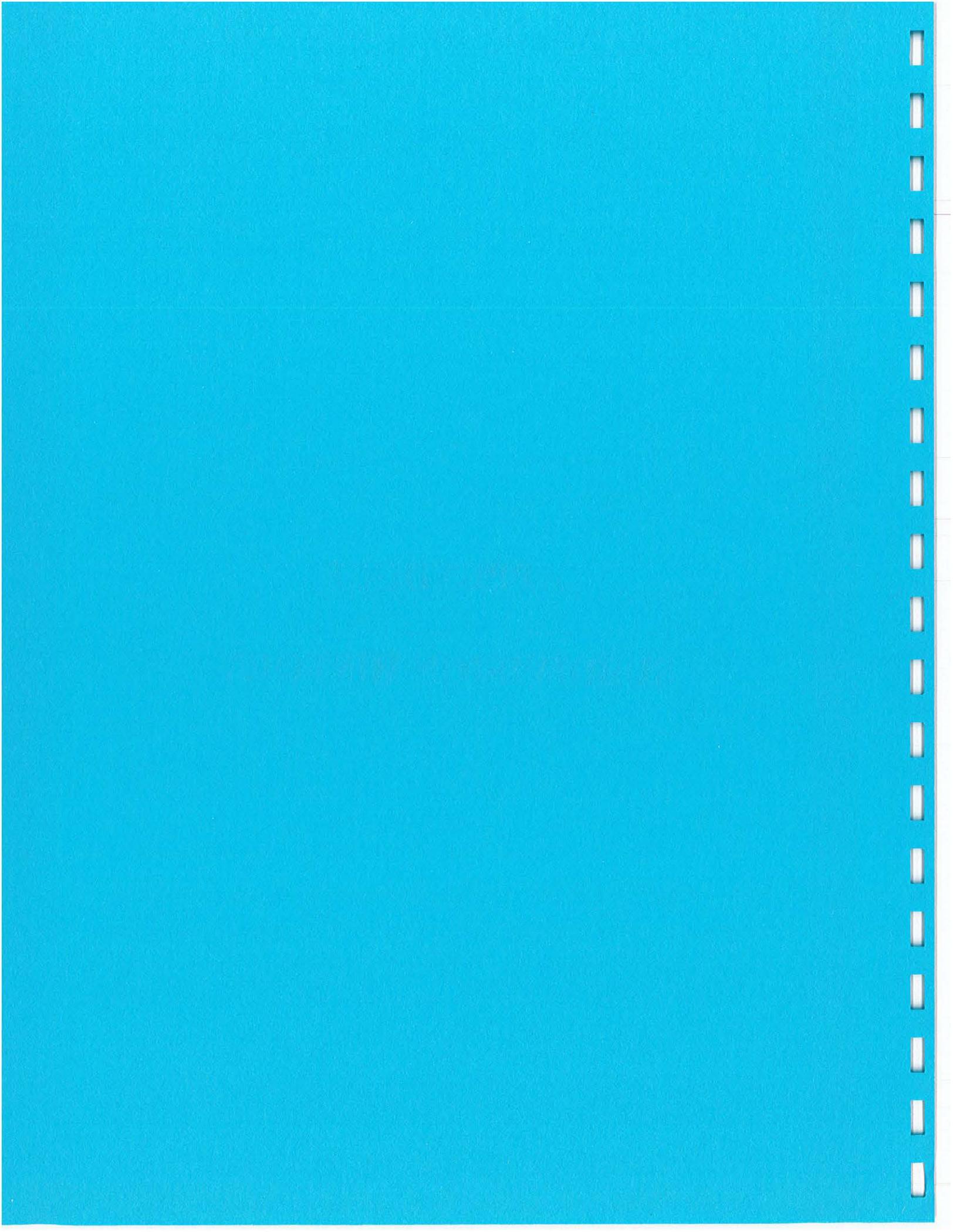
Ordinance Requiring Hydrogeologic Testing	Within 6 months of approval of 537 Plan
Education Management Program for Private On-Lot Systems	Within 24 months of approval of 537 Plan

APPENDIECES



APPENDIX 1

SUBDIVISION HISTORY



SUBDIVISION LOG

MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
1	2/1/88	Achenbach	2	Trail Rd	
2	2/11/77	Allen, Harold/Mariana	2	Sheaffer Rd	LC File
3	6/13/74	Allen, Harold/Mariana	2	Sheaffer Rd	
4	10/17/74	Allen, Harold/Maria	3	Campus Rd	
5	5/10/79	Allen, Harold/Maria	2	E Hbg Ave	
6	9/11/91	Aspen Estates	1	E Hbg Ave	
7	11/21/86	Bailey, Charles/Edn	1	Mill Rd	3-36942-061-1
8	5/19/92	Balmer, Mary Jane	1	Valley View Rd	3-36942-172-1
9	12/17/94	Baltozer, MaryAnn	2	Cloverleaf Rd	
10	8/28/79	Bathurst, Ira	1	Milton Grove Rd	
11	7/12/76	Baum's Bologna	1	Ridgeview Rd	
12	5/20/81	Becker, Charles	1	Rt 743	
13	10/31/88	Becker, Charles/Be	3	Cloverleaf Rd	P3-36942-099-1
14	2/13/91	Becker, Robin	2	Mill Rd	3-36942-158-1
15	10/17/73	Blough, Harry/Paul	4	743&Beverly	
16	9/12/91	Boll Electric	1	Mt Pleasant Rd	M3-36942-162-2
17	2/22/74	Bookwalter, Robert	2	Cloverleaf Rd	LC File
18	12/31/84	Bookwalter, Robert	2	Orchard Rd	3-36942-033
19	8/1/79	Brandt, Abner/Mart	1	Church Rd	
20	8/23/76	Brandt, Carl	1	Creek Rd	LC File
21	3/17/75	Brandt, Harold	3	Milton Grove Rd	LC File
22	9/27/91	Brandt, Robt/Anna	2	E-town Rd	
23	10/3/89	BRE Associates	1	Harvest Rd	P3-36942-080-III
24	4/9/81	Breneman, Norman	1	E-town Rd	
25	10/17/77	Breneman, Norman/Grace	1	E-town Rd	
26	7/17/85	Breneman, Norman/Grace	1	Harvest Rd	
27	4/4/68	Bricker/Earhart	8	Mt Pleasant Rd	
28	9/23/75	Broderick, Robert	8	Hereford/Greentree Rd	LC File
29	9/16/76	Brown, Catharine	2	Parkview Dr	LC File
30	10/31/83	Brown/Dupler/Sweigart	2	Creek Rd	3-36942-020
31	4/3/80	Brown, Harold/Carrol	1	E-town Rd	
32	11/27/72	Brown, Ken	1	Church Rd	
33	4/17/91	Brubaker, David/Lucina	1	Milton Grove Rd	3-36942-167-1
34	5/16/91	Brubaker, Doris	1	Ridge Run Rd	3-36942-140-1
35	11/28/72	Brubaker, Menno/Anna	1	Mt Gretna Rd	
36	10/17/74	Brubaker, Robert/Mary	2	Mt Gretna Rd	LC File
37	12/17/74	Brubaker, Robert/Mary	1	Mt Gretna Rd	LC File
38	3/21/74	Brubaker, Robert/Mary	2	Mt Gretna Rd	
39	4/10/80	Burkhart, John	3	Rt 230	LC File
40	3/11/81	Burkhart, Hohn	4	Jontyn Dr	3-36942-004
41	7/19/71	Campus Heights	6	Campus/Sheaffer Rd	
42	2/1/71	Campus Heights	8	Campus Rd	
43	6/5/72	Campus Heights	9	Sheaffer Rd	
44	8/7/84	Campus View Apts	1	Campus/Ridge Rd	3-36942-027
45	6/6/84	Cannon, Eugene/Fonda	2	Cloverleaf Rd	
45	1/2/81	Cannon, Eugene/Fonda	2	Cloverleaf Rd	
46	12/16/76	Cartle & Risser	2	Mt Gretna Rd	
47	12/26/78	Car-Wil Partnership	5	Hereford Rd	LC File
48	10/19/71	Cassel, Virginia	1	Cassell Rd	
49	10/26/77	Christ, Willis/Bianche	1	E-town Rd	
50	10/26/77	Christ, Willis/Bianche	3	E-town Rd	LC File
51	11/2/86	Cloverleaf Station	10	Cloverleaf Rd	3-36942-059-IV
52	5/21/87	Cloverleaf Station	82	Cloverleaf to Ridge Run Rd	
53	7/18/80	Coble, Willis/Katie	2	Mill Rd	
54	1/4/72	College View	4	Ridge Run	
55	9/19/79	Collins, Paul/Jean	1	Mt Gretna Rd	
56	6/18/91	Coviello, Joseph	2	Campus Rd	M3-36942-163-3
57	8/19/80	Coviello, Joseph/Pat	1	Schwanger Rd	3-36942-001
58	7/16/68	Crescent Brae	9	E Hbg Ave	
59	10/21/91	CR's Friendly Market	1	Rt 230	reuse exist public s

MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
60	7/2/86	Crowe, Charles/Marg	3	Radio Rd	
61	10/17/91	DAS Distributors, Inc.	1	Mill Road	no module till later
62	6/12/91	Davis, Sam	2	Cloverleaf Rd	3-36942-164-1
63	11/18/75	Dohner, Leonard/Louise	1	Cloverleaf Rd	LC File
64	1/14/81	Dohner, Leonard/Louise	1	Cloverleaf	
65	11/9/92	Dohner, Tim	3	Cloverleaf Rd	M3-36942-168-2
66	6/11/86	Earhart, Janet	2	Old Hershey Rd	3-36942-056
67	4/3/91	Earhart, Paul Jr/Beverly	2	Mt Pleasant Rd	3-36942-152-1
68	3/9/82	Earhart, Paul Jr/Beverly	2	Mt Pleasant Rd	3-36942-009
69	5/1/87	Earhart, Paul Jr/Beverly	2	Mt Pleasant Rd	3-36942-063III
70	10/25/74	Ebersole, John	1	Cold Spring Rd	
71	10/16/85	Ebersole, Steven/Teresa	1	Ridge Rd	3-36942-044
72	2/2/79	Eberts, Paul/Arlene	1	Mt Gretna Rd	LC File
73	4/12/73	Eby, Arthur	2	Cloverleaf Rd	
74	7/14/75	Eby, George	3	Ridge Rd	
74	6/20/80	Eby, George	3	Ridge/Sheaffer Rd	
75	11/9/72	Eby, George Jr. Maude	1	Ridge Rd	
76	8/2/73	Eckroth, Alfred Jr/Ruth	1	Campus Rd	
77	10/3/90	Enck, Robert	2	Hershey Rd	3-36942-150-1
78	2/15/91	English, John Jr	2	Mt Gretna Rd	
79	11/1/87	Erb, Richard/Grace	1	Jonlyn Dr	
80	12/21/88	Esbenshade, Faith Bible	1	Hbg Ave	P3-36942-102-II
81	6/4/90	Esbenshade, J Ross/Stella	1	Hbg Ave	
82	7/19/83	Eshelman, John	1	Grand View Rd	3-36942-018
83	1/20/89	Eshelman, J Kenneth	2	Bellaire Rd	
84	5/23/73	Eshelman, Kenneth/Melva	6	Cloverleaf Rd	LC File
85	1/22/80	Eshelman, Kenneth/Melva	1	Cloverleaf Rd	LC File
86	6/4/80	Eshelman, Kenneth/Melva	1	Cloverleaf Rd	LC File
85	8/1/79	Eshelman, K & Mull, Robert/Mart	4	Cloverleaf Rd	
87	6/4/76	Evans, Robert/Marie	5	Milton Grove Rd	
88	8/2/88	Fellenbaum Subdivision	1	Plum/Pleasure Rd	P3-36942-101-I
89	11/26/85	Fink, Rodney/Lois	2	Hillside Rd	
90	8/1/79	Fink, Rodney/Lois	1	Hillside Rd	
91	5/16/77	Fink, Kense/Ruth	3	Trail Rd	LC File
91	8/28/79	Fink, Kense/Ruth	2	Trail Rd	LC File
92	3/8/90	Fisher, Jacob/Sadie	3	Country Squire Rd	3-36942-120-1
93	3/8/90	Fisher, Jacob/Sadie	1	Oberholtzer Rd	
94	6/14/77	Forry, Jacob	4	Quarry Rd	
95	10/30/78	Forry, Jacob/Miriam	1	Milton Grove Rd	
96	6/7/91	Foxbury Phase 5	25	Cliff Lane	P3-36942-042
97	9/28/92	Foxbury V Lot #6	1	Cliff Lane	
98	2/1/84	Carl/Lois Frey, Herbert Jr&Sara	2	Schwanger/Mt Pleasant Rd	3-36942-022
99	9/25/81	Frey, Carl/Lois, Myers, Herber	2	Mt Pleasant Rd	3-36942-006
100	9/14/83	Fry, M Franklin/Helen	1	Cassel Rd	
101	3/12/86	Funk, Lawrence/Virginia	2	Cloverleaf Rd	3-36942-053
102	11/17/78	Fusselman, David/Paulette	2	Hereford Rd	LC File
103	5/16/75	Gantz, Blaine E Jr	2	Greentree Rd	LC File
104	2/6/85	Gantz, Blaine E Jr	3	Greentree Rd	3-36942-034
105	5/18/76	Gantz, Robert/Janice	1	Orchard Rd	LC File
106	1/24/79	Gantz, Robert/Janice	1	Orchard Rd	LC File
107	10/16/72	Garber, John	1	Cloverleaf Rd	
108	5/17/91	Garber, John/Katherine	2	Harvest Rd	3-36942-166-1
109	10/2/87	Garber, John/Katherine	2	Trail Rd	3-36940-079-1
110	5/23/85	Gebhard, Jeffrey/Barbara	2	Creek Rd	3-36942-039
111	2/21/75	Geib, Orville/AnnaMarie	1	Creek Rd	
112	5/9/83	Gibble, Emmert/Eiva	1	Mt Gretna Rd	
113	11/22/71	Gibble, John/Ella	2	E-town Rd	
114	12/8/71	Gibble, John/Ella	1	Trail Rd	
115	3/17/72	Gibble, John/Ella	1	E-town Rd	
116	1/11/78	Gibble, John/Ella	1	Trail Rd	

MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
117	4/18/77	Ginder, Carl/Ruth	2	Prospect Rd	LC File
118	9/16/87	Ginder, Homer	2	Sunnyburn Rd	3-36942-083-I
119	6/13/73	Ginder, Homer/Annie	1	Sunnyburn Rd	
120	6/10/71	Ginder, Ralph/Margaret	1	Cloverleaf Rd	LC File
121	9/13/79	Ginder, Ralph/Margaret	2	Cloverleaf Rd	
122	7/26/77	Givens, Alvin/Bernice	2	Schwanger Rd	
123	9/26/80	Givens, Alvin/Bernice	1	Schwanger Rd	
124	7/19/72	Gohn, Ralph	1	Fairview St	
125	7/19/72	Good, Clayton	1	Cloverleaf Rd	
126	6/15/81	Grace Brethren Church, E-town	1	Anchor Rd	
127	9/15/80	Graham, Doris	1	Meadowbrook Ln	
128	4/16/85	Graham, Harry/Doris	1	Sheaffer Rd	
129	4/4/85	Graham, Harry/Doris	2	College Ave	
130	8/9/82	Graham, Harry/Doris	1	Sheaffer Rd	
131	9/21/71	Grand View Heights	5	Mt Pleasant/Snyder Rd	
132	3/26/70	Green Acres	6	Clover Ln/Sheaffer Rd	
133	1/8/69	Green Acres	1	Sheaffer Rd	
134	4/27/64	Green Acres	2	College Ave	
135	10/30/64	Green Acres	5	Meadowbrook Ln	
136	9/12/72	Green, D Paul	1	Campus Rd	
137	4/23/73	Greenly, Kenneth/Amelia	2	Oberholtzer Rd	
138	6/17/87	Greiger, Pete	3	Ridge Rd	
139	3/11/88	Greiner, Franklin Jr	1	Steelway Dr	
140	11/3/89	Greiner, Franklin Jr	1	Steelway Dr	
141	7/29/75	Greiner, J Henry	1	Cloverleaf Rd	LC File
142	8/25/89	Grosh, John	1	Bellaire Rd	P3-36942-112-I
143	12/8/82	Grossnickle, Thurman/Erma	1	Mt Gretna Rd	
144	8/1/89	Hackman, Dennis/Marsha	2	Country Squire Rd	3-36942-113I
145	2/25/86	Hackman, Gerald	4	E-town Rd	3-36942-046
146	5/7/71	Hackman, Minerva	5	Ridge Rd	
147	4/13/71	Hackman, Minerva	1	Ridge Rd	
148	12/14/90	Hackman, Gerry	2	Sheaffer Rd	P3-36942-118-II
149	8/23/72	Hackman, Willis	3	Ridge Rd	
150	4/27/71	Hackman, Willis	1	Ridge Rd	
151	6/8/70	Hackman, Willis	1	Sheaffer Rd	
152	1/6/82	Hackman, Willis/Mary	1	Sheaffer Rd	
153	8/31/90	Haldeman, Joanne	2	Milton Grove Rd	3-36942-146-I
153	8/31/90	Haldeman, Joanne	2	Milton Grove Rd	
154	7/21/77	Halk, Bruce/Dot	1	Country Squire Rd	LC File
155	11/14/74	Harvold, Ray/Lois	1	Greentree Rd	
156	10/30/78	Heckert, Earl/Mary	1	Rt 230	
157	9/1/72	Heffley, Ronald	1	Rissermill Rd	
158	9/24/72	Heisey, Daniel M	4	Rissermill/Valleyview Rd	LC File
159	9/19/79	Heisey, Daniel M	1	Rissermill Rd	3-36942-011
160	10/6/86	Heisey, Daniel M	1	Valleyview Rd	3-36942-057-III
161	6/12/91	Heisey, Musser/ Miriam	4	Valleyview Rd	3-36942-155-I
162	7/21/77	Heisey, Melvin/Verna	5	Ridge Rd	LC File
163	7/1/91	Heisey, Miriam	2	Rissermill Rd	3-36942-156
164	4/15/74	Heistand Brothers	1	Cloverleaf Rd	
165	4/15/74	Heistand Brothers	2	Cloverleaf Rd	
166	4/6/78	Heistand, David/Mary	1	Cloverleaf Rd	
167	8/22/79	Heistand, Ira/Barbara	1	Quarry Rd	
168	3/9/92	Heller, CG	1	Ridge Rd	
169	6/16/75	Henry, Paul III	4	Creek Rd	LC File
170	8/14/78	Henry, Paul III	1	Creek Rd	
171	5/11/87	Hernley, Ephraim/Mabel	1	Rt 230	LC File
172	4/18/76	Hernley, Ephraim/Mable	2	Rt 230	LC File
173	3/8/78	Hernley, Ephraim/Mable	1	Rt 230	LC File
174	4/10/80	Hernley, Ephraim/Mable	2	Rt 230	LC File
175	5/25/79	Ephraim, Mable/Hernley	1	Rt 230	LC File

MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
176	5/3/67	Hernley, Paul	1	Sheaffer Rd	
177	2/14/78	Hershey, Richard	33	Milton Grove Rd	LC File
178	12/24/75	Hess, Claude	8	Creek Rd	LC File
179	12/9/77	Hess, Ezra/Martha	1	Snyder Rd	
180	5/16/84	Hess, Richard	1	Grandview Rd	
181	12/1/77	Hess, Richard/Linda	1	Grandview Rd	LC File
182	8/3/79	Hess, Richard/Linda	8	Grandview Rd	
183	9/9/77	Hess, Richard/Linda	5	Grandview Rd	
184	8/3/79	Hess, Richard/Linda	22	Grandview Rd	
185	8/3/79	Hess, Richard/Linda	7	Grandview Rd	
186	6/30/88	Hickory Run	36	Hickory Run	P3-36942-076-IV
187	11/6/89	Hiestand, John/Phyllis	2	Mt Gretna Rd	
188	7/1/83	High, Herbert/Joanne	2	Radio Rd	
189	2/6/86	Hilsher, Paul/Verna	1	Campus Rd	
190	6/23/88	Hoffer, Kevin/Ruth Ann	7	Old Hershey Rd	
191	11/18/71	Hoffer, Samuel	2	Rt 230	
192	9/22/75	Hogan, Barry	6	Creek Rd	LC File
	11/1/89	Hiestand, Nevin	4	Rt 230	P3-36803-021-II
193	7/24/74	Hogan, Barry	2	Church Rd	LC File
194	9/18/74	Hogan, Barry	2	Church Rd	
195	8/5/80	Hollinger, Abner	2	Church Rd	
196	9/25/73	Hoover, Elmer/Edna	2	Rt 230	
197	7/16/74	Hoover, Elmer/Edna	2	Rt 230	
198	6/28/78	Hoover, Harlan	1	Rt 230	
199	5/8/85	Hoover, Harlan	1	Rt 230	3-36942-031
200	10/17/87	Hoover, Harlan	4	Schwanger Rd	3675403
201	3/10/86	Hoover, Harlan	8	Schwanger Rd	
202	11/17/72	Hoover, Herbert	1	Parkview Dr	LC File
203	4/19/73	Hoover, Herbert	2	Cloverleaf Rd	
203	7/23/73	Hoover, Herbert	3	Cloverleaf Rd	
204	1/19/76	Hoover, Herbert	6	off of Cloverleaf Rd	
205	8/10/78	Hoover, Herbert	7	Parkview Dr	
206	10/31/72	Hoover, Robert	3	N Hanover St	
207	6/3/86	Hoover, Robert A/Elizabeth	2	Old Hershey Rd	LC File
208	5/20/76	Hoover, Robert A/Elizabeth	1	N Hanover St	
209	5/8/85	Hoover, Robert A/Elizabeth	1	N Hanover St	3-36942-043
210	5/11/89	Horst & Huffman	1	Rt 230	P3-36942-103-II
211	5/21/91	Hostetter, Jeffrey	6	Ridge Rd	3-36942-165-1
212	8/30/79	Hostetter, Joseph/Arlene	7	Campus Rd	LC File
213	11/14/77	Hostetter, Robert/Myrtle	4	N Milton Grove Rd	LC File
214	1/17/89	H&S Excavating	1	Cloverleaf Rd	
215	12/28/89	H&S Excavating	9	Schwanger Rd	P3-36942-110-II
216	8/17/72	Hummer Heights	3	Ridge Rd	
217	6/14/90	Ironstone Manor, Inc	53	Ironstone Dr	P3-36942-093-IV
218	5/2/79	Johnson, Robert/June	2	Rt 230	
219	2/5/65	Kautz Heights	8	Radio Rd	
220	7/20/64	Kautz Heights	1	Mt Gretna Rd	
221	4/4/85	Kaylor, Robert/Ruth	2	Radio Rd	
222	10/17/79	Keener, Harold/Mary	1	Schwanger/Orchard Rd	LC File
223	4/13/76	Keener, Harold/Mary	2	Schwanger Rd	LC File
224	4/9/75	Keener, Harold/Mary	4	Orchard Rd	LC File
225	9/14/86	Keener, Clifford/Shir	2	Cloverleaf Rd	
226	11/2/87	Keiper, Helen	2	Schwanger	P3-36942-082-II
227	11/16/88	Kelchner, Robert	3	Trail Rd	P3-36942-100-I
228	7/1/71	Kellam, Sidney	1	Rt 230	
229	12/3/86	Keller, Stephen	1	Manheim Rd/Mt Joy	
230	9/12/91	Ketterline Builder	2	Mt Gretna Rd	
231	12/1/90	Kinsey's Archery	1	Steelway Dr	
232	7/16/91	Jim Kinsey	2	Hereford Rd	3-36942-153-I
233	8/13/75	Kirchoff, Robert	5	Creek/Hilltop Rd	

MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
234	10/17/77	Kline, Jacob	2	Rissermill Rd	
235	1/2/81	Kline, Jacob	2	Rissermill Rd	
236	1/24/64	Kling, Harold	1	Ridge Rd	
237	12/17/74	Kopp, Roy/Alma	2	Mt Pleasant Rd	LC File
238	3/1/72	Koser, David Jr	5	Koser Rd	
239	6/6/62	Koser, David Jr	4	Koser Rd	
240	12/1/89	Koser, Joel/Nancy	3	Trail Rd	P3-36942-111-III
241	5/24/72	Jones & Zink, Inc	22	Hampden Rd	
242	1/8/91	Kreider, Charles	1	Grandview Rd	
243	1/2/79	Kreider, Donald	2	Mt Gretna Rd	
244	7/17/73	Kreider, John/Henry, Roy Peterma	1	Rt 230/Hbg Pike	LC File
245	8/24/78	Kreider, John/Henry, Roy Peterma	3	Rt 230/Hbg Pike	
246	4/17/74	Kreider, Kenneth	1	Spring Rd	
247	7/5/79	Kreider, Ken/Carol	1	Sheaffer Rd	LC File
248	1/5/88	Kreider, Ken/Carol	1	Sheaffer Rd	
249	4/17/74	Kreider, Ken/Paul M Grubb	3	Ridge Rd	
250	6/8/72	Kreider, Ken/Paul M Grubb	1	Sheaffer Rd	
251	8/19/75	Kulp, Cloyd	1	Hilltop Rd	LC File
	5/22/86	Lakeview Mobile Home Park	37	Mill Rd	3-36942-054
252	5/22/86	Lakeview Mobile Home Park	1	Mill Rd	3-36942-015
253	10/8/82	Lamontague, Robert/Virginia	2	Sheaffer Rd	
254	2/27/80	Landvater, Richard/Jean	2	Mt Gretna Rd	
255	5/8/85	Leaser, Joseph/Elizabeth	1	Milton Grove Rd	3-36942-038
256	10/2/90	Lebanon National Bank	1	Rt 230	
257	5/16/77	Lehman Community	5	Hilltop Rd	LC File
258	12/2/85	Lehman, Eldon	1	Church Rd	3-36942-049
259	11/22/85	Liskey, John/Genevieve	1	Sheaffer Rd	3-36942-025
260	4/19/84	Hawthorne, David/Fick, Paul	1	Aberdeen Rd	
261	12/27/72	Longenecker, Marlin	1	Schwanger Rd	
262	2/18/77	Longenecker, Victor	2	Ridge Rd	
263	6/26/79	Marchiori, Michael/Jo Ann	1	Trail Rd	LC File
264	1/16/86	Martin, Glenn/Mildred	1	Wissler Ln	
265	4/20/92	Martin, Earl Jr/Helen	1	Orchard Rd	3-36942-177-1
266	12/23/76	Martin, John/Mary	2	Old E-town Rd	LC File
267	10/11/78	Martin, Mervin/Mary	1	Meadow Rd	
268	6/21/81	Martin, Russel/Louise	2	Ridgeview Rd	P3-36942-104-I
269	5/8/85	Masterson, William/Laura	2	Trail Rd	3-36942-036
270	2/25/83	McKain, Joseph/Jean	3	Bellaire Rd	3-36942-017
271	1/9/89	McKinne, Thomas	1	Valleyview Rd	
272	7/17/85	Messick, Betty	2	Merts Dr	
273	12/8/89	Messick, Ken/Robert	1	Merts Dr	
274	7/16/80	Miller, Richard/Reba	3	Rt 230	
275	5/24/84	Miller, David/Stella	1	Miller Rd	
276	6/11/62	Miller, Jacob R Tract	12	Oberholtzer Rd	
277	8/10/90	Miller, Lloyd/Dorothy	1	E-town Rd	
278	4/24/72	Miller, Roy/Helen	1	Old Hershey Rd	
279	11/29/89	Miller Subdivision	3	Old Hershey Rd	3-36942-097-I
280	4/17/84	Miller, William J	1	Schwanger Rd	3-36942-029
281	12/15/87	Milton Grove School	1	Cloverleaf Rd	
282	8/8/75	Morris, Eugene	1	Radio Rd	
283	9/27/88	Mt Calvary Church	7	Old Hershey Rd	
284	1/7/75	Mt Cemetery Association	1	Terrace Ave	
285	1/27/82	Mt Joy Sportsmen Association	1	Sportsman Rd	
286	6/5/92	Mt Pleasant Brethren Church	1	Mt Pleasant Rd	
287	10/19/76	M.R. Poultry, Inc	1	Harvest Rd	
288	6/2/82	M.R. Poultry, Inc	1	Harvest Rd	3-36942-008
289	7/1/71	Mumaw, Jesse	2	Cloverleaf Rd	
290	10/9/81	Mumma, Stanley/Miriam	1	Anchor Rd	
291	1/15/86	Mummau, James	2	Rt 230	LC File
292	6/14/79	Mummau, James	2	Rt 230	DER Letter in file

MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
293	4/30/84	Mummau, James	2	Rt 230	LC File
294	5/16/75	Mummau, Jay/Marily	1	Stauffer Rd	LC File
295	9/16/76	Mummau, Jay/Marily	8	Stauffer Rd	
296	10/27/86	Mummau, Owen/Iva	5	Mt Pleasant Rd	3-36942-066-I
297	11/16/87	Mummau, Paul/Minnie	2	Cloverleaf Rd	
298	5/6/81	Mummau, Paul/Minnie	1	Parkview Dr	
299	7/31/78	Mummau, Reist/Ruth	1	Cloverleaf Rd	LC File
300	8/31/78	Mummau, Reist/Ruth	1	Miller Rd	
301	7/13/76	Mummau, Reist/Ruth	1	Schwanger Rd	
302	4/28/87	Musser, Harold	1	Greentree Rd	3-36942-119-I
303	7/14/89	Musser, Harold	2	Greentree Rd	3-36942-094-IV
304	4/28/87	Musser, Harold/Judith	4	E-town Rd	3-36942-072-I
305	8/6/90	Musser, Harold/Judith	10	Ridge Rd	3-36942-124-I
305	8/6/90	Musser, Harold/Judith	10	Ridge Rd	P3-36942-095-III
306	9/10/87	Musser, Harold/Judith	1	E-town Rd	3-36942-073-I
307	4/27/92	Musser, Ralph/Virginia	1	Ridge Rd	P3-36942-075-III
308	8/23/76	Musser, Ralph/Virginia	1	Hereford Rd	LC File
309	8/9/93	Myer, Richard	1	Rissermill Rd	3-36942-019
310	9/10/90	Myer, Richard	1	Rissermill Rd	3-36942-142-II
311	2/15/74	Myer, Samuel/Sara	1	Oberholtzer Rd	LC File
312	3/27/79	Myer, Samuel/Sara	2	Oberholtzer Rd	LC File
313	12/20/78	Myer, Samuel/Sara	2	Oberholtzer Rd	LC File
314	12/20/78	Myer, Samuel/Sara	3	Oberholtzer Rd	LC File
315	8/21/79	Newgard, Raymond/Vera	3	Ridge/Greentree Rd	LC File
316	4/15/86	Nissley, John Sbdv	4	E-town/Ridgeview Rd	3-36942-041
317	10/16/87	Nissley, Verna	1	Aberdeen Rd	3-36942-085-I
318	9/5/80	Norfanco Devel Corp	1	Fairview Rd	
319	6/16/77	North View Estates	17	Hilltop Circle	LC File
320	7/26/78	North View Estates	21	Snyder Dr	
321	3/8/78	Oberholtzer, Glenn/Helen	1	Rissermill Rd	
322	10/2/84	Oberholtzer, Glenn/Helen	1	Milton Grove Rd	LC File
323	8/5/83	Olweiler, Philip/Jacob	4	Orchard Rd	3-36942-035
324	10/17/86	Olweiler, Philip/Jacob	27	Deerfield Rd	3-36942-035
325	4/18/84	Peifer Brothers	2	Cloverleaf Rd	3-36942-023
326	11/28/84	Penn Broadcasting Corp	2	Radio Rd	
327	2/26/88	P&E Devel Co Inc	21	Midland Circle	3-36942-052
328	9/13/79	Penn Central Corp	1	Mt Gretna Rd	
329	10/7/87	Pennington, Robert/Joanne	1	Rt 230	
330	10/18/74	Perkins, Dewey	1	Orchard Rd	
331	7/10/86	Pfaunmiller, Anna	2	Sheaffer Rd	
332	11/9/79	Pfaunmiller & Snyder	6	Campus/Sheaffer Rd	LC File
333	11/23/83	Pursel, Delores	1	Ridgeview Rd	
334	4/1/91	Radio Rd Townhouses	6	Radio Rd	
335	2/6/90	Radio Rd Townhouses/Steven S	6	Radio Rd	P3-36942-117-II
336	6/19/90	Radio Station	2	Radio Rd	
337	9/22/89	Reed, Frank/Lois	2	E-town Rd	P3-36942-106-III
338	3/22/79	Reed, Frank/Lois	1	E-town Rd	
339	6/19/73	Reinhold, Leroy/Frances	1	Mt Pleasant Rd	
340	1/30/73	Ridgeview Devel	4	Ridgeview Rd	LC File
341	6/1/73	Ridgeview Devel	2	Sheaffer Rd	LC File
342	5/16/77	Ridgeview Devel	13	S Ridgeview Rd	LC File
343	3/16/87	Rineer, Rickie	1	Rt 230	
344	5/16/75	Risser, Harry/Sarah Carlisle	4	N Milton Grove Rd	LC File
345	3/17/75	Risser, Harry/Sarah Carlisle	1	Trail Rd	
346	10/29/92	Risser, Lester/Leah	2	Prospect Rd	3-36942-175-I
347	7/31/92	Rockwood - Phase I	38	Old Hershey Rd	P3-36942-126-IV
348	6/21/77	Roth, Robert/Shirley	2	Old Hershey Rd	
349	5/10/90	Saje, Josef/Hiltrud	2	Church Rd	3-36942-130-I
350	5/19/71	Sarver, Mary	1	Snyder Rd	
351	10/25/72	Sarver, Mary	1	Rt 230	

MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
352	8/17/77	Sarver, Mary	1	Rt 230	
353	10/27/67	Sarver, Mary	1	Rt 230	
354	1/15/74	Sarver, Mary	1	E Hbg Ave	
355	3/28/79	Sarver, Mary	4	Rt 230	
356	6/16/78	Sarver, Mary	6	Snyder Rd	
357	8/10/90	Sauder, Lonnie/Barbara	2	Milton Grove Rd	3-36942-144-1
358	3/19/84	Scalera, Lawrence/Kathleen	5	Mt Gretna Rd	
359	9/29/86	Scalera, Lawrence/Kathleen	4	Mt Gretna Rd	P3-36942-055-II
360	11/28/79	Scalera, Lawrence/Kathleen/Stan	2	Hershey/Mt Gretna Rd	LC File
361	9/11/78	Schatz, Robert	1	Stauffer Rd	LC File
362	9/11/78	Schatz, Robert	1	Stauffer Rd	LC File
363	12/10/92	Schwanger, Walter/Lois	3	Schwanger Rd	M3-36942-182-3-Z
364	10/17/73	Seward, Austin F	1	Trail Rd	
365	4/19/73	Seward, Austin F	1	Trail Rd	
366	10/1/87	Seward, Austin F/Delores	3	Trail Rd	P3-36942-077-III
367	1/24/79	Seward, Austin F/Delores	1	Trail Rd	
368	9/10/92	Shady Oak	1	E Hbg Pike	
369	8/31/92	Shank, Harold/Cleora	3	Mill Rd	M3-36942-178-3-Z
370	6/2/89	Shearer, Loda	2	Rissermill Rd	P3-36942-107-III
370	6/2/89	Shearer, Loda	2	Rissermill Rd	P3-36942-086-III
371	5/22/85	Shearer, Loda	2	Rissermill Rd	3-36942-037
372	5/13/74	Shenk, Richard/Sharon	3	Milton Grove Rd	
373	8/16/79	Sherer, Samuel	2	Mt Pleasant Rd	
374	12/13/84	Sherer, Samuel	1	Mt Pleasant Rd	
375	1/16/75	Shoop, William	6	Terrace Rd	LC File
376	12/19/80	Shuey, Ralph/Rose	1	Creek Rd	3-36942-003
377	12/22/92	Sico Co, The	2	Rt 230	M3-36942-181-3-Z
378	7/18/89	Shybrook Meadows	28	Shybrook Court	P3-36942-058-IV
379	8/19/88	Shybrook Meadows	18	Clover Ln/Sheaffer/Campus	P3-36942-058-III
380	5/14/74	Simione, Harry	3	Ridge Rd	
381	5/9/78	Simione, Harry/Sandra	2	Ridge Rd	
382	4/29/81	Simione, Harry/Sandra	3	Ridge Rd	3-36942-005
383	4/10/80	Simon, Charles/Margaret	2	Cedar St	
384	1/16/80	Sipling, Howard	1	Hbg Ave, Rheems	
385	10/8/86	Slessor, Dorothy/Roy	1	Old Hershey Rd	
386	9/12/89	Slessor, Dorothy/Roy	2	Old Hershey Rd	
387	11/18/75	Smith, John/Carol	2	Hilltop Rd	LC File
388	4/13/92	Snavley, Edgar/Anna	10	Ridge Rd	P3-36942-157-Z
389	3/9/84	Snavley, Edgar/Anna	1	Ridge Rd	3-36942-026
390	5/18/76	Snavley, Edgar/Anna	1	Ridge Rd	
391	12/6/62	Snavely, Melvin	1	Creek Rd	
392	9/2/70	Snyder, Harry	1	E-town Rd	
393	12/14/88	Snyder, James	3	Mt Gretna Rd	P3-36942-088-II
394	10/17/77	Snyder, Roy/Ralph	2	Rt 230	
395	9/20/76	Snyder, Sarah	1	Old Hershey Rd	
396	1/4/78	Spickler, Galen/Annabel	5	Milton Grove Rd	
397	4/6/92	Stanley, Robert/Kathleen	1	Cassell Rd	
398	12/5/85	Stanley, Robert/George&Nancy	7	Cassell Rd	3-36942-048
399	7/2/77	State Hospital, Crippled Childr	1	Cassell Rd	
400	5/14/80	Stauffer, Paul/Mary	1	Hereford Rd	
401	12/30/88	Stauffer Sub Division	2	Campus Rd/Groff Ave	P3-36942-105-II
402	10/27/77	Steinkamp, Stephen	2	Mill Rd	
403	8/31/82	Stouch, James/Joyce	1	Creek Rd	3-36942-010
404	12/17/85	Studebaker Sub	1	Grandview Rd	
405	8/6/75	Sweigart, David	1	E-town Rd	
406	10/1/85	Sweigart, David/Joanne	1	Ridgeview Rd	3-36942-065-I
407	10/22/86	Sweigart, David/Joanne	1	Sheaffer Rd	
408	6/2/89	Sweigart, David III	1	Ridgeview Rd	P3-36942-096-III
409	11/25/88	Teufel, Robert/Robert Florschut	1	Rt 743/N Hanover St	
410	10/24/80	Thilo, Peter	1	Milton Grove Rd N	

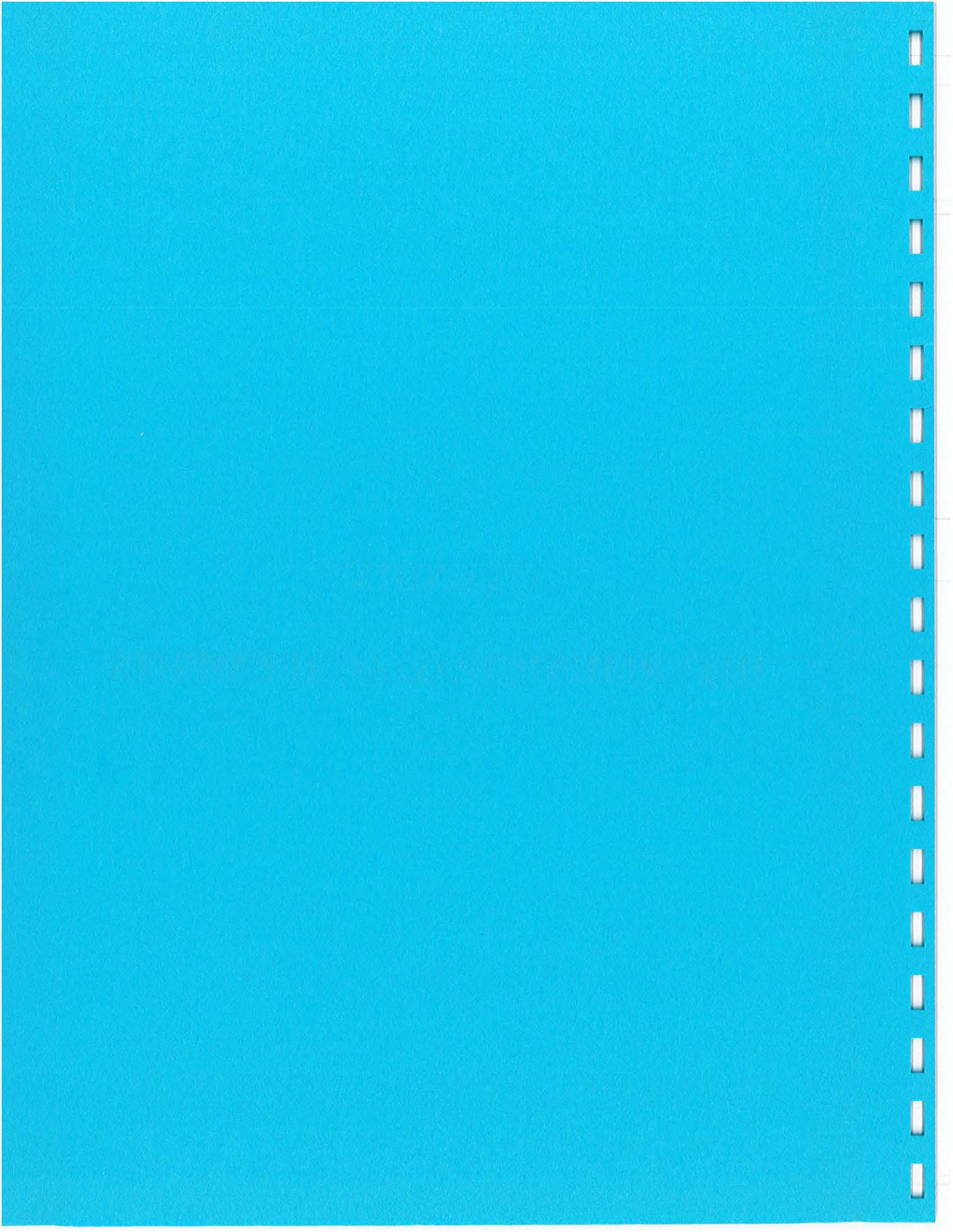
MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
411	11/14/74	Thome, Bernard	4	Cloverleaf Rd	LC File
412	2/11/81	Thome, Bernard	1	Cloverleaf Rd	LC File
413	2/14/78	Thome Farms, Inc	21	Hereford/Ridge Rd	LC File
414	11/14/74	Thome Farms, Inc	1	Hereford Rd	LC File
415	7/21/72	Townside Park A	3	Aberdeen Rd	LC File
416	5/2/73	Townside Park B	3	Aberdeen Rd	LC File
417	7/17/74	Townside Park C	1	Aberdeen Rd	LC File
418	1/19/76	Townside Park D	6	Aberdeen Rd	LC File
419	5/24/78	Townside Park E	20	Aberdeen-Mark-Faith	
420	10/17/69	Triangle Acres	2	Sheaffer Rd	LC File
421	6/19/75	Trostle, Loy/Lois	2	Milton Grove Rd N	LC File
422	6/29/71	Ulrich, Jay S	1	Rt 230	
423	6/15/83	Ulrich, Stephen/Jean	1	Rt 230	
424	4/16/92	United Service Foundation	2	Ridge Run Rd	M3-36942-176-I
425	8/30/79	Wagner, Harold/Anna	1	Mt Gretna Rd	
426	5/17/73	Weidler, Paul J	1	Ridgeview Rd N	
427	10/17/88	Weidler Subdivision	2	Mt Gretna Rd	P3-36942-092A-II
428	9/16/76	Weidman, Abram H Jr	1	Rt 230/LR-129	LC File
429	2/8/91	Weidman, Judith M	1	Hbg Ave	3-36942-137-I
430	1/11/84	Weidman, Judith M	2	Hbg Pike	
431	7/9/85	Weidman, Martha & Sarver, Mary	1	Snyder Rd	LC File
432	9/30/81	Weidman, Martha & Sarver, Mary	5	Snyder Rd	3-36942-007
433	7/14/75	Weidman, Ruth	1	Harvest Rd	LC File
434	12/29/87	Wenger, Lloyd/Kathryn	4	Harvest Rd	3-36940-078-I
435	5/22/89	Westbrooke Phase I	37	Andrew Ave/Westbrook Dr	P3-36942-091-IV
436	1/22/92	Westbrooke Phase II	29	Brookfield Dr	P3-36942-091-IV
437	3/15/78	West Lanco & Zink, Frank	66	Milton Grove/E-town/Trail Rd	
438	4/5/78	Wetzel, Kerwin/Dorothy	2	Ridge Rd	LC File
439	11/28/69	Whisler, Amos	5	Ridge Rd	
440	11/30/87	Wissler, Martha	1	Snyder Rd	
441	6/26/74	Wissler, Roy	3	Snyder Rd	LC File
442	10/15/80	Wissler, Roy H	9	Wissler Ln	LC File
443	3/6/80	Wissler, Roy H	8	Wissler Ln	LC File
444	10/24/73	Withers, Ben	1	Mt Gretna Rd	
445	12/19/79	Witmeyer, William/June	1	Creek Rd	
446	8/3/78	Wolgemuth, Graybill/Cecelia	5	Mt Pleasant Rd	LC File
447	2/26/79	Wolgemuth, John M	1	Sunnyburn Rd	LC File
448	8/19/75	Wolgemuth Orchards	2	Orchard Rd	LC File
449	2/22/80	Wolgemuth, Paul/Verda	2	Ridge Rd	
450	6/12/85	Wolgemuth, Paul/Verda	1	E-town Rd	
451	9/15/80	Wolgemuth, Paul/Verda	1	Greentree Rd	
452	6/15/83	Wright, Owen/Patricia	4	add on on Ridge Rd	LC File
453	5/21/79	Wright, Owen/Pat, Paul/Gloria Ri	4	Sheaffer Rd	LC File
454	10/27/72	Zellers, Rufus B	1	Harvest Rd	
455	10/29/86	Zerphy, C.A.	1	Milton Grove Rd	3-36942-064-I
456	5/27/87	Zerphy, Charles/Kimberly	2	Cloverleaf Rd	P3-36940-068-III
457	10/5/82	Zerphy, Charles/Marilyn	1	Rissermill Rd	3-36942-030
458	4/13/84	Zerphy, Charles/Marilyn	1	Milton Grove Rd	3-36942-064
459	1/5/73	Zerphy, Charles	1	Rissermill Rd	
460	10/29/85	Ziegler, Dr John T	1	LDev Radio Rd	3-36942-024
461	3/26/71	Zimmerman, Eugene H	1	Ridge Rd	
462	12/20/72	Zimmerman, John	6	Harvest Rd	
463	4/25/73	Zimmerman, John/Emma	1	Harvest Rd	
464	8/13/74	Zuck, Amos R	1	add on Prospect Rd	3-36942-141-I
465	10/5/87	Zuck, Amos/Marion	3	Prospect Rd	3-36942-084
466	8/11/93	Albright, Thomas	2	Valleyview Rd	3-36942-187-I
467	3/7/94	Rockwood Phase II	36	Rockwood Dr	M3-36942-170-III
468	4/28/94	Mt Joy Farmers Co-op/Wolgemut	1	Rt 230	A3-36942-213-II
469	4/7/95	Spring/Ridge Rd Subdiv	3	Spring Rd	3-36942-219-3-Z
470	12/13/93	H & S Excavating Phase II	38	Rob Drive	A3-36942-193-III

MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
471	3/30/94	Cramer, Ralph	4	Trail Rd	3-36942-201-I
472	11/28/94	E-town Motel	1	Merts Dr	
473	6/1/94	Brookridge-Morris	9	Fieldstone Circle	A3-36942-204-3-Z
474	9/2/93	Dohner, Leonard	1	Cloverleaf Rd	A3-36942-221-II
475	7/29/93	Lefever, Jay/Gary	2	Creek Rd	A3-36942-192-I
476	8/26/93	Gantz & Grandview Assoc	9	Fairview Rd	P3-36942-154-III
477	8/24/93	Graham, Doris/Harry	1	College Ave	A3-36942-194-III
478	7/6/93	Risser, Harry E	2	Milton Grove Rd	3-36942-195-I
479	9/20/94	Shady Oak	2	E Hbg Ave	A3-36942-214-III
480	10/22/93	Herr, Raymond/Miriam	1	Mt Pleasant Rd	3-36942-199-I
481	3/28/94	Heistand, William	1	Milton Grove Rd	3-36942-205-I
482	7/26/94	Musser, Harold/Judith	1	E-town Rd	3-36942-211-I
483	7/22/94	Hill-N-Dale Egg Farm Inc	4	E-town Rd	A3-36942-207-I
484	8/1/94	King, Henry S	1	Bellaire Rd	3-36942-210-I
485	11/17/94	Heisey, John M/Linda	1	Mt Pleasant Rd	3-36942-220-I
486	10/26/94	Northbrook Phase I	71	Radio Rd	A3-36942-208-III
487	10/13/94	Whisler	2	Ridge Rd	W3-36942-206-B
488	11/4/94	Fahnestock, Linn	1	Camp Rd	3-36942-200-I
489	9/2/93	Taco Bell	1	Rt 230	
490	9/12/75	Carter Lumber	1	Route 230	LC File
491	4/8/77	Kraybill, Nevin M.	2	Sheaffer Rd	LC File
492	1/13/76	Liskey, Paul J.	6	Aberdeen Road	LC File
493	6/20/75	Locust Hill Apts.	48	Radio Road - Morris	LC File
494	3/4/76	M & E Associates	18	Mt Pleasant/Snyder	LC File
495	3/14/77	Martin, Albert Jr & Carole	2	Milton Grove Rd	LC File
496	8/12/75	Merty Estates	9	Creek Rd	LC File
497	3/13/79	Messick, Merville & Betty	9	Merts Dr	LC File
498	3/31/77	Mummau, Clair/Jean	2	Milton Grove Rd	LC File
499	3/13/80	Norianco Plaza	1	Rt 230	LC File
500	10/20/78	Sheffer & Scalera	7	Rt 241	LC File
501	8/22/78	Sheffer & Scalera	1	Rt 241	LC File
502	7/18/78	Zink, Franklin B.	66	E-town Rd	LC File
503	6/1/86	Liskey, Paul/Jessie	2	Aberdeen Rd	3-36942-028
504	9/1/85	Woodland Avenue Extension	7	Woodland Ave	3-36942-045
505	10/1/85	Eshelman, James/Effie	2	Grandview Rd	3-36942-047
506	12/1/85	Wolgemuth, J Lloyd/Elsie	2		3-36942-051
507	5/1/87	Gantz, Robert	9	Fairview Rd	P3-36942-071-III
508	10/1/87	Old Hershey Rd Extension	4	Old Hershey Rd	P3-36942-074-IV
509	7/22/86	Reymer Subdivision	5	Steel Way Dr	3-36942-021
510	6/21/88	Country Meadows	1	Cherry/Lemon St	P3-36942-092-IV
511	10/20/88	Mount Joy Volleyball	1	Miller/Mt Pleasant Rd	P3-36942-098-IV
512	4/28/89	Konover	1	Rt 230	P3-36942-090-IV
513	10/2/89	Musser, Harold	4	Ridge Rd	3-36942-119-I
514	11/14/89	Musser, Harold	4	Ridge Rd	3-36942-124-I
515	3/11/91	H & S Excavating	0	Schwanger Rd	P3-36942-089-IV
516	3/6/92	United Zion Camp Grove	1	Camp Rd	3-36942-173-1
517	2/16/93	DARALCO	2	Schwanger Rd	W3-36942-189-B
518	2/22/93	Market Street Square	1	Rt 230	
519	3/3/93	Musser, Ralph/Virginia	7	Ridge Rd	3-36942-183-I
520	3/26/93	Aberdeen Rd Extension	0	Aberdeen/Mark/Faith	M3-36942-171-3
521	3/26/93	Mill & Cassell Rd Extension	0	Mill & Cassell Rd	M3-36942-184-3
522	3/30/93	Adler & Scalera	2	Rt 743	A3-36942-185-3-Z
523	4/16/93	Fieni, Armond	1	Harvest Rd	3-36942-188-I
524	9/2/93	Taco Bell	1	Rt 230	
525	11/30/93	Witmeyer, Gary/Rita	1	Creek Rd	3-36942-202-I
526	2/2/93	Kaylor, Ken Car Wash	1	Rt 743	M3-36942-169-3-Z
527	1/6/94	Colin Management	1	Rt 743	A3-36942-191-III
528	1/26/94	Gurba, Stephen/Catherine	2	Creek Rd	3-36942-209-I
529	6/28/94	Rockwood - Phase III	0	Rockwood Drive	A3-36942-217-III
530	7/22/94	MJTA Tank Site	1	Old Hershey Rd	W3-36942-216-B

MAP #	DEVEL DATE	SLDO	LOTS	LOCATION	PLAN MODULE #
531	8/30/94	Hershey, James	1	Spring Rd Sunnyburn Rd	A3-36942-215-II
532	9/20/94	Shady Oak	2	E Harrisburg Avenue	A3-36942-214-III
533	11/28/94	Etown Motel	1	Merts Dr	
534	9/28/94	Mt Joy Farmers Coop/Wolgemit	1	Rt 230	A3-36942-213-I
535	6/1/95	Kings Mill	18	Mill Rd/Rt 230	M3-36942-177-3
536	6/23/95	Martin, Russel/Louise	3	Cold Spring Rd	3-36942-225-I
537	6/30/95	Balmer, Mary Jane	1	Stauffer Rd	3-36942-226-I

APPENDIX 2

INTERMUNICIPAL AGREEMENTS



AGREEMENT WITH RESPECT TO SANITARY SEWER SERVICE

This Agreement made the 19th day of December, 1995, among MOUNT JOY BOROUGH AUTHORITY (the "Borough Authority"), MOUNT JOY TOWNSHIP (the "Township") and MOUNT JOY TOWNSHIP AUTHORITY (the "Township Authority"). The Borough Authority is a municipality authority organized by municipal authorities of the Borough of Mount Joy (the "Borough") under the provisions of the Pennsylvania Municipality Authorities Act of 1945 (the "Act"). The Township Authority is a municipality authority organized by the municipal authorities of the Township under the Act. The Borough and the Township are neighboring municipalities located in Lancaster County, Pennsylvania.

In 1994 and 1995, the Borough Authority undertook a comprehensive sanitary sewer study for the purposes of determining the ability of the Borough Authority to provide sewer service within the geographic boundaries of the Borough and to surrounding municipalities over the next twenty (20) years. As a result of the comprehensive study, it has been determined that the Borough Authority has sufficient capacity in its wastewater treatment plant to provide sewer service to the Borough over the next twenty (20) years. It has also been determined that by undertaking certain capital improvements to its sewer system (the "Sewer System"), the Borough Authority has the ability to provide certain sewer service to the adjacent municipalities. Sewer Service to be supplied to the Township shall be supplied in a manner consistent with the Service Area established by the Township.

The Borough Authority is willing to provide a 524 equivalent dwelling unit ("EDU") per day allocation of sewer capacity to the Township under the terms and conditions set forth in this Agreement.

NOW, THEREFORE, the parties hereto, intending to be legally bound hereby, agree as follows:

1. The Borough Authority hereby agrees to provide to the Township an allocation of 524 EDU's per day of sewer capacity. This allocation is subject to the terms and conditions set forth in this Agreement.

For the purposes of this Agreement, an EDU shall have the same definition as set forth in the Borough Authority's then current Rules and Regulations. An EDU is presently defined in the Rules and Regulations as 350 gallons of wastewater per day and each dwelling unit is treated as an EDU.

This allocation includes the 60 EDU's per day already being used by the existing customers in Mount Joy Township who are presently being served by the Borough

Authority. A listing of the customers in Mount Joy Township presently being served by the Borough Authority is set forth in Exhibit "A". Any change in the definition of the number of gallons of wastewater per day constituting an equivalent dwelling unit shall be accompanied by a comparable change in the number of EDUs allocated to the Township; provided, however, that no change in the definition of an EDU shall cause the Township's maximum allocation of sewer capacity under this Agreement to exceed 183,400 gallons per day.

2. The area within the Township which the Borough Authority agrees to serve is outlined in red on Exhibit "B" attached hereto, which area is hereby designated as the "Service Area". The sewer capacity allocated under this Agreement to the Township shall be used to serve properties located in the Service Area and no other areas. The Service Area is expected to be incorporated into the Comprehensive Plan for the Township. The Service Area shall not be modified or expanded by the Township without the express written consent of the Borough Authority. The Borough Authority will consider and grant reasonable requests for modification of the Service Area (subject to the capacity limitations described in Paragraph 1 above) and will consider, in analyzing an expansion request, the potential legal obligation of the Township to permit reasonable development of particular tracts of land within any proposed expanded Service Area. The Borough Authority and Township shall periodically (but not less than every five years) re-evaluate whether the Service Area should be modified.

3. The Borough Authority shall bill each customer in the Township directly and the rates charged to customers in the Township shall be equal to the rates charged to the Authority's customers located in the Borough. To the extent the Township Authority is billing Township residents who are receiving Borough Authority sewer service, such billing responsibility shall be transferred by the Township Authority to the Borough Authority on January 1, 1996 with the first billing to be performed by the Borough Authority hereunder to occur on the last business day of March, 1996 and covering the first quarterly billing cycle of 1996. The Borough Authority shall have the right from time to time to modify its rate structure as may be necessary or desirable or as may be recommended by the Borough Authority's Consulting Engineers or as may be required under the terms of its bond indentures relating to its then outstanding Guaranteed Sewer Revenue Bonds. In the event it becomes necessary to construct special facilities to provide sewer service to all or any part of the Service Area, the Borough Authority may, subject to applicable law and sound engineering practice, establish rate districts in which rates charged to customers in each rate district are reasonably related to the costs of providing sewer service to such rate districts; otherwise, the rates charged to Township residents shall be the same as rates charged to Borough residents.

4. The Township shall take such action in the exercise of its rights or police power as may be reasonably requested by the Borough Authority to adopt and enforce an ordinance which prohibits any person from connecting to the Borough Authority's sewer system any sump pumps, downspouts, floor drains or other devices which direct storm water, ground water, surface water, roof run-off, or subsurface drainage into the Borough Authority sewer system. The Township recognizes that inflow and infiltration are serious problems for most sewer systems including the Borough Authority's sewer system and Township agrees to cooperate with the Borough Authority through the vigorous enforcement of such ordinances.

5. No connections of properties located in the Service Area shall be made to the Borough Authority's sewer system, when such sewer will be supplied by the Borough Authority pursuant to this agreement, until such time as a sewer connection permit is issued by the Borough Authority with respect to such connection. All applications to the Borough Authority for sewer connection permits shall be made by and in the name of the Customer and shall be filed in the Borough Authority's office. The Borough Authority shall review in a timely manner all applications for subdivision or land development approval filed with the Township when sewer service for said subdivision or land development is intended to be provided by the Borough Authority. The Borough Authority shall receive immediate notification and copies of all utility plans filed with respect to all applications for subdivision or land development approval within the Service Area. The Borough Authority will provide written comments or approval of such plans to the Township in a timely manner. Except as hereinafter provided, the Township agrees that no building permits will be issued within the Service Area unless:

1. the parties seeking the building permit have been issued a current, valid sewer connection permit by the Borough Authority; or

2. the party seeking the building permit demonstrates to the satisfaction of the Township that the connection to the Borough Authority sewer system is not immediately feasible due to the distance of the proposed site from existing sewer lines or other valid reasons and where such party is required to install a capped system or otherwise provide for future connections to the sewer system; or

3. the proposed development will be adequately served by an on-site sewage treatment facilities and where connection to the public sewer system is not feasible and the issuance of a building permit is reasonably required to prevent a manifest injustice.

Except where applicable law imposes a duty on the Borough Authority to serve a property, the Township shall have sole discretion to determine whether and when any property in the Service Area shall be served with public sewer service under this Agreement.

No sewer connection permits will be issued unless such connection complies in all respects with the Borough Authority's then current Rules and Regulations. Such compliance shall include the installation of a standard type water meter specified by the Borough Authority on all properties within the Service Area which are connected to the Borough Authority's Water System. Where a property to be served by sewer service under this Agreement is not connected to the Borough Authority's Water System, the property owner will be responsible for installing and maintaining a standard type water meter specified by the Borough Authority on the well providing water to the property. All such water meters will be provided by the Borough Authority at the expense of the customer. Sewer rates will be imposed based on the water meter readings. In the event there is a discrepancy between the Borough Authority's Rules and Regulations and the Township's Ordinances, Resolutions, Rules and Regulations, the Borough Authority's Rules and Regulations and the requirements specified by its Consulting Engineers shall take precedence with respect to sewer service within the Service Area.

Each sewer connection within the Service Area shall be subject to the Borough Authority's then current tapping fee, connection fee and any applicable special facility fees in addition to any other fees or charges which may be imposed by the Township on such connection. Each application for a sewer connection permit shall be accompanied by cash or a check made payable to the Borough Authority in the full amount of the tapping fee, payable with respect to such connection as well as the estimated connection fee. No sewer connection permit will be issued by the Borough Authority until the tapping fee, and the connection fee and a special facilities fee (if any) applicable to such connection are paid in full.

The Township shall not issue any unconditional approval for any subdivision plan or land development plan when the sewer service for such development or building is intended to be provided by the Borough Authority without first obtaining the written approval of the Borough Authority to supply sewer service to such subdivision or land development.

6. All rules, regulations and policies of the Borough Authority applicable to connection to its sewer system shall apply to all connections from the Township's Service Area which are intended to receive sewer service from the Borough Authority. The Borough Authority shall have the right to inspections at reasonable times and shall

have the right to enforce all its then current Rules and Regulations with respect to sewer connections and sewer service in the Service Area.

7. It is hereby agreed that the Borough Authority and the Township shall each be permitted to take all actions permitted by law to enforce payment of bills and compliance with the Borough Authority's Rules and Regulations. Borough Authority and Township each agree to cooperate with each other to enforce payment of bills and compliance with all applicable rules and regulations. It is specifically agreed that Borough Authority may file liens against properties, terminate water service for failure to pay sewer bills, terminate sewer service or take any other action permitted at law or in equity to enforce payment of bills for sewer service within the Service Area.

8. The Township hereby agrees to provide to the Borough Authority a duplicate of all real estate assessment notices within the Service Area. Such duplicates shall be provided no later than thirty (30) days following the date such notice is received by the Township from the County. If the Township fails to comply with this paragraph 8, the Township agrees to guarantee payment of bills (without penalties or interest) with respect to such properties during all periods during which the Township has failed to comply with paragraph 8; provided, however, that the Authority first makes reasonable efforts to collect the bills from the property owners and the Authority provides the Township within thirty (30) days of bills becoming delinquent, with notice of the delinquent bills that the Township may have to pay.

9. In the event either Township or Borough Authority willfully or negligently violates any of the provisions of this Agreement, or federal or state acts, laws, or regulations applicable to the operation of the Sewer System, and such violation causes damage or injury to a party hereto, the injured party shall have the right to give reasonable notice to the offending party to have the violation cease forthwith. If, after reasonable notice of such violation, the offending party does not take immediate steps to correct the violation, the injured party may bring suit at law or in equity to compel such corrective action. The reasonable costs and expenses of the prevailing party in such suit, including reasonable engineers' fees and attorneys' fees incurred in the enforcement of the injured party's rights hereunder, shall be paid by the party against whom an unappealed final judgment or order shall have been entered by a court of competent jurisdiction.

10. Borough Authority agrees that it will maintain the Borough Authority's Sewer System in good repair, working order and condition; shall continuously operate said Sewer System; will make all necessary repairs in order to maintain adequate service; and will comply with all laws, rules, regulations, permits, orders and requirements lawfully made by any governmental body having jurisdiction. The Borough Authority agrees that sewer service supplied by the Borough Authority within

the Service Area shall comply with all parameters established by federal and state laws and regulations.

11. The parties acknowledge that there are certain rules and regulations applicable to the Sewer System and promulgated by the Borough Authority which are in effect as of the date of this Agreement and that the Borough Authority may from time to time supplement or revise those rules and regulations. Township acknowledges that all of the customers of the Sewer System will be bound by those rules and regulations and that the Borough Authority shall have no obligation to permit connection to a customer within the Service Area unless such customer agrees to comply with the rules and regulations adopted from time to time by the Borough Authority.

12. The Borough Authority has initially undertaken the cost of a study regarding an analysis of viable allocation of sewer capacity among the Borough and the abutting townships and the capital improvements required to support such allocations. The study being of benefit to the abutting municipalities as well as to the Borough, it is agreed that the cost of the study should be shared by those benefitting. The total cost of the study is \$15,029.05 and the allocation of cost to each municipality will be \$2.10 per EDU of capacity allocated to each municipality. Township's share of the cost of such study shall be \$1,100.40, payable concurrently with the execution of this Agreement.

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

14. This Agreement shall become effective upon its execution and delivery by the parties hereto, and the terms hereof shall be perpetual. This Agreement may be modified from time to time by written agreement of both parties.

15. Nothing in this Agreement shall limit the discretion of the Township in determining the portions of the Township in which sewer lines are to be constructed and the time or times of such construction. Nothing in this Agreement shall be construed to grant exclusive rights and authority to the Borough Authority to provide sewer services in the Service Area, and the Township shall have the right to provide sewer services in the Service Area in any other manner as determined in its sole discretion, or grant the same or similar rights and authority to other parties as are granted to the Borough Authority herein.

16. Under the terms of an Agreement with Respect to Water Service entered into by the Borough Authority, the Township and the Township Authority concurrently herewith (the "Water Agreement"), a Water Liaison Committee was established. In order to facilitate communication among the parties with respect to the betterment of the sewer system, the Water Liaison Committee described in Section 17 of the Water Agreement is hereby modified and renamed the "Liaison Committee". The Liaison Committee shall address both water system and sewer system issues but in all other respects shall operate in accordance with Section 17 of the Water Agreement.

17. It is understood by the Township and the Borough Authority that the Borough Authority's ability to perform its obligations hereunder is based upon the ability of the Borough Authority to expand its wastewater treatment plant and sewer system facilities in accordance with the sewage system capacity analysis for Mount Joy Borough Authority dated March, 1995, prepared by ACER Engineers & Consultants, Inc. (hereinafter the "1995 Sewer Study"), a copy of which has been provided to the Township. The obligations of the Borough Authority under this Agreement are contingent upon the Borough Authority being able to upgrade its current wastewater treatment capacity from 1.53 million gallons of capacity per day to 2.5 million gallons of capacity per day in accordance with the process and procedures outlined in the 1995 Sewer Study and at approximately the costs outlined in the 1995 Sewer Study as adjusted over time by the Consumer Price Index or other relevant index. If, through no fault of the Borough Authority, the United States Environmental Protection Agency, the Pennsylvania Department of Environmental Resources or any other regulatory body which then has jurisdiction over wastewater treatment systems promulgates regulations which make it impossible or impractical to upgrade the Borough Authority's existing wastewater treatment plant and facilities as contemplated in the 1995 Sewer Study or if such regulatory agencies refuse to permit and approve such expansion to the Borough Authority's wastewater treatment facilities and sewer system as contemplated in the 1995 Sewer Study, the Borough Authority shall be released of its obligations to provide the unused portion of the future sewer capacity as specified in this Agreement and the Township shall be released from its obligations regarding the same.

18. In order to implement this Agreement, the parties hereto agree that the sewer collection lines and related facilities serving Deerfield Drive, Midland Circle, a portion of Springville Road and the line from Bruce Avenue to Fairview Road which are presently owned and operated by the Township Authority, together with all necessary rights of way where such lines and facilities cross private property, shall be conveyed and dedicated to the Borough Authority who shall thereafter own and maintain said lines and facilities as part of the Sewer System. Such conveyance and dedication shall be completed no later than January 15, 1996.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first written above.

MOUNT JOY BOROUGH AUTHORITY

By: Kenneth A. Davis

Attest: Richard R. Puffin

(SEAL)

MOUNT JOY TOWNSHIP

By: James W. [unclear]

Attest: Richard [unclear]

(SEAL)

MOUNT JOY TOWNSHIP AUTHORITY

By: Charles Bailey

Attest: Richard A. [unclear]

(SEAL)

Acct. 010861
Alan Silberman
201 Orchard Road

Acct. 010862
Larry Joe
205 Orchard Road

Acct. 010863
Dennis Brown
301 Orchard Road

Acct. 010864
Charles Hower
311 Orchard Road

Acct. 010930
Barry Landis
415 Orchard Road

Acct. 011986
William Young
227 Springville Road

Acct. 011987
David L. Kantner, Jr.
223 Springville Road

Acct. 011988
Joseph Maurizi
219 Springville Road

Acct. 011989
Francis Marion
215 Springville Road

Acct. 011990
James J. Mummau
211 Springville Road

Acct. 012000
Jean E. Hendricks
210 Springville Road

Acct. 012001
Oscar York
214 Springville Road

Acct. 012002
Catherine Cieslinski
218 Springville Road

Acct. 012003
Edward Welsh, Jr.
222 Springville Road

Acct. 012004
Mark Spiridigliozzi
420 Deerfield Drive

Acct. 012005
Chester Graul
424 Deerfield Drive

Acct. 012006
Jeffrey Fishburn
428 Deerfield Drive

Acct. 012007
Dennis Doye
432 Deerfield Drive

Acct. 012008
Rick Sine
436 Deerfield Drive

Acct. 012009
Benjamin Kling
440 Deerfield Drive

Acct. 012010
Jay Heller
441 Deerfield Drive

Acct. 012011
James Parsons
437 Deerfield Drive

Acct. 012012
Glenn Arnold
433 Deerfield Drive

Acct. 012013
George Gosnell, Jr.
429 Deerfield Drive

Acct. 012014
Samuel Huang & Canh Cuc Tran
425 Deerfield Drive

Acct. 012015
Mark McLain
421 Deerfield Drive

Acct. 012016
Curt Olweiler
417 Deerfield Drive

Acct. 012017
Joan Underkoffler
413 Deerfield Drive

Acct. 012018
Shokry I Tanious
409 Deerfield Drive

Acct. 012019
Anne K. Gecelosky
405 Deerfield Drive

Acct. 012020
Kenneth Smith
401 Deerfield Drive

Acct. 042040
James Evans III
210 Midland Circle

Acct. 042050
Milton Kelley
216 Midland Circle

Acct. 042060
Terry Bare
222 Midland Circle

Acct. 042070
Michael Warner
230 Midland Circle

Acct. 042080
Barry Rhoads
238 Midland Circle

Acct. 042090
Robert E. Hiestand
244 Midland Circle

Acct. 042100
Timothy J. Ryan
250 Midland Circle

Acct. 042120
Donald Musser
255 Midland Circle

Acct. 042130
David Gebhart
251 Midland Circle

Acct. 042140
James Hill
245 Midland Circle

Acct. 042150
Raymond Gochenauer
239 Midland Circle

Acct. 042160
Edward Gower
233 Midland Circle

Acct. 042170
Robert Krouse
227 Midland Circle

Acct. 042180
Dave Halbleib
219 Midland Circle

Acct. 042190
David W. Kready
211 Midland Circle

Acct. 042200
Charles Eshleman
203 Midland Circle

Acct. 042210
Craig Crockett
311 Old Market Street

Acct. 180123
Kenneth Pauls
692 Fairview Road

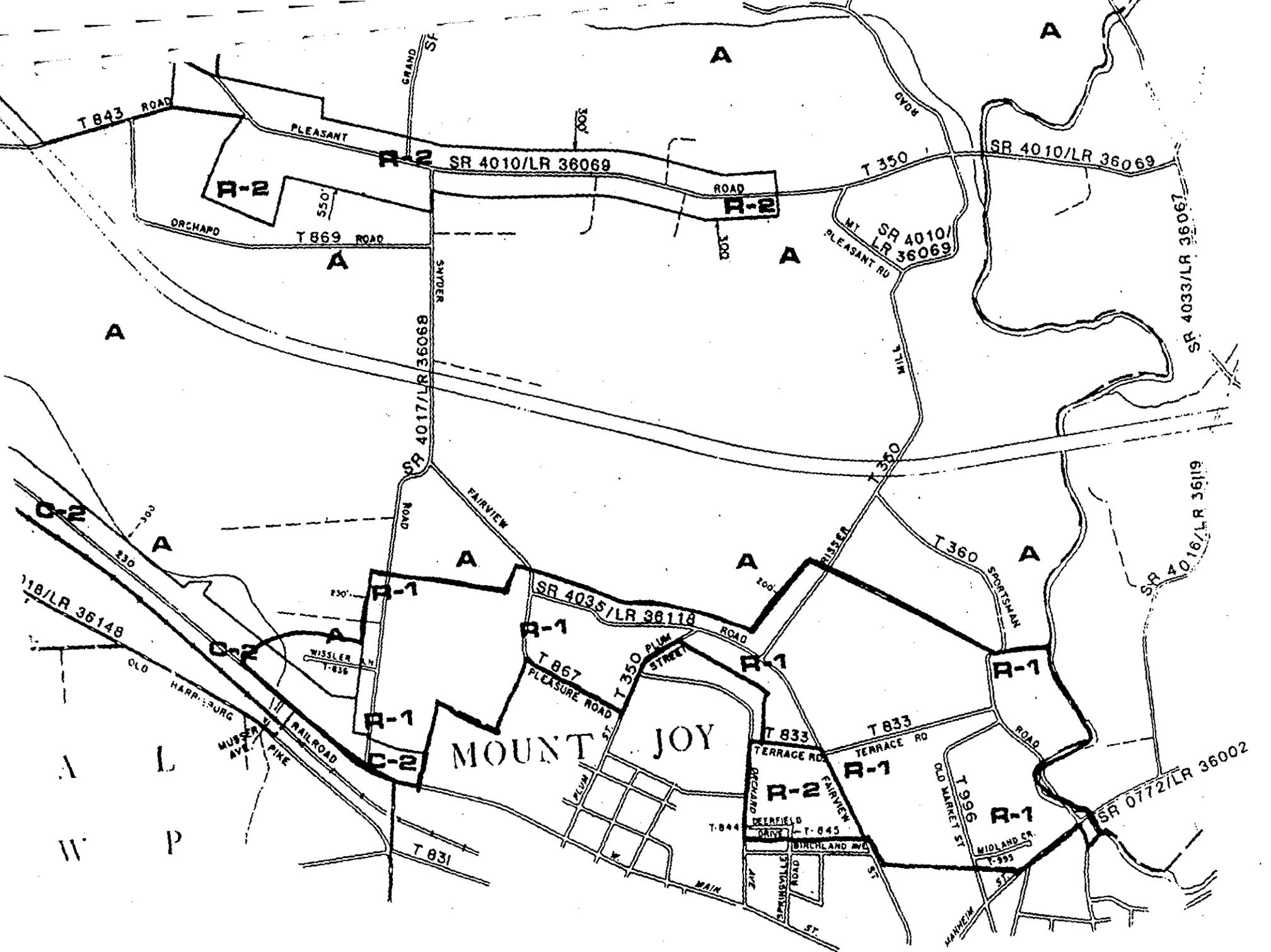
Acct. 180126
Robert Mrgich
650 Fairview Road

Acct. 180127
Charles Ricedorf
634 Fairview Road

Acct. 180128
Park King
620 Fairview Road

Acct. 240160
Mount Joy Vo-Tech School
Old Market Street (8 EDU's)

EXHIBIT B



118/LR 36148

MOUNT JOY

SR 0772/LR 36002

SR 4010/LR 36069

SR 4010/LR 36069

SR 4033/LR 36067

SR 4016/LR 36119

SR 4017/LR 36068

SR 4035/LR 38118

ORCHARD

T 869 ROAD

ROAD

MT PLEASANT RD

FAIRVIEW

T 867 PLEASURE ROAD

T 350 PLUM STREET

T 833 TERRACE RD

T 833 TERRACE RD

OLD MARKET ST

MIDLAND CR

MUSSEY AVE

WISSLER LN

DEERFIELD RD

BIRCHLAND AVE

SPRINGVILLE ROAD

HAYWHEM ST

T 831

T 844

T 845

T 955

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W

AMENDMENT TO AGREEMENT

THIS AGREEMENT dated as of *December 14*, 1995
between WEST DONEGAL TOWNSHIP AUTHORITY ("West Donegal Authority"), party of
the first part, and MOUNT JOY TOWNSHIP AUTHORITY ("Mount Joy Authority"),
party of the second part.

WITNESSETH:

WHEREAS, West Donegal Township Authority and Mount Joy Township
Authority have entered into an Agreement dated as of January 1, 1978 regarding
their joint operations for sewage collection and discharge; and

WHEREAS, West Donegal Township Authority and Mount Joy Township
Authority wish to modify and amend their January 1, 1978 agreement to provide
for additional capacity in the system and to provide for further
administration of the joint sewage collection system.

NOW THEREFORE, West Donegal Township Authority and Mount Joy Township
Authority for and in consideration of covenants and agreements herein
contained, to be kept and observed, each intending to be legally bound hereby,
covenant and agree as follows:

1. Mount Joy Authority shall make a capital contribution in the amount of \$ 79,917 for the additional conveyance capacity to be allocated to Mount Joy Authority by West Donegal Authority. Mount Joy Authority shall pay this capital contribution to West Donegal Authority on or before December 31, 1995. The parties agree that the capital contribution set forth is in addition to the capital contribution that Mount Joy Authority made in 1978 pursuant to the Agreement of January 1, 1978. The parties agree that they have calculated the capital contribution set forth in this paragraph as follows:

A. Section 14 of the January 1, 1978 Agreement provides for the distribution of excess capacity in the jointly used portion of the West Donegal Sewer System in accordance with the Distribution Factors set forth in Exhibit B of the Agreement. Both parties agree that the total carrying capacity of all jointly used lines is allocated in accordance with the said distribution factors, as shown in Columns A, B, and C of Exhibit "L" attached hereto and made a part hereof.

B. Mount Joy Authority has requested additional capacity in portions of the West Donegal Sewer System which exceeds its allocated capacity in these jointly used facilities. West Donegal Authority agrees to release, and Mount Joy Authority shall be entitled to purchase, certain capacity deemed by West Donegal Authority to be in excess of the West Donegal Authority's future capacity needs. The purchase price for said capacity shall be based on current construction costs and be adjusted to reflect grant funds originally received for the project. The capital contribution for gravity sewers, force mains and pumping stations shall be determined from indices presented in Exhibit "L" and in accordance with calculations set forth in Exhibit "M". In addition, the capital contribution paid by Mount Joy Authority shall be

adjusted to reflect interest paid by the West Donegal Authority since 1979 on loans acquired to finance the construction of the original sewer system. The calculation of the interest portion of the capital contribution is presented in Exhibit "N".

C. The Mount Joy Authority request for additional capacity exceeds the total available capacity of the Miller Road Pumping Station. Therefore, the Miller Road Pumping Station will have to be upgraded at some future date to accommodate the Mount Joy Authority request. The consulting engineer for the West Donegal Authority has determined that the required upgrade will include new impellers, motors and electrical controls. The standby emergency generator will not have to be upgraded to accommodate the request. The estimated cost to perform the required upgrade has been determined to be \$30,000. The Mount Joy Authority shall pay this sum to the West Donegal Authority as part of the total calculated capital contribution for additional capacity. Such payment shall guarantee the Mount Joy Authority a total reserve capacity of 0.580 MGD (average daily flow) in the Miller Road Pumping Station. The payment of \$30,000 for the Miller Road Pump Station upgrades is a one time contribution that is separate from future upgrades. The Mount Joy Authority will not have to pay any sums in excess of \$30,000 for the upgrade specified in this paragraph, and the \$30,000 is part of the \$79,917 capital contribution.

The timing for the implementation of the upgrade shall be at the sole discretion of the West Donegal Authority, provided that the new capacity allocation for the Mount Joy Authority is not jeopardized. A summary of the total Mount Joy Authority contribution, including the upgrade of the Miller

Road Pumping Station, is presented in Exhibit "P".

D. At such time that additional new construction of gravity sewers, force mains, or pumping stations be required in the future to provide capacity to Mount Joy Authority, the capital cost of construction shall be estimated by the consulting engineer for the West Donegal Authority. If the additional capacity is required solely by the Mount Joy Authority, Mount Joy Authority shall pay for the total project cost. If the additional capacity is required by both Authorities, the total project cost shall be pro-rated between the Authorities. Prior to construction and to the release of capacity to the Mount Joy Authority their full share of the estimated capital cost shall be deposited in an interest bearing account for use in the construction of the facilities when required. Upon completion of the new construction, the West Donegal Township Authority will provide Mount Joy Authority with a final account of the construction expenses associated with the project and Mount Joy Authority shall immediately pay to West Donegal Authority any deficiency in its pro-rata share within thirty (30) days of receipt of the final accounting, or West Donegal Authority shall refund any overpayment to Mount Joy Authority within thirty (30) days, whichever applies.

2. Section 11 of the January 1, 1978 Agreement shall be amended inserting the following as a third grammatical paragraph:

For purposes of calculation of treatment charges with the Borough of Elizabethtown, Mount Joy Authority shall transmit and provide quarterly flow information to West Donegal Authority and to the Borough of Elizabethtown by February 15, May 15, August 15, and November 15. If Mount Joy Authority's

flow information is not received by these dates, West Donegal Authority shall be authorized to estimate the Mount Joy Authority flows.

3. Mount Joy Authority shall pay to West Donegal Authority as scheduled in paragraph 12 of the January 1, 1978 Agreement, an operation, maintenance and repair charge as calculated according to the formula set forth at Exhibit "Q". This provision shall replace Sections 12.A, 12.B and 12.C on pages 19-21 of the January 1, 1978 Agreement. The remaining provisions of Section 12 of the January 1, 1978 Agreement shall remain in full force and effect.

4. In addition to the covenants of Mount Joy Authority in Paragraph 19 of the January 1, 1978 Agreement, Mount Joy Authority covenants and agrees that it will:

E. Mount Joy Authority's total average daily flows into the West Donegal Authority's system, calculated on a three month period, shall not exceed Mount Joy Authority's allocation divided by 2.5, as of the date of this Agreement. For the purpose of this Agreement, Mount Joy Authority's allocation for individual sewer lines, force mains, and pumping stations shall be as defined in Exhibit "L". In the case of conflicting allocations, the most restricting shall always govern.

F. Mount Joy Authority shall notify West Donegal Authority when actual average daily flows, calculated on a three month period, and multiplied by 2.5, reach 85% of totals allocated. Mount Joy Authority shall report to West Donegal Authority the total of future projected average daily and peak daily flows to the West Donegal system.

G. Mount Joy Authority shall take whatever steps are necessary to

eliminate any excess flows upon West Donegal Authority's request.

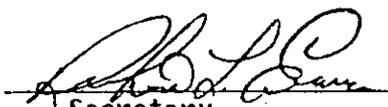
5. The Agreement of January 1, 1978, to the extent that it is not inconsistent with this Agreement, is hereby ratified, confirmed and in full force and effect.

6. This Agreement shall be binding upon the parties hereto and their respective successors and assigns.

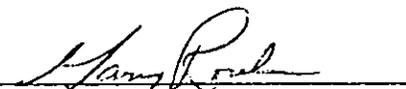
7. This Agreement may be executed in any number of counterparts, each of which shall be an original, but such counterparts shall constitute but one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized officers and their respective seals to be affixed hereunto, all as of the day and year first above written.

ATTEST:


Secretary
(SEAL)

WEST DONEGAL TOWNSHIP AUTHORITY

By: 
Chairman

ATTEST:


Secretary
(SEAL)

MOUNT JOY TOWNSHIP AUTHORITY

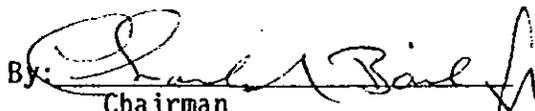
By: 
Chairman

EXHIBIT L
 WEST DONEGAL TOWNSHIP AUTHORITY
 MOUNT JOY TOWNSHIP AUTHORITY
 TRANSFER AND REALLOCATION OF CAPACITIES IN WDTA FACILITIES

		A	B	C	D	E	F	G	H	I	J	K
MH	MH	Design Capacity (MGD)	WDTA Allocation 1978 (MGD)	MJTA Allocation 1978 (MGD)	MJTA Existing Flow (MGD)	MJTA Future Development (MGD)	MJTA Total Requirement (MGD)	MJTA Shortfall & Request (MGD)	Replacement Cost 1995	MJTA Contribution	New WDTA Allocation (MGD)	New MJTA Allocation (MGD)
12	13	0.6295	0.3235	0.3060	0.0019	0.0000	0.0019	0.0000	\$14,040	\$0	0.3235	0.3060
13	14	0.6197	0.3185	0.3012	0.0031	0.0000	0.0031	0.0000	\$21,840	\$0	0.3185	0.3012
14	15	0.4938	0.2538	0.2400	0.0063	0.0000	0.0063	0.0000	\$24,000	\$0	0.2538	0.2400
15	16	0.5080	0.2600	0.2460	0.0081	0.0000	0.0081	0.0000	\$22,500	\$0	0.2600	0.2460
18	17	0.4749	0.2441	0.2309	0.0084	0.0000	0.0084	0.0000	\$17,700	\$0	0.2441	0.2309
17	5	0.4938	0.2538	0.2400	0.0144	0.0000	0.0144	0.0000	\$15,000	\$0	0.2538	0.2400
1	2	0.7808	0.4012	0.3795	0.0006	0.0000	0.0006	0.0000	\$24,000	\$0	0.4012	0.3795
2	3	1.1089	0.5689	0.5381	0.0019	0.0000	0.0019	0.0000	\$24,000	\$0	0.5689	0.5381
3	4	0.4938	0.2538	0.2400	0.0056	0.0000	0.0056	0.0000	\$24,000	\$0	0.2538	0.2400
4	5	0.6295	0.3235	0.3060	0.0075	0.0000	0.0075	0.0000	\$22,500	\$0	0.3235	0.3060
5	18	0.5465	0.3335	0.2130	0.0219	0.0869	0.1087	0.0000	\$23,700	\$0	0.3335	0.2130
18	19	0.4938	0.3013	0.1925	0.0219	0.0869	0.1087	0.0000	\$13,320	\$0	0.3013	0.1925
19	21	0.4938	0.3013	0.1925	0.0219	0.0869	0.1087	0.0000	\$13,320	\$0	0.3013	0.1925
21	29	0.4938	0.3566	0.1372	0.0219	0.0869	0.1087	0.0000	\$24,240	\$0	0.3566	0.1372
29	30	0.4938	0.3566	0.1372	0.0219	0.0869	0.1087	0.0000	\$18,720	\$0	0.3566	0.1372
30	31	0.5296	0.3824	0.1472	0.0219	0.0869	0.1087	0.0000	\$24,000	\$0	0.3824	0.1472
31	32	0.5895	0.4967	0.0928	0.0219	0.0869	0.1087	0.0180	\$13,020	\$72	0.4807	0.1087
32	1A	2.8581	2.4083	0.4499	0.0219	0.0869	0.1087	0.0000	\$600	\$0	2.4083	0.4499
1A	MH	2.8581	2.2508	0.6074	0.0219	0.0869	0.1087	0.0000	\$360	\$0	2.2508	0.6074
MH	NOLT	0.2835	0.2075	0.0560	0.0219	0.0869	0.1087	0.0528	\$140,000	\$5,698	0.1548	0.1087
FM	54	0.3948	0.3327	0.0621	0.0219	0.0869	0.1087	0.0468	\$132,500	\$3,180	0.2861	0.1087
54	55	0.4938	0.4404	0.0534	0.0219	0.0869	0.1087	0.0553	\$23,820	\$543	0.3851	0.1087
55	56	0.4938	0.4404	0.0534	0.0219	0.0869	0.1087	0.0553	\$24,000	\$547	0.3851	0.1087
56	57	0.4938	0.4404	0.0534	0.0219	0.0869	0.1087	0.0553	\$24,000	\$547	0.3851	0.1087
57	58	0.5238	0.4671	0.0567	0.0219	0.0869	0.1087	0.0521	\$21,900	\$443	0.4150	0.1087
58	47	0.8659	0.7722	0.0937	0.0219	0.0869	0.1087	0.0151	\$18,720	\$68	0.7572	0.1087
47	46A	0.4813	0.4366	0.0447	0.0219	0.0869	0.1087	0.0640	\$21,480	\$581	0.3726	0.1087
6	7	1.0591	0.4768	0.5825	0.0044	0.0963	0.1006	0.0000	\$23,020	\$0	0.4768	0.5825
7	8	1.6600	0.7470	0.9130	0.0081	0.0094	0.0175	0.0000	\$23,580	\$0	0.7470	0.9130
8	9	1.1581	0.5211	0.6389	0.0119	0.0094	0.0213	0.0000	\$23,640	\$0	0.5211	0.6389
9	10	0.7729	0.3478	0.4251	0.0138	0.0094	0.0231	0.0000	\$10,380	\$0	0.3478	0.4251
11	10	0.6762	0.3043	0.3719	0.0006	0.0000	0.0006	0.0000	\$12,900	\$0	0.3043	0.3719
10	46	0.9499	0.4022	0.5477	0.2819	0.0700	0.3519	0.0000	\$15,180	\$0	0.4022	0.5477
46	46A	1.1554	0.4892	0.6662	0.2819	0.1663	0.4481	0.0000	\$7,620	\$0	0.4892	0.6662
46A	COLEBROOK	0.8194	0.4604	0.3590	0.3038	0.1663	0.4700	0.1110	\$150,000	\$4,132	0.3494	0.4700
PS	61	0.8864	0.5748	0.3136	0.3038	0.1663	0.4700	0.1564	\$84,600	\$3,028	0.4184	0.4700

		A	B	C	D	E	F	G	H	I	J	K
MH	MH	Design Capacity (MGD)	WDTA Allocation 1978 (MGD)	MJTA Allocation 1978 (MGD)	MJTA Existing Flow (MGD)	MJTA Future Development (MGD)	MJTA Total Requirement (MGD)	MJTA Shortfall & Request (MGD)	Replacement Cost 1995	MJTA Contribution	New WDTA Allocation (MGD)	New MJTA Allocation (MGD)
61	60	1.2260	0.8020	0.4239	0.3038	0.1663	0.4700	0.0461	\$12,110	\$92	0.7560	0.4700
60	62	1.6509	1.0800	0.5709	0.3038	0.1663	0.4700	0.0000	\$10,780	\$0	1.0800	0.5709
62	63	0.8953	0.5857	0.3096	0.3038	0.1663	0.4700	0.1604	\$7,000	\$255	0.4253	0.4700
63	63A	1.8458	1.2075	0.6383	0.3038	0.1663	0.4700	0.0000	\$13,650	\$0	1.2075	0.6383
63A	64A	1.8512	1.2111	0.6401	0.3038	0.1663	0.4700	0.0000	\$2,450	\$0	1.2111	0.6401
66	67	0.8373	0.4551	0.3822	0.0031	0.0038	0.0069	0.0000	\$15,240	\$0	0.4551	0.3822
67	68	0.7808	0.4244	0.3564	0.0113	0.0038	0.0150	0.0000	\$13,200	\$0	0.4244	0.3564
69	68	1.0791	0.5865	0.4926	0.0050	0.0000	0.0050	0.0000	\$18,600	\$0	0.5865	0.4926
68	65	0.4938	0.3070	0.1869	0.0163	0.0000	0.0163	0.0000	\$12,660	\$0	0.3070	0.1869
65	64A	1.1581	0.7199	0.4382	0.0163	0.0000	0.0163	0.0000	\$6,300	\$0	0.7199	0.4382
64A	64	0.8953	0.5905	0.3049	0.3200	0.1700	0.4900	0.1851	\$24,640	\$1,036	0.4053	0.4900
64	64B	1.5443	1.0185	0.5258	0.3200	0.1700	0.4900	0.0000	\$28,000	\$0	1.0185	0.5258
64B	64C	1.7222	1.1358	0.5864	0.3200	0.1700	0.4900	0.0000	\$11,550	\$0	1.1358	0.5864
64C	78	1.5313	1.0099	0.5214	0.3200	0.1700	0.4900	0.0000	\$23,870	\$0	1.0099	0.5214
78	78C	1.4297	0.9429	0.4868	0.3200	0.1700	0.4900	0.0032	\$2,940	\$1	0.9397	0.4900
78C	CAMERON	0.8654	0.6529	0.3025	0.3200	0.1700	0.4900	0.1875	\$160,000	\$7,131	0.3664	0.4900
FM	204	1.5764	1.1337	0.4457	0.3200	0.1700	0.4900	0.0443	\$244,725	\$1,395	1.0894	0.4900
204	205	1.4559	1.0472	0.4087	0.3231	0.1706	0.4938	0.0851	\$30,400	\$361	0.8622	0.4938
205	208A	1.4559	1.0472	0.4087	0.3238	0.1706	0.4944	0.0857	\$8,360	\$100	0.8615	0.4944
206A	206	1.4559	1.0472	0.4087	0.3244	0.1706	0.4950	0.0863	\$8,360	\$101	0.8609	0.4950
206	207	2.0331	1.4624	0.5707	0.3263	0.1706	0.4969	0.0000	\$20,140	\$0	1.4624	0.5707
207	208	4.8561	3.4930	1.3631	0.3275	0.1706	0.4981	0.0000	\$17,860	\$0	3.4930	1.3631
208	209	3.1563	2.2704	0.8860	0.3281	0.1706	0.4988	0.0000	\$15,200	\$0	2.2704	0.8860
209	210	4.8342	3.4772	1.3570	0.3306	0.1706	0.5013	0.0000	\$22,116	\$0	3.4772	1.3570
210	211	4.8040	3.3117	1.2923	0.3306	0.1706	0.5013	0.0000	\$29,108	\$0	3.3117	1.2923
211	212	1.7979	1.2932	0.5047	0.3306	0.1706	0.5013	0.0000	\$18,620	\$0	1.2932	0.5047
212	219A	3.4222	2.4616	0.9606	0.3306	0.1706	0.5013	0.0000	\$9,740	\$0	2.4616	0.9606
219A	220A	1.4559	1.0650	0.3909	0.3306	0.1706	0.5013	0.1103	\$30,172	\$465	0.9547	0.5013
220A	221	2.9118	2.1300	0.7818	0.3306	0.1706	0.5013	0.0000	\$15,048	\$0	2.1300	0.7818
221	220	2.3923	1.7500	0.6423	0.3306	0.1706	0.5013	0.0000	\$28,348	\$0	1.7500	0.6423
222	221	2.3249	1.7007	0.6242	0.3306	0.1706	0.5013	0.0000	\$22,344	\$0	1.7007	0.6242
223	224	2.1595	1.5796	0.5798	0.3306	0.1706	0.5013	0.0000	\$21,584	\$0	1.5796	0.5798
224	225	1.8936	1.4583	0.5353	0.3306	0.1706	0.5013	0.0000	\$13,756	\$0	1.4583	0.5353
225	226	2.6247	1.9200	0.7047	0.3306	0.1706	0.5013	0.0000	\$30,248	\$0	1.9200	0.7047
226	227	1.4559	1.0650	0.3909	0.3306	0.1706	0.5013	0.1103	\$29,412	\$453	0.9547	0.5013
227	228	2.2789	1.6670	0.6119	0.3306	0.1706	0.5013	0.0000	\$16,189	\$0	1.6670	0.6119
228	229	2.0845	1.5248	0.5597	0.3306	0.1706	0.5013	0.0000	\$30,400	\$0	1.5248	0.5597
229	230	1.4559	1.0650	0.3909	0.3306	0.1706	0.5013	0.1103	\$30,400	\$468	0.9547	0.5013
230	231	1.7831	1.3044	0.4768	0.3306	0.1706	0.5013	0.0225	\$30,400	\$78	1.2819	0.5013
231	232	1.4559	1.0650	0.3909	0.3306	0.1706	0.5013	0.1103	\$18,620	\$287	0.9547	0.5013
232	233	2.6397	2.0645	0.5752	0.3306	0.1706	0.5013	0.0000	\$34,000	\$0	2.0645	0.5752
233	264	2.8397	2.0645	0.5752	0.3306	0.1706	0.5013	0.0000	\$31,025	\$0	2.0645	0.5752
264	276	3.0386	2.3765	0.6621	0.3306	0.1706	0.5013	0.0000	\$25,585	\$0	2.3765	0.6621

		A	B	C	D	E	F	G	H	I	J	K
		Design Capacity (MGD)	WDTA Allocation 1978 (MGD)	MJTA Allocation 1978 (MGD)	MJTA Existing Flow (MGD)	MJTA Future Development (MGD)	MJTA Total Requirement (MGD)	MJTA Shortfall & Request (MGD)	Replacement Cost 1995	MJTA Contribution	New WDTA Allocation (MGD)	New MJTA Allocation (MGD)
MH	MH											
276	277	3.2080	2.5074	0.6986	0.3306	0.1706	0.5013	0.0000	\$33,915	\$0	2.5074	0.6986
277	278	4.0034	3.1310	0.8723	0.3306	0.1706	0.5013	0.0000	\$34,170	\$0	3.1310	0.8723
278	279	3.1512	2.4645	0.8866	0.3306	0.1706	0.5013	0.0000	\$33,830	\$0	2.4645	0.6866
279	280	2.7999	2.1898	0.6101	0.3306	0.1706	0.5013	0.0000	\$30,685	\$0	2.1898	0.6101
280	295	3.9816	3.1140	0.8676	0.3306	0.1706	0.5013	0.0000	\$28,390	\$0	3.1140	0.8876
295	295A	2.6397	2.0645	0.5752	0.3306	0.1706	0.5013	0.0000	\$17,000	\$0	2.0645	0.5752
295A	296	2.5043	1.9586	0.5457	0.3306	0.1706	0.5013	0.0000	\$22,440	\$0	1.9586	0.5457
296	297	2.6388	1.9856	0.5532	0.3306	0.1706	0.5013	0.0000	\$34,000	\$0	1.9856	0.5532
309	310	2.7999	2.2262	0.5737	0.3306	0.1706	0.5013	0.0000	\$34,000	\$0	2.2262	0.5737
310	311	1.6165	1.2853	0.3312	0.3306	0.1706	0.5013	0.1700	\$14,195	\$304	1.1153	0.5013
311	312	1.6165	1.2853	0.3312	0.3306	0.1706	0.5013	0.1700	\$34,000	\$727	1.1153	0.6013
312	313	1.6165	1.2853	0.3312	0.3306	0.1706	0.5013	0.1700	\$24,650	\$527	1.1153	0.5013
313	314	5.4420	4.3269	1.1151	0.3306	0.1706	0.5013	0.0000	\$24,650	\$0	4.3269	1.1151
314	315	2.9513	2.3466	0.6047	0.3306	0.1706	0.5013	0.0000	\$34,000	\$0	2.3466	0.6047
315	316	1.6165	1.2853	0.3312	0.3306	0.1706	0.5013	0.1700	\$23,290	\$498	1.1153	0.5013
316	317	2.4693	1.9833	0.5060	0.3306	0.1706	0.5013	0.0000	\$23,035	\$0	1.9633	0.5060
317	318	3.3908	2.6960	0.6948	0.3306	0.1706	0.5013	0.0000	\$33,320	\$0	2.6960	0.6948
318	319	2.2086	1.7560	0.4525	0.3306	0.1706	0.5013	0.0487	\$27,030	\$121	1.7073	0.5013
319	320	3.8931	3.0954	0.7977	0.3306	0.1706	0.5013	0.0000	\$34,000	\$0	3.0954	0.7977
320	321	3.4670	2.7566	0.7104	0.3306	0.1706	0.5013	0.0000	\$18,360	\$0	2.7566	0.7104
321	322	3.8931	3.0954	0.7977	0.3306	0.1706	0.5013	0.0000	\$34,000	\$0	3.0954	0.7977
322	323	3.0954	2.4611	0.6342	0.3306	0.1706	0.5013	0.0000	\$31,025	\$0	2.4611	0.6342
323	324	3.4164	2.7164	0.7000	0.3306	0.1706	0.5013	0.0000	\$25,500	\$0	2.7164	0.7000
324	325	1.6165	1.2853	0.3312	0.3306	0.1706	0.5013	0.1700	\$34,000	\$727	1.1153	0.5013
325	326	1.6165	1.2853	0.3312	0.3306	0.1706	0.5013	0.1700	\$21,260	\$454	1.1153	0.5013
326	327	1.6165	1.2853	0.3312	0.3306	0.1706	0.5013	0.1700	\$20,910	\$447	1.1153	0.5013
327	328	4.1107	3.2684	0.8423	0.3306	0.1706	0.5013	0.0000	\$27,625	\$0	3.2684	0.8423
328	329	4.3174	3.4328	0.8846	0.3306	0.1706	0.5013	0.0000	\$31,875	\$0	3.4328	0.8846
329	330	3.8706	3.0775	0.7931	0.3306	0.1706	0.5013	0.0000	\$29,750	\$0	3.0775	0.7931
330	331	4.4171	3.5121	0.9051	0.3306	0.1706	0.5013	0.0000	\$18,615	\$0	3.5121	0.9051
331	MILLER	1.0224	0.7504	0.2720	0.3306	0.1706	0.5013	0.2293	\$170,000	\$30,000	0.7600	0.5800
FM	STP	2.4677	1.9786	0.4891	0.3306	0.1706	0.5013	0.0122	\$616,700	\$729	1.9666	0.6013

TOTAL Contribution by M. \$65,594

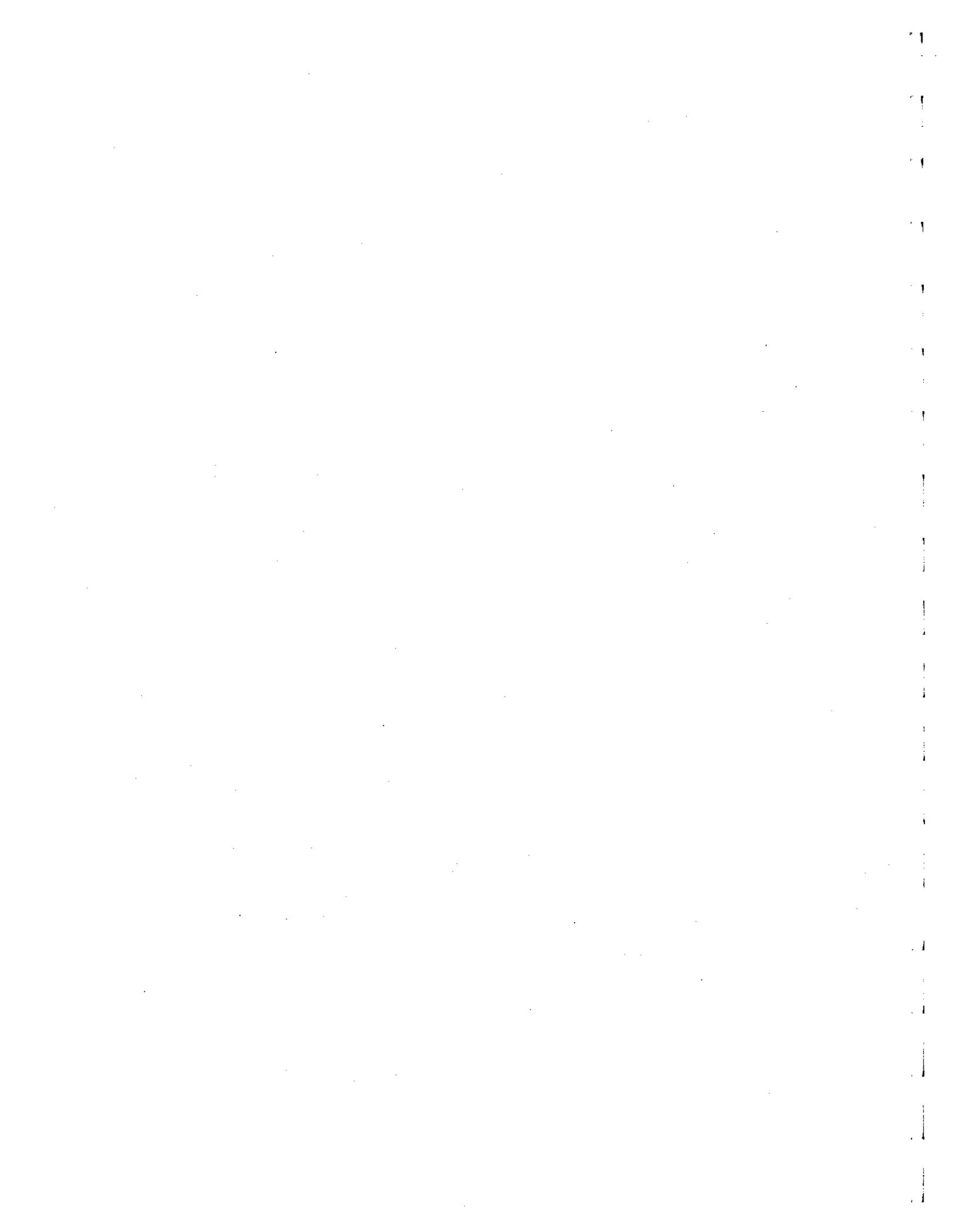


EXHIBIT M

West Donegal Township
Mount Joy Township
Lancaster County, Pennsylvania

Calculation of Capital Contribution
for Additional Mount Joy Authority Capacity

The capital contribution for purchase of additional capacity by Mount Joy Authority shall be calculated in the following manner:

For Each Gravity Sewer Line, Force Main, and Pumping Station:

$$\text{Capital Contribution} = [(D - C) / A] \times E \times F$$

Where:

- A = The maximum design capacity of the existing sewer line or force main (Column "A" in Exhibit L).
- C = The current Mount Joy Authority allocation based on January 1, 1978 Agreement (Column "C" in Exhibit L).
- D = The total revised maximum design flow requested by Mount Joy Authority (Column "F" in Exhibit L).
- E = The ratio of the local cost, reflecting all grants received, to the total original construction cost for the project (Calculated to be 0.2033).
- F = The total estimated cost to construct the sewer line or force main, as calculated by the consulting engineer for the West Donegal Authority, as of the date of the request for additional capacity by Mount Joy Authority (Column "H" in Exhibit L).

NOTE: This calculation shall only apply in situations where the total reserve capacity available for release by West Donegal Authority equals or exceeds the requested additional capacity by Mount Joy Authority.

EXHIBIT N

West Donegal Township
Mount Joy Township
Lancaster County, Pennsylvania

Calculation of Interest paid by WDTA
on Transfer Capacity

Estimated Total Replacement Cost (1995)	\$5,457,484	
Original Construction Cost (1978/9)	\$3,707,600	
Original Cost/Replacement Cost (Factor)	0.679	
Original loan was at 5.5% for 13 years (1979-1992)		
Refinanced loan was at 6.5% from 1992 to present (1992-1996)		
Average interest rate over 17 years	5.74	
Value of Transfer Request 1995 dollars (Exhibit L)	\$35,594	
Value of Transfer Request 1979 dollars	\$24,180	
Amortize \$24,180 at 5.74% for 17 years to determine annual payment and interest paid for a commodity valued at \$24,180 in 1979		
Total payment is 17-years at \$2,265 per year	\$38,503	
INTEREST PAID = TOTAL PAID - ORIGINAL VALUE		\$14,323

EXHIBIT P

West Donegal Township
Mount Joy Township
Lancaster County, Pennsylvania

Transfer and Re-allocation of Capacities in WDTA Facilities

SUMMARY

A.	Pumping Capacity		
1.	Nolt Road	\$5,698	
2.	Colebrook Road	4,132	
3.	Cameron Street	<u>7,131</u>	
	Subtotal:		\$16,961
B.	Forcemain Capacity		
1.	Nolt	\$3,180	
2.	Colebrook	3,028	
3.	Cameron	1,395	
4.	Miller	<u>729</u>	
	Subtotal:		8,332
C.	Gravity Sewer Capacity		10,301
D.	Interest Paid on Original Loans		14,323
E.	Upgrade Miller Road Pumping Station		<u>30,000</u>
	TOTAL:		\$79,917

EXHIBIT Q

West Donegal Township
Mount Joy Township
Lancaster County, Pennsylvania

Calculation of Quarterly
Operation and Maintenance Charge

The Quarterly Operation and Maintenance Charge to be Paid by Mount Joy Authority to West Donegal Authority for the Jointly Used Facilities shall be calculated in the following manner:

1. Sewer Line Related

$$(A / B) \times C \times 0.25 \times D = E$$

2. Pump Station Related

$$(F / G) \times C \times 0.75 \times D = H$$

$$\text{TOTAL MOUNT JOY SHARE} = E + H$$

Where:

- A = Total length of jointly used sewer lines in the West Donegal sewer system.
- B = Total length of sewer lines in the West Donegal sewer system.
- C = The percentage of the quarterly sewage flow from Mount Joy Authority as compared to the total quarterly sewage flow from Mount Joy Authority and West Donegal Authority.
- D = One fourth of the total actual operation and maintenance cost to be shared by Mount Joy Authority for the previous year.
- E = The total estimated quarterly cost to Mount Joy Authority for the jointly used sewer lines.
- F = The total number of jointly used pumping stations in the West Donegal sewer system.
- G = The total number of pumping stations in the West Donegal sewer system.

H = The total estimated quarterly cost to Mount Joy Authority for the jointly used pumping stations.

The Annual Adjustment to the Operation and Maintenance Charge for the Jointly Used Facilities shall be calculated in the following manner based on the actual shared costs. The Annual Adjustment shall be applied to the 1st Quarterly Invoice of the following year.

1. Sewer Line Related

$$(A / B) \times I \times 0.25 \times J = K$$

2. Pump Station Related

$$(F / G) \times I \times 0.75 \times J = L$$

$$\text{TOTAL MOUNT JOY ADJUSTMENT} = K + L - M$$

Where:

A, B, F, and G are as defined above.

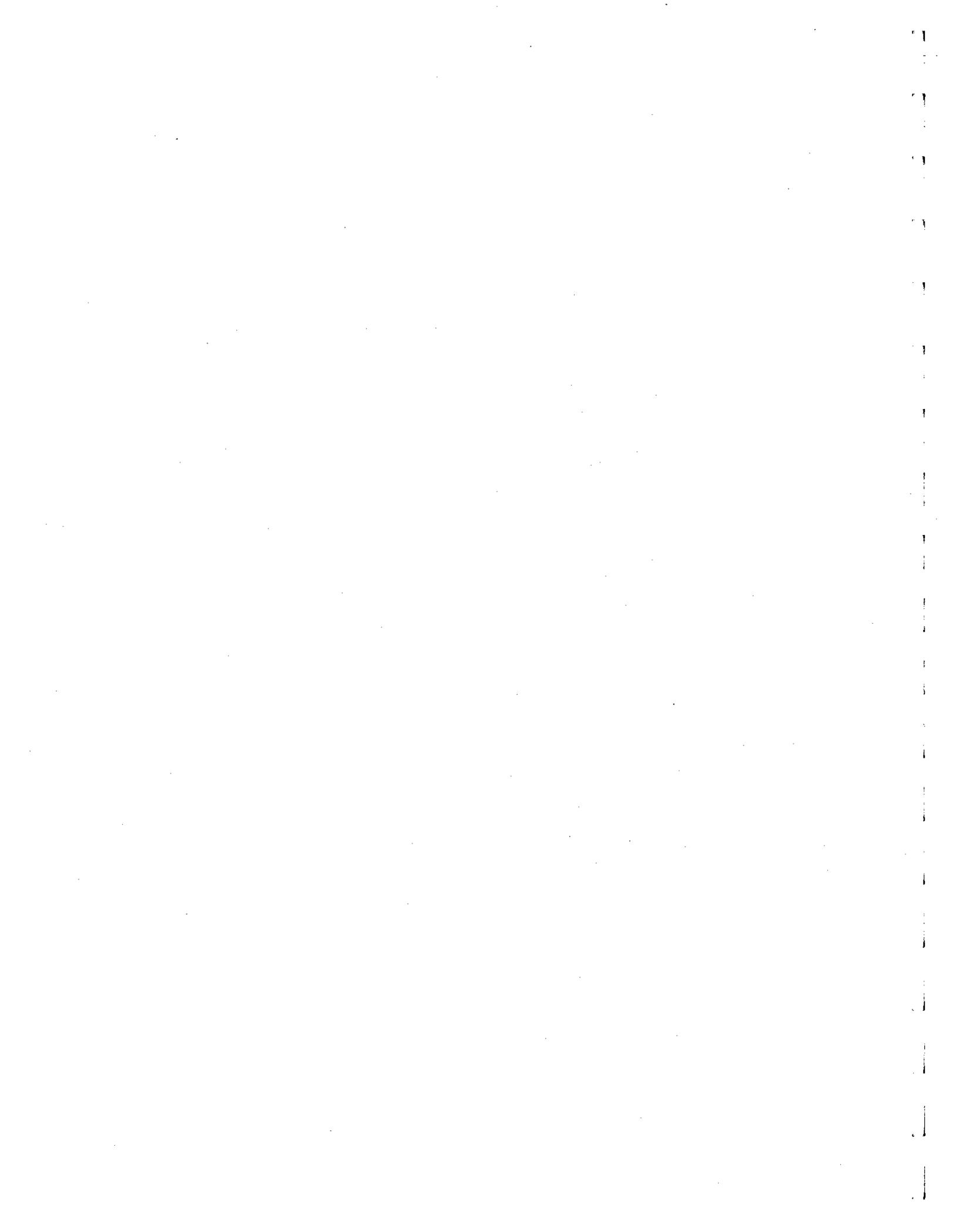
I = The percentage of the annual sewage flow from Mount Joy Authority as compared to the total annual sewage flow from Mount Joy Authority and West Donegal Authority.

J = The total actual operation and maintenance cost to be shared by Mount Joy Authority for the current year.

K = The total annual cost to Mount Joy Authority for the jointly used sewer lines.

L = The total annual cost to Mount Joy Authority for the jointly used pumping stations.

M = The total amount actually paid by the Mount Joy Authority toward operation and maintenance of the jointly used facilities for the previous four quarters.



AGREEMENT

THIS AGREEMENT, made this 8th day of February, 1989, is between the BOROUGH OF ELIZABETHTOWN ("Borough"), and the MOUNT JOY TOWNSHIP AUTHORITY ("Authority"), each of Lancaster County, Pennsylvania.

WHEREAS, the Borough of Elizabethtown is a Pennsylvania municipality and political subdivision organized and existing under the provisions of the Borough Code; and

WHEREAS, the Mount Joy Township Authority is a Municipal Authority organized and existing under the provisions of the Municipality Authorities Act of 1945, having been duly incorporated by the Township of Mount Joy ("Township"); and

WHEREAS, the Borough and Township are neighboring municipalities situate in Lancaster County, Pennsylvania; and

WHEREAS, the Borough owns and operates a water supply and distribution system which currently provides water and fire protection service to a portion or portions of the Township adjoining the Borough in addition to service within the boundaries of the Borough; and

WHEREAS, the Borough's current water supply capacity is such that it must limit the provision of any additional water supply to consumers located within the Township, except as agreed to herein below; and

WHEREAS, the Township is experiencing a growth in its population and an upsurge in new development and construction; and

WHEREAS, it is anticipated that the Township will continue to grow and new construction will continue to be undertaken, all of which will likely create an increased demand for public water supply and distribution; and

WHEREAS, the Authority recognizes the need for reliable and satisfactory public water service within the Township to achieve the goals of planned development within the Township and to promote and protect the public health and welfare of the Township's citizenry; and

WHEREAS, the Authority intends to provide public water service within the Township thereby fulfilling an essential public health service on behalf of the residents of the Township; and

WHEREAS, the Borough and the Authority acknowledge and agree that the goals of planned development within the Township can best be performed and achieved by the Authority's having the ability to provide water and other essential services to the Township's residents; and

WHEREAS, the Borough and the Authority acknowledge and agree that the implementation of planned development can best be achieved by the Authority's provision of water service to the Township's citizenry; and

WHEREAS, the Authority has determined to study the feasibility of providing water service to the Township's residents; and

WHEREAS, the Authority has determined that it is uniquely able to regulate development and resulting demand for water service through the Authority's ownership and operation of an Authority owned and operated water supply and water distribution system; and

WHEREAS, the Authority possesses the power to acquire, construct, and operate water supply and distribution facilities within the Township under the provisions of its charter and the provisions of the Municipality Authorities Act of 1945, as amended and supplemented; and

WHEREAS, the Authority ultimately intends to develop its own sources of water supply; and

WHEREAS, the Authority has concluded that it can best serve the needs of the Township by being the sole provider of public water service within the Township and the Borough shares in such conclusion; and

WHEREAS, the Borough is willing to transfer certain water distribution facilities to the Authority and, with appropriate approval, to cease providing water service to the public within Mount Joy Township.

NOW, BE IT KNOWN THAT THE AUTHORITY AND THE BOROUGH AGREE AS FOLLOWS:

ARTICLE I

TRANSFER OF EXISTING WATER DISTRIBUTION FACILITIES

Section 1.01. Borough agrees to convey all of its right, title and interest in its water distribution facilities situate within Township of Mount Joy and used exclusively to provide service within such Township. The facilities to be conveyed include water mains and services, hydrants, valves, meters and appurtenances thereto, all of which are more specifically described, shown or listed in Exhibit A-4 attached hereto. In addition to the water distribution facilities to be conveyed by the Borough to the Authority, the Borough agrees to assign unto the Authority all of the Borough's right, title and interest in and to rights of way or easements owned by the Borough and used in connection with the facilities to be conveyed to the Authority. The Borough shall retain ownership of, and responsibility for, certain existing water supply and transmission system facilities and proposed transmission facilities as outlined in Exhibits A-2 and A-3 attached hereto.

Section 1.02. The conveyance of the water distribution facilities mentioned in Section 1.01 will be accomplished by Bill of Sale stating a consideration of One (\$1.00) Dollar and the rights of way will be conveyed by written assignment and acknowledgment.

Section 1.03. The Borough will retain ownership of all facilities used by it in providing water service to Borough

residents, specifically including all water supply facilities such as wells, storage tanks and the like.

Section 1.04. Authority agrees to accept the facilities to be conveyed by the Borough to the Authority and, upon the completion of such conveyance, to be solely responsible for the maintenance, operation and repair of such facilities. Authority further agrees that upon conveyance of such facilities, it will be solely responsible for the providing of public water service to the public in the Township and to indemnify and hold harmless the Borough from any claims, suits, damages and/or liability resulting from the provision of public water service to the public in Mount Joy Township on and after the completion of the transaction and conveyance contemplated by this Agreement; Provided, however, that the Authority's indemnification of the Borough does not extend to the quality of water to be supplied by the Borough to the Authority under the terms of this Agreement.

ARTICLE II

WATER SUPPLY

Section 2.01. Borough and Authority recognize that while the Borough and Authority intend to develop their own sources of supply, such development will take an undetermined period of time due to regulatory requirements and funding considerations. Accordingly, the Borough agrees to supply to the Authority, on a wholesale or bulk basis, a supply of water for the term outlined in this Agreement in order to permit the Authority to provide

public water service to the Township's citizenry upon the completion of the transaction contemplated by this Agreement. Authority acknowledges that the provision of this wholesale or bulk service by the Borough does not constitute the supplying of water service to the public by the Borough in the Township of Mount Joy and that on and after the completion of the conveyances contemplated hereunder, Authority will alone be responsible for the provision of such service to the public within the Township. All water supplied from the Borough's mains to the Authority under this Agreement will meet applicable federal and state standards and requirements; provided, however, that the failure to meet such standards shall not abate the Authority's duty to pay for water service rendered so long as the Borough is acting in good faith to correct any alleged deficiency.

Section 2.02. The Authority shall be entitled to receive and the Borough agrees to provide water supply to the Authority in amounts meeting the following parameters or limitations:

(a) Authority demand will be limited to an average monthly rate of one hundred twenty-five thousand (125,000) gallons per day ("gpd") and a maximum or peak daily rate of one hundred seventy-five thousand (175,000) gpd. Except in times of emergency water supply shortfalls, or other causes beyond control of the Borough, the flow rates listed herein shall be made available at all times to the Authority during the term outlined herein.

(b) Unless otherwise agreed in writing by the parties hereto, the Authority agrees to accept a minimum of three million (3,000,000) gallons per quarter from the Borough.

(c) All flow rates and quantities listed in this Article exclude water used by the Authority or its customers for fire fighting purposes.

Section 2.03. In the event conditions exist which prohibit Borough from supplying water to the Authority at the flow rates and quantities outlined in Section 2.02, Borough will notify Authority of such emergency situation. Upon receipt of notification of an emergency situation, Authority shall institute appropriate measures to reduce water demand to the level which the Borough can reasonably supply during the period of such emergency.

Section 2.04. Water supplied to the Authority shall be billed on a quarterly basis at applicable rates as outlined hereinbelow. The total quantity shall be determined by adding individual customer meter readings.

Section 2.05. After conveyance of the Borough water distribution facilities located within the Township and used exclusively to provide water service to the Township's residents, the Authority shall pay Borough for water supplied to the Authority pursuant to this Agreement as hereinafter provided.

Section 2.06. The quarterly water supply charge shall be determined as set forth below:

(a) The Authority shall read all customer meters on a quarterly cycle. At the end of each billing cycle, the Authority shall calculate and total all the individual meter readings of its customers to determine the total quantity of water supplied. Within five (5) working days of the end of each billing cycle, the Authority shall notify the Borough of the total and the Borough shall prepare a bill and submit it to the Authority for payment.

(b) The Borough shall bill the Authority at the rate determined in accordance with the provisions of Exhibit A-1 attached hereto. The rate initially determined by reference to such Exhibit shall be subject to change and shall be fair and equitable.

(c) The Authority agrees to pay each quarterly bill within forty-five (45) days of the invoice date. If payment is late, an interest charge of one (1.0) percent per month shall be added to the bill for each month the invoice remains unpaid.

(d) The Authority will maintain all customer meters within generally acceptable accuracy ranges and will repair or replace all meters which are found to be deficient in this respect. In cases where a meter is found to be inoperable or inaccurate, and an estimated reading is used, the estimated reading will be calculated in accordance with the Authority's Rules and Regulations. Authority agrees to adopt Rules and

Regulations respecting estimated readings, bills or consumption paralleling the rules and regulations of the Borough and basing such estimates on historic consumption figures.

Section 2.07. Authority and Borough agree that in the event DER or other jurisdictional agencies or bodies shall impose further limitations or conditions on the Borough which have the effect of reducing the Borough's water supply capacity, the parties will negotiate proportional or proportionate adjustments to this Agreement.

Section 2.08. The initial term of the water supply portions of this Agreement (Article II) shall be for a term of five years dating from the date of the completion of the conveyances contemplated by Article I hereunder. Thereafter, this Agreement shall automatically be renewed for two year periods unless either party shall provide written notice to the other party of its intent to terminate this Agreement as of the next succeeding termination date at least one year prior to such termination date. During the initial term or any renewal term of the water supply portions of this Agreement, Authority may, upon providing written notice to the Borough at least one year in advance of the effective date thereof, release or turn back to the Borough a portion or portions of the water supply capacity reserved hereunder for the Authority.

Section 2.09. Upon completion of the conveyances contemplated by Article I of this Agreement, Borough shall have no further obligation or duty to provide water service to the public in Mount Joy Township, Lancaster County, Pennsylvania and Borough's obligations therein will consist solely of the performance of its covenants under this Agreement.

Section 2.10. Borough and Authority agree not to unduly interfere with the plans of the other for the acquisition, installation and/or construction of additional sources of water supply wherever such sources or planned additional sources may be situate.

Section 2.11. Borough and Authority agree to develop a plan for the construction of emergency interconnections between the two water systems in order to help alleviate temporary water supply shortfalls that may be experienced by either system.

ARTICLE III

MISCELLANEOUS PROVISIONS

Section 3.01. Authority covenants to establish, maintain, levy, impose and collect charges, rentals and fees relating to operation of its water system in amounts sufficient to enable it to pay the Borough water supply and other charges required under this Agreement.

All such rates and charges shall be in compliance with all applicable requirements of the Commonwealth of Pennsylvania and any other applicable statutory provisions, rules or regulations

in effect from time to time. The parties hereto agree to enter into appropriate amendments or supplements to this Agreement when and if necessary to equitably apportion any charges required by such requirements, rules, regulations or statutory provisions.

Section 3.02. Each party shall provide to the other all information relevant to the proper administration of their respective responsibilities under this Agreement in such form and detail as may reasonably be requested, and each shall permit the other to examine and inspect their respective records and physical facilities as may be necessary.

Section 3.03. Each of the parties hereto agree to employ a Consulting Engineer.

Section 3.04. Authority agrees to advise the Borough, in writing by March 31 of each year, of the following: (1) the number of connections made to the Authority's distribution system during the preceding calendar year and the total number of connections existing as of the last day of that year, (2) the nature of the use of the properties so connected during the preceding calendar year, and (3) the opinion of the Authority's Consulting Engineer as to the expected water demand expressed in terms of expected annual requirements, average daily demand and peak daily demand. Should the water demand on the Authority's distribution system at any time reach the point such that additional connections could result in the Authority exceeding the parameters or limitations set forth in Section 2.02, the

Authority shall not permit any additional connections to its system until the matter is resolved.

Section 3.05. The Authority will provide the Borough with a copy of each development plan and plans for any major construction which it receives and for which public water service is to be provided. The Borough shall review such development plans to determine potential impacts on its existing distribution system and water supply and shall notify the Authority within thirty (30) days of its findings. Authority agrees not to permit any new connections to its distribution system where such new connections will have a deleterious impact upon the Borough's water supply system, its water distribution system or its ability to provide service within the Borough.

Section 3.06. Should any one or more of the provisions of this Agreement for any reason be held illegal or invalid, such illegality or invalidity shall not effect any other provisions of this Agreement and this Agreement shall in such circumstances be construed and enforced as if such illegal or invalid provisions had not been contained herein.

Section 3.07. Nothing in this Agreement shall limit the discretion of the Authority in determining the portions of the Township in which its new distribution facilities or independent sources of water supply are to be constructed or obtained and the time or times of such construction or acquisition.

Section 3.08. This Agreement shall, after appropriate approval of the governing bodies of the parties, be executed in multiple counterparts, any of which may and shall constitute an original of such Agreement for all purposes.

Section 3.09. Borough and Authority agree to form an Operating Advisory Committee whose purpose will be to study, consider and make recommendations concerning the financial and functional operations of the water supply and distribution systems of the Authority and the Borough. The Operating Advisory Committee shall review and make recommendations on matters relating to the water supply and distribution systems of the Borough and those of the Authority including, among other matters or topics which may be appropriate, the following:

(1) Volumes of water flow delivered or received by the Borough and/or Authority and relationship of actual deliveries/receipts to the capacity or capacities reserved under this Agreement; and

(2) Physical condition, of the respective water supply and distribution systems of the Authority and maintenance and Borough programs implemented in connection with each such system; and

(3) Water supply treatment methods and costs; and

(4) Sources of supply, including wells; and

(5) Protection of watershed areas, wells and other sources of supply; and

(6) Annual operating budgets of the Authority and Borough in connection with the supplying of water service to their respective consumers; and

(7) Storage capacity of the respective systems; and

(8) Flow projections and projections of requirements for each water supply and/or distribution system; and

(9) Capital additions to any of the systems and major expenditures connected with such additions, replacements or improvements including allocations of costs;

(10) Adjustments to overall capacity and/or reserved capacity; and

(11) The establishment of emergency interconnections.

The Operating Advisory Committee may include other municipalities or municipality authorities as may be appropriate in the judgment of Authority and Borough.

ARTICLE IV

CONDITIONS PRECEDENT/CONTINGENCIES

Section 4.01. This Agreement shall not take effect until such time as it is approved by the governing bodies of the Authority and the Borough, as evidenced by an appropriate resolution of the Authority and an ordinance or other approval of the Borough. The Borough agrees to provide to the Authority a certified copy of its ordinance or minutes reflecting approval of this Agreement and the Authority agrees to provide to the Borough a certified copy of its resolution approving this Agreement.

Section 4.02. The conveyances, duties and responsibilities of the parties to this Agreement are subject to the following conditions precedent and contingencies:

(a) The approval of the Pennsylvania Public Utility Commission of the abandonment by the Borough of its supplying of water service to the public in the Township of Mount Joy. Borough agrees to file an Application with the Commission for approval of such abandonment of service and the Borough and Authority agree to cooperate in pursuing such approval.

(b) The receipt of approval from such other jurisdictional regulatory agencies, if any, required for the Authority's beginning to provide water service to the public in Mount Joy Township; and

(c) The receipt by the appropriate party of such other approvals, certifications, licenses or permits, if any, as may be required to implement the intent of this Agreement.

ARTICLE V

APPLICATION OF AGREEMENT

Section 5.01. This Agreement shall not apply to any matters contained herein if that matter does not pertain to the water supply provided by the Borough to the Authority.

IN WITNESS WHEREOF, the parties hereto, intending to be legally bound hereby, and having first secured appropriate approval by their respective governing bodies, have caused this

Agreement to be duly executed as of the date first mentioned above.

ATTEST:

BOROUGH OF ELIZABETHTOWN

[Signature]

BY:

John M. Buch

ATTEST:

MOUNT JOY TOWNSHIP AUTHORITY

Teresa K. Kossowicz

BY:

Charles R. Baird

EXHIBIT A-1

WATER FEE/RATE AGREEMENT BETWEEN ELIZABETHTOWN BOROUGH
AND MOUNT JOY TOWNSHIP AUTHORITY

BACKGROUND: Pursuant to this Agreement, Elizabethtown Borough and Mount Joy Township Authority developed water supply fees relating to: (a) operation and maintenance costs and (b) acquisition and capital improvement costs.

The parties to this Agreement have structured the related water supply costs as detailed herein and the Authority agrees to pay the Borough the amount determined by the two components multiplied by the volumes delivered and a factor for unaccounted for water as follows:

(A) Operation and Maintenance Cost

Total Produced Gallons (Prior Year) \$000,000,000 (1)
Annual Shared O& M Costs 000,000 (2)

$\frac{\text{O\&M Cost}}{\text{Total Produced Gallons}} \times 1000 = \text{\$/thousand gallons}$

Add: Unaccounted for water rate (prior year) not to exceed 20% (3)

$\text{\$/thousand gallons} \times 1.2 = \text{\$0.00/thousand gallons}$

(B) Acquisition/Capital ("A/C") Cost

Water Revenue Bond Issue (1986) \$ 2,600,000
Acquisition Cost \$ 1,635,230
Capital Improvements \$ 964,005
Shared Capital Improvements \$ 578,885
Average Annual Debt Service \$ 257,268
Shared Annual Debt Service \$ 218,678

$\frac{\text{MJTA Consumed Gallons} \times 1.2}{\text{Total Produced Gallons}} = \text{\%}$

Shared Annual Debt Service \times \% = MJTA A/C Cost (4)

- (1) Total Produced Gallons = total metered gallons annually at all water supply points for the entire system. In 1988, total produced gallons was 328,477,200.
- (2) Annual Shared O&M Cost = total budget for Water Revenue Fund less debt service and other non-applicable costs. In 1989, annual shared O&M cost is \$517,728.
- (3) Unaccounted for Water Rate = rate for unaccounted for water not to exceed 20% regardless of actual figures. In 1988, unaccounted for water rate is 17%.

- (4) Acquisition/Capital Cost = cost for acquisition/capital improvement. May be paid per thousand gallons at the option of Mount Joy Township Authority. This cost will terminate upon bond issue maturation in 2005, unless refinanced prior to that time.

Both Operation and Maintenance Cost and Acquisition/Capital Improvement Cost will be amended annually with updated figures. The Borough will provide the Authority with all relevant supporting documentation for these cost calculations. The costs will be established and set for the succeeding year in sufficient time to permit an orderly budgeting process. Periodic budget reviews shall be submitted to the Authority during the year.

EXHIBIT A-2

BOROUGH TO RETAIN OWNERSHIP AND
MAINTENANCE FOR CERTAIN WATER
SUPPLY AND TRANSMISSION FACILITIES
IN MOUNT JOY TOWNSHIP

BACKGROUND: Certain water supply and transmission facilities are to be retained by Elizabethtown Borough that directly affect: (a) the supply of water within the transmission system or (b) transmission facilities that constitute a major source of supply to Borough customers.

The parties to this Agreement understand that the following facilities will remain in the ownership of the Borough. The Borough will be responsible for the maintenance and improvement of these facilities and their regular inspection. All other facilities shall henceforth be transferred to the Mount Joy Township Authority. The facilities to be retained by the Borough are listed below:

(A) Water Supply Facilities

- (1) Ridge Road 500,000 gallon standpipe and well #3.
- (2) Groff Avenue (Ridge Road) 750,000 gallon standpipe.
- (3) Conewago Pumping Station located on Mill Road.

(B) Transmission System Facilities

- (1) North Hanover Street transmission lines from Borough line to Holly Street.
- (2) Mount Gretna Road transmission lines from Holly Street to Radio Road.
- (3) Radio Road transmission lines from Mount Gretna Road to East Willow Street (including twelve inch line from Cranfield Court to Radio Road).
- (4) Campus Road transmission lines from Groff Avenue (Ridge Road) to College Avenue.
- (5) College Avenue transmission lines from Borough line to Campus Road.
- (6) Gross Avenue (Ridge Road) transmission lines from Borough line to Groff Avenue (Ridge Road) standpipe.
- (7) Ridge Road transmission lines between 515 Ridge Road and 619 Hampden Road.
- (8) Mill Road transmission line between Conewago Pumping Station and Back Run tributary.

The parties further agree to review and amend, if necessary, the abovementioned list of facilities to be retained by the Borough on an annual basis. The facilities contained in this exhibit are to be detailed on a base map to be made a part of this Agreement.

EXHIBIT A-3

PROPOSED INSTALLATION OF WATER
TRANSMISSION LINES FOR THE PURPOSE
OF WATER DISTRIBUTION SYSTEM CLOSURE

BACKGROUND: Upon acquiring the Elizabethtown Water Company on October 3, 1984, the Elizabethtown Borough Council embarked on a capital improvement program to insure the quality and quantity of water supply to existing and future customers. A major segment of the capital improvement program is the planned installation of adequately sized water transmission lines to loop the existing distribution system. The closure of the loops within the system will guarantee ample water supply to customers and provide for adequate fire protection capabilities.

The Consulting Engineer for the Borough prepared a report outlining the proposed installation of transmission lines for the purposes abovementioned. Borough Council adopted a resolution providing for future developers of land to contribute their proportional share of the costs of these improvements as subdivision or land development plans are submitted. As of the date of this Agreement several portions of the planned improvements have been completed.

The parties to this Agreement shall mutually implement the remaining planned improvements in order to complete the looping of the transmission/distribution system and secure developer participation for these improvements. The following lines are to be included as part of the planned closure of the distribution system:

- (A) Radio Road - Mt. Gretna Road to E. High Street - twelve (12) inch transmission line.
- (B) College Avenue - Campus Road to S. Mt. Joy Street - twelve (12) inch transmission line.
- (C) Hillside Avenue - Holly Street to Radio Road - eight (8) inch transmission line.
- (D) Campus Road - Unopened section from College Avenue to E. High Street - twelve (12) inch transmission line.

The planned improvements may be modified with agreement by both parties. Additional background information is provided in Elizabethtown Borough Resolution 87-3 and CET, Inc. engineering report dated October 28, 1985. The Borough shall own and maintain the transmission lines mentioned herein, upon inspection and acceptance, whether they lie within or outside the Borough limits.

EXHIBIT A-4

SEE ATTACHED PLAN

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

Be it known that on this ____ day of _____, 1989,
personally appeared before me _____, known to
me (or satisfactorily proven to me) to be one of the persons
whose names are subscribed to the foregoing Agreement, and having
been first duly sworn according to law, acknowledged himself to
be the _____ of the Borough of Elizabethtown and
further acknowledged that he executed the foregoing Agreement,
being first duly authorized to do so, for the purposes therein
contained.

Sworn to and subscribed
before me this ____ day
of _____, 1989.

Notary Public

AGREEMENT

THIS AGREEMENT, dated as of January 1, 1978, between WEST DONEGAL TOWNSHIP AUTHORITY, party of the first part, on the one hand, and MOUNT JOY TOWNSHIP AUTHORITY, party of the second part, on the other hand.

WITNESSETH:

WHEREAS, West Donegal Township and West Donegal Authority have determined that it is necessary, in order to benefit and preserve the public health and general welfare of citizens of West Donegal Township, that West Donegal Authority construct the West Donegal Sewer System, for the purpose of collecting, transporting and ultimately disposing of sewage and wastes emanating from a portion of West Donegal Township; and

WHEREAS, West Donegal Township and West Donegal Authority, on the one hand, and the Borough, on the other hand, have entered into the Treatment Agreement, which provides, inter alia, that West Donegal Township and West Donegal Authority may connect the West

Donegal Sewer System to the sewerage system of the Borough so that sewage and wastes flowing through the West Donegal Sewer System may be treated and disposed of at sewage treatment facilities owned and operated by the Borough; and

WHEREAS, Mount Joy Township and Mount Joy Authority have determined that it is necessary, in order to benefit and preserve the public health and general welfare of citizens of Mount Joy Township, to provide appropriate facilities for collecting, transporting and ultimately disposing of sewage and wastes emanating from a portion of Mount Joy Township; and

WHEREAS, Mount Joy Township and Mount Joy Authority have determined that the most efficient and practical method of providing sewage collection facilities for a portion of Mount Joy Township is for Mount Joy Authority to construct the Mount Joy Sewer System and to connect a portion of the Mount Joy Sewer System to the West Donegal Sewer System, so that sewage and wastes collected in a portion of the Mount Joy Sewer System can be discharged into the West Donegal Sewer System for transportation and ultimate treatment and disposal by the Borough under terms and conditions set forth in the Treatment Agreement; and

WHEREAS, The parties hereto recognize that certain sewage collection and transmission facilities which will be adequate to meet the reasonable anticipated requirements of certain citizens of West Donegal Township and of Mount Joy Township can be constructed, operated and maintained in the most efficient and economical manner as a single undertaking.

NOW, THEREFORE, West Donegal Authority, on the one hand, and Mount Joy Authority, on the other hand, for and in consideration of covenants and agreements herein contained, to be kept and observed, each intending to be legally bound hereby, covenant and agree, as follows:

1. The following terms and phrases, for the purposes of this Agreement, shall have the following meanings, unless the context clearly otherwise requires:

"Borough" shall mean the Borough of Elizabethtown, Lancaster County, Pennsylvania, a Pennsylvania municipality.

"Cost of Construction" shall mean the actual cost or the estimated cost, as applicable, of the portion or section of the

West Donegal Sewer System under consideration, calculated in the following manner:

A. The amount actually paid or estimated to be paid, as applicable, under the contract or contracts for construction of the portion or section of the West Donegal Sewer System under consideration shall be determined.

B. The amount actually paid or estimated to be paid, as applicable, under all contracts for construction of the West Donegal Sewer System shall be determined.

C. The amount determined in subparagraph A above shall be divided by the amount determined in subparagraph B above to determine the ratio which the actual or estimated construction cost, as applicable, of the portion or section of the West Donegal Sewer System under consideration bears to the actual or estimated construction cost of the entire West Donegal Sewer System.

D. All actual or estimated engineering, inspection and legal costs and expenses, attributable to construction but not financing, of the portion or section of the West Donegal Sewer System under consideration shall be determined.

E. The ratio determined in subparagraph C above shall be applied to the costs and expenses determined in subparagraph D above to determine the actual or estimated engineering, inspection and legal costs and expenses, as applicable, attributable to the portion or section of the West Donegal Sewer System under consideration.

F. All actual or estimated costs and expenses, as applicable, of acquiring land, rights of way, privileges, rights, licenses, easements and other interests in real property, including, without intending to limit the generality of the foregoing, legal, engineering, surveying and related costs and expenses, directly attributable to the portion or section of the West Donegal Sewer System under consideration shall be determined.

G. The sums determined in subparagraphs A, E and F above shall be added and the total of such sums shall represent the "Cost of Construction" of the portion or section of the West Donegal Sewer System under consideration.

"Mount Joy Authority" shall mean Mount Joy Township Authority, a Pennsylvania municipality authority.

"Mount Joy Sewer System" shall mean the sewage collection system, including all related and necessary facilities, to be constructed, owned and operated by Mount Joy Authority, which construction is to be undertaken in accordance with plans and specifications prepared by the firm of Gannett Fleming Corddry & Carpenter, Inc., Consulting Engineers, East Pennsboro Township, Cumberland County, Pennsylvania, including all future additions and improvements thereto.

"Mount Joy Township" shall mean the Township of Mount Joy, Lancaster County, Pennsylvania, a Pennsylvania municipality.

"Treatment Agreement" shall mean the Agreement, dated January 15, 1977, between the Borough, on the one hand, and West

Donegal Township and West Donegal Authority, on the other hand, including, if and when applicable, amendments and/or supplements thereto and any future agreement entered into in replacement and/or in substitution thereof.

"West Donegal Authority" shall mean West Donegal Township Authority, a Pennsylvania municipality authority.

"West Donegal Sewer System" shall mean the sewage collection system, including all related and necessary facilities, serving a portion of West Donegal Township, to be constructed, owned and operated by West Donegal Authority, which construction is to be undertaken in accordance with plans and specifications prepared by the firm of Huth Engineers, Inc., Consulting Engineers, Lancaster, Pennsylvania, including all future additions and improvements thereto.

"West Donegal Township" shall mean the Township of West Donegal, Lancaster County, Pennsylvania, a Pennsylvania municipality.

2. West Donegal Authority covenants to construct the West Donegal Sewer System in accordance with plans and specifications prepared by the firm of Huth Engineers, Inc., Consulting Engineers,

Lancaster, Pennsylvania, or in accordance with such changes or modifications which do not make substantial changes in such plans and specifications, and in accordance with a Water Quality Management Permit obtained from the Pennsylvania Department of Environmental Resources.

West Donegal Authority covenants to use its best efforts to complete construction of the West Donegal Sewer System within 560 days after notice to proceed is given to the contractors awarded contracts to construct the same.

3. Mount Joy Authority covenants to construct the Mount Joy Sewer System in accordance with plans and specifications prepared by the firm of Gannett Fleming Corddry & Carpenter, Inc., Consulting Engineers, East Pennsboro Township, Cumberland County, Pennsylvania, or in accordance with such changes or modifications which do not make substantial changes in such plans and specifications, and in accordance with a Water Quality Management Permit obtained from the Pennsylvania Department of Environmental Resources.

Mount Joy Authority covenants to use its best efforts to complete construction of the Mount Joy Sewer System within 480 days after notice to proceed is given to the contractors awarded contracts to construct the same.

4. West Donegal Authority covenants that upon receipt of a certificate of its consulting engineers stating that the West Donegal Sewer System is sufficiently complete to receive, transport and ultimately dispose of sewage and wastes from the Mount Joy Sewer System, it promptly will give notice to Mount Joy Authority of such fact and West Donegal Authority will receive and transport to the Borough's sewage treatment facilities, sewage and wastes from a portion of the Mount Joy Sewer System, perpetually, subject to the terms and conditions hereof and of the Treatment Agreement. West Donegal Authority grants to Mount Joy Authority the perpetual right to connect a portion of the Mount Joy Sewer System to the West Donegal Sewer System at the points shown on the plan attached hereto, made a part hereof and marked as Exhibit "A" or at such other point or points as shall be agreed upon by the parties hereto, from time to time.

Mount Joy Authority covenants to construct, as part of the Mount Joy Sewer System, a flow discharge chamber adjacent to the main point of connection of the Mount Joy Sewer System to the West Donegal Sewer System set forth in Exhibit "A" and to install and maintain a measuring device in such chamber which continuously shall measure sewage and wastes discharged into the West Donegal Sewer System. Such measuring device shall be of a type approved by the consulting engineers for West Donegal Authority.

5. Mount Joy Authority covenants that upon receipt of notice from West Donegal Authority stating that the West Donegal Sewer System is sufficiently complete to receive, transport and ultimately dispose of sewage and wastes from the Mount Joy Sewer System, it will cause the Mount Joy Sewer System to be completed, if not theretofore completed. Upon receipt of notice from West Donegal Authority to connect the Mount Joy Sewer System to the West Donegal Sewer System, which notice to connect shall be given within 30 days after West Donegal Authority's consulting engineers shall have certified substantial completion of the West Donegal Sewer System, Mount Joy Authority covenants to cause the Mount Joy Sewer System to be connected to the West Donegal Sewer System, as set forth in Paragraph 4 hereof, such connections to be made within 90 days of receipt of such notice from West Donegal Authority, at the sole cost and expense of Mount Joy Authority. Such connections shall be maintained at the sole cost and expense of Mount Joy Authority.

Mount Joy Authority shall secure any required permit or approval from the Pennsylvania Department of Environmental Resources and any other governmental regulatory body having jurisdiction to connect the Mount Joy Sewer System to the West Donegal Sewer System and to deliver sewage and wastes into the West Donegal Sewer System for transportation and ultimate treatment and disposal by the Borough.

6. Mount Joy Authority covenants that all sewage and wastes collected by the Mount Joy Sewer System and discharged into West Donegal Sewer System will be subject to the terms and conditions of this Agreement.

Mount Joy Authority agrees to prohibit the discharge by any municipality or municipality authority of any sewage or wastes into the Mount Joy Sewer System which will be ultimately discharged into the West Donegal Sewer System without prior written approval by West Donegal Authority.

7. Mount Joy Authority covenants that no sewage or waste shall be discharged from the Mount Joy Sewer System into the West Donegal Sewer System containing substances or other matters having characteristics which violate the limitations imposed by the Borough pursuant to the Treatment Agreement.

8. The parties agree that in consideration of the construction of sewerage facilities which will be jointly used

Mount Joy Authority will make a capital contribution to West Donegal Authority, which capital contribution shall be calculated in the manner hereinafter set forth. The parties agree that West Donegal Sewer System has been initially designed with varying design flow capacities allocated for Mount Joy Authority and with varying design flow capacities initially allocated for West Donegal Authority, which varying design flow capacities are set forth in Exhibit "B", attached hereto and made a part hereof. The capital contribution to be made by Mount Joy Authority to West Donegal Authority shall be calculated in the following manner:

A. The capital cost of each portion of section of the West Donegal Sewer System shown on Exhibit "B", attributable to Mount Joy Authority, shall be calculated separately in the following manner:

(1) The consulting engineers for West Donegal Authority, subject to review and approval by the consulting engineers for Mount Joy Authority, shall determine the estimated Cost of Construction of the portion or section of the West Donegal Sewer System under consideration.

(2) The ratio which the design flow of the portion or section of the West Donegal Sewer System under consideration reserved for Mount Joy Authority bears to the total design flow of such portion or section of the West Donegal Sewer System shall be determined and shall be applied to the estimated Cost of Construction of the portion or section of the West Donegal Sewer System under consideration determined under (1) above. The result shall equal the capital cost of the portion or section of the West Donegal Sewer System under consideration attributable to Mount Joy Authority; Provided, however, that such amount shall be subject to adjustment, as appropriate, as hereinafter provided.

B. The capital costs of all portions or sections of the West Donegal Sewer System attributable to Mount Joy Authority, determined separately under subparagraph A above, shall be added and the total shall equal the capital contribution to be made by Mount Joy Authority applicable to jointly used portions of the West Donegal Sewer System.

In the event the United States of America or the Commonwealth of Pennsylvania, acting through any agency, administration or department, shall make a grant to West Donegal Authority for application for and toward payment of a portion of the costs and expenses of construction of the West Donegal Sewer System, West Donegal Authority's consulting engineers, subject to review and approval by Mount Joy Authority's consulting engineers, shall determine the portion, if any, of such grant attributable to each portion or section of the West Donegal Sewer System. The portion, if any, of such grant attributable to the portion or section of the West Donegal Sewer System under consideration shall be multiplied by the ratio which the design flow of such portion or section of the West Donegal Sewer System reserved for Mount Joy Authority bears to the total design flow of such portion or section of the West Donegal Sewer System and the result shall be deducted from the capital cost of the portion or section of the West Donegal Sewer System under consideration attributable to Mount Joy Authority, as calculated under subparagraph A of this Paragraph 8, it being the intent of the parties that Mount Joy Authority shall receive a credit for its proportional share of any grant received by West Donegal Authority attributable to the portion or section of the West Donegal Sewer System under consideration.

9. The capital contribution to be made by Mount Joy Authority to West Donegal Authority computed as provided in Paragraph 8, shall be payable in full on the date upon which Mount Joy Authority consummates interim financing arrangements for construction of the Mount Joy Sewer System, subject to final adjustment as hereinafter provided. West Donegal Authority, at its sole option, may extend the date upon which Mount Joy Authority shall be required to pay such capital contribution.

10. The parties agree that the capital contribution to be made by Mount Joy Authority attributable to the West Donegal Sewer System shall be subject to final adjustment within 30 days after receipt by the parties of a certificate of West Donegal Authority's consulting engineers certifying that the West Donegal Sewer System is complete, all Costs of Construction can be ascertained and, if applicable, that final settlement has been made by West Donegal Authority with respect to any grant received by West Donegal Authority for application for and toward payment of a portion of the costs and expenses of construction of the West Donegal Sewer System. Such adjustment shall be made by recomputing, in accordance with the principles set forth in Paragraph 8 hereof, and after giving credit to Mount Joy Authority for any interest earned by West Donegal Authority by reason of the investment of the capital contribution made by Mount Joy Authority pursuant to

Paragraph 8 hereof, the amount of the capital contribution attributable to the West Donegal Sewer System, using actual Costs of Construction, as certified by West Donegal Authority's consulting engineers. Mount Joy Authority within 30 days after final adjustment shall make the appropriate payment of the balance of the capital contribution due West Donegal Authority or, if appropriate, West Donegal Authority within 30 days after final adjustment shall make the appropriate refund of any overpayment of the capital contribution made by Mount Joy Authority.

11. Mount Joy Authority recognizes that West Donegal Authority is responsible to the Borough under terms of the Treatment Agreement for paying the Borough for services rendered by the Borough in ultimately conveying, treating and disposing of sewage and wastes discharged from the Mount Joy Sewer System into the West Donegal Sewer System. Mount Joy Authority covenants and agrees to fully reimburse West Donegal Authority for all sums payable to the Borough under the Treatment Agreement attributable to sewage and wastes collected in the Mount Joy Sewer System and discharged into the West Donegal Sewer System.

In order that the charges attributable to Mount Joy Authority for services rendered by the Borough under terms of the Treatment Agreement can be properly computed, Mount Joy

Authority, at its sole cost and expense, covenants and agrees to supply to West Donegal Authority, quarterly, the total gallonage of metered sewage and wastes discharged from the Mount Joy Sewer System into the West Donegal Sewer System based upon meter readings at the principal point of connection of the Mount Joy Sewer System to the West Donegal Sewer System as provided in Paragraph 4 hereof. Mount Joy Authority, at its sole cost and expense, also covenants and agrees to supply to West Donegal Authority, quarterly, the estimated total gallonage of unmetered sewage and wastes discharged from the Mount Joy Sewer System into the West Donegal Sewer System. The determination of the volume of discharge of sewage and wastes discharged from the Mount Joy Sewer System to West Donegal Sewer System at unmetered points of connection shall be made by the consulting engineers for Mount Joy Authority, subject to review and approval of the consulting engineers for West Donegal Authority, and shall be based upon estimated flows.

In order to measure the volume of sewage and wastes discharged from the Mount Joy Sewer System, Mount Joy Authority covenants to construct and install, as part of the Mount Joy Sewer System, appropriate metering facilities which shall be acceptable to West Donegal Authority, which facilities shall be maintained and operated at the sole cost and expense of Mount Joy Township. Mount Joy Authority agrees to have all metering facilities calibrated, inspected and tested for accuracy semiannually by the manufacturer

thereof or such other person as shall be approved by the consulting engineers for West Donegal Authority. The results of such inspection and testing shall be submitted by Mount Joy Authority to West Donegal Authority. If the report indicates that a measuring device does not record accurately, Mount Joy Authority shall repair or replace the same as soon as practical.

Meter records and access to meter installations shall be made available to any party hereto upon request.

Under terms of the Treatment Agreement, the Borough will submit to West Donegal Authority on or before the 5th days of January, April, July and October in each year, a statement showing the amount payable by West Donegal Authority for services rendered by the Borough under terms of the Treatment Agreement. Immediately upon receipt of each such statement, West Donegal Authority shall determine the portion of the total charges set forth in such statement attributable to Mount Joy Authority and shall submit to Mount Joy Authority a statement, payable within 15 days, setting forth the portion of the charges made by the Borough for conveying, treating and disposing of sewage and wastes, which shall be paid by Mount Joy Authority to West Donegal Authority.

Final payment of the balance, if any, due to the Borough and attributable to Mount Joy Authority under terms of the Treatment Agreement shall be made by West Donegal Authority on or before January 20 of each year, unless West Donegal Authority shall have contested any Borough's calculations, books of account or other relevant records in the manner set forth in the Treatment Agreement.

12. The parties agree that the annual charge to Mount Joy Authority for use of the West Donegal Sewer System, so long as sewage and wastes from the Mount Joy Sewer System shall not exceed in volume the capacities allocated for Mount Joy Authority, as hereinbefore provided, shall be determined within 45 days after the close of each calendar year, in accordance with the following:

A. West Donegal Authority shall determine the total costs and expenses of operation, maintenance and repair of the jointly used portions of the West Donegal Sewer System during the year under consideration, which total costs and expenses shall not include:

(a) any amount attributable to debt service requirements with respect to indebtedness;

(b) any amount attributable to depreciation;

(c) administrative and billing costs with respect to users of the West Donegal Sewer System other than Mount Joy Authority and other costs not directly attributable to jointly used facilities, which costs and expenses shall be determined in accordance with sound and generally accepted engineering and accounting practices.

b. The amount, if any, received by West Donegal Authority during the year under consideration, from any agency, department or body of the Commonwealth of Pennsylvania or the United States of America on account of costs of operating, repairing, maintaining and/or replacing the jointly used portions of the West Donegal Sewer System shall be deducted from the total costs and expenses determined in subparagraph A above to determine the net costs and expenses of operation, maintenance and repair of the jointly used portions of the West Donegal Sewer System during the year under consideration.

C. West Donegal Authority and Mount Joy Authority, jointly, shall determine the ratio which the total discharge of sewage and wastes from the Mount Joy Sewer System into the jointly used portions of the West Donegal Sewer System during the year under consideration bears to the total discharge of sewage and wastes into the jointly used portions of the West Donegal Sewer System during the year under consideration, which ratio so determined shall be applied to the net costs and expenses of operating, maintaining and repairing the jointly used portions of the West Donegal Sewer System during the year under consideration, as determined in subparagraph B above. The result so obtained shall equal the annual charge to Mount Joy Authority for use of the jointly used portions of the West Donegal Sewer System during the year under consideration.

Mount Joy Authority shall make payments on account to West Donegal Authority on or before January 20, April 20, July 20 and October 20, respectively, of each year for use of the West

Donegal Sewer System during such year. Each such payment shall represent 1/4 of the annual charge to West Donegal Authority for use of the West Donegal Sewer System during the preceding year. Payments on account during the first year in which Mount Joy Authority shall use the West Donegal Sewer System shall be based upon an estimated annual charge determined by West Donegal Authority's consulting engineers in accordance with the principles hereinbefore set forth with respect to final determination of the actual annual charge, and submitted, in writing, to Mount Joy Authority. Final payment by Mount Joy Authority or an appropriate refund by West Donegal Authority shall be made within 10 days after final determination of the actual annual charge for the year under consideration shall have been made, which final payment or appropriate refund shall give effect to payments made on account by Mount Joy Authority during the year under consideration.

13. West Donegal Authority shall keep appropriate records and accounts with respect to costs and expenses of operation, maintenance and repair of the West Donegal Sewer System so that determinations which shall be necessary under Paragraph 12 can be made promptly, at the required times, with fairness and accuracy. Such records and accounts shall be open to inspection by Mount Joy Authority, upon reasonable notice, at reasonable times.

14. In the event that the total discharge of sewage and wastes from either the West Donegal Sewer System or the Mount Joy Sewer System into the jointly used portions of the West Donegal Sewer System shall exceed in volume the capacities allocated to the respective parties hereto in the West Donegal Sewer System, the parties agree that any available excess capacity will be distributed between the parties upon the same ratio under which shares originally were reserved multiplied by actual excess capacity and for any appropriate additional payments or credits by reason thereof. In the event that the parties shall fail to agree with respect to provisions of additional capacity or reallocation of existing capacity and appropriate payments or credits therefor, Mount Joy Authority shall continue to have the right to discharge sewage and wastes from the Mount Joy Sewer System into the West Donegal Sewer System in an amount not exceeding the applicable capacities allocated for Mount Joy Authority, as hereinbefore provided and as set forth in Exhibit "B".

15. Mount Joy Authority covenants and agrees that the annual sums payable to West Donegal Authority hereunder will be paid at the times set forth herein without suspension or abatement of any nature, irrespective of delays in completion of any construction relating to the Mount Joy Sewer System or the West Donegal Sewer System.

Mount Joy Authority covenants and agrees that it will provide in its annual budgets during the term hereof, commencing with the annual budget for the first year in which payments are due hereunder to West Donegal Authority, for sufficient current revenues which, together with such other funds as legally may be available, will enable Mount Joy Authority to pay all its obligations to West Donegal Authority hereunder in each such year.

16. West Donegal Authority hereby grants, sells and conveys to Mount Joy Authority an undivided interest in the sewage collection lines located in East Harrisburg Avenue, between Manhole 1 and Manhole 66, inclusive, and located in Anchor Road, Manhole 204 to Manhole 219, inclusive, as shown in red on Exhibit "A", and laterals related thereto, in order that all properties located in Mount Joy Township and whose principal building is located within 150 feet of such lines may be customers of Mount Joy Authority. Mount Joy Authority shall be responsible for the connection of all such properties located in Mount Joy Township to such lines in a manner satisfactory to West Donegal Authority. All such connections shall be subject to review and approval by West Donegal Authority. Mount Joy Authority shall be responsible for billing and collecting sewer rates and other charges from all properties located in Mount Joy Township and connected to such lines and all

income received from such properties shall be the property of Mount Joy Authority. All sewage and wastes discharged from such properties to the West Donegal Sewer System shall be deemed to be sewage and wastes emanating from the Mount Joy Sewer System. West Donegal Authority covenants and agrees to execute and deliver to Mount Joy Authority any and all documents necessary in order to carry out the intent and purpose of this Paragraph 16.

17. Each party hereto shall provide authorized representatives of the other party hereto with access at reasonable times to the respective sewer systems in order to assure compliance with the terms of this Agreement, including, access for waste sampling and measurement.

Mount Joy Authority agrees to furnish or to cause to be furnished to West Donegal Authority, upon reasonable cause shown by West Donegal Authority, all information deemed essential by West Donegal Authority for determination of the volume, character and strength of sewage and wastes discharged from the Mount Joy Sewer System into the West Donegal Sewer System.

18. West Donegal Authority covenants and agrees that it will:

(a) Maintain the West Donegal Sewer System in good repair, working order and condition;

(b) Continuously operate the same;

(c) From time to time make all necessary repairs, renewals and replacements thereof and all necessary improvements thereto in order to maintain adequate service; and

(d) Comply with all present and future laws, rules, regulations, permits, orders and requirements lawfully made by any governmental body having jurisdiction.

19. Mount Joy Authority covenants and agrees that it will:

(a) Maintain the Mount Joy Sewer System in good repair, working order and conditions;

(b) Continuously operate the same;

(c) From time to time make all necessary repairs, renewals and replacements thereof and

all necessary improvements thereto in order to maintain adequate service; and

(d) Comply with all present and future laws, rules, regulations, permits, orders and requirements lawfully made by any governmental body having jurisdiction.

20. West Donegal Authority may enter into any new or additional agreement concerning transportation and disposal by West Donegal Authority of sewage and wastes from any other municipality; Provided, however, that no such new or additional agreement shall impair the ability of West Donegal Authority to receive, transport and dispose of sewage and wastes collected in the Mount Joy Sewer System in accordance with the terms of this Agreement.

21. The parties hereto agree that if, at any time, disputes shall arise between them concerning factual determinations under the terms of this Agreement, the matter in dispute shall be referred to three arbitrators, one to be appointed by West Donegal Authority, one to be appointed by Mount Joy Authority and the third to be agreed upon by the two appointees so selected; Provided, however, that in the event such appointees cannot agree on the third arbitrator, the President Judge of the Court of Common Pleas

of Lancaster County, Pennsylvania, shall appoint the third arbitrator. The decision or award of the majority of such arbitrators shall be final and binding upon the parties hereto, their respective successors and assigns. Each party hereto shall pay the costs of its own appointee and one-half of the costs of the third arbitrator.

22. This Agreement shall be binding upon the parties hereto and their respective successors and assigns.

23. This Agreement may be executed in any number of counterparts, each of which shall be an original, but such counterparts together shall constitute but one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized appropriate officers and their respective seals to be affixed hereunto, all as of the day and year first above written.

ATTEST:

WEST DONEGAL TOWNSHIP AUTHORITY

Charles M. Cobough
Secretary

By: David G. Heisey
Chairman

(SEAL)

ATTEST:

MOUNT JOY TOWNSHIP AUTHORITY

John E. Martin
Secretary

By: Paul R. Bailey
Chairman

(SEAL)

THIS AGREEMENT made as of the 15th day of January, 1977, between the BOROUGH OF ELIZABETHTOWN ("Borough"), MOUNT JOY TOWNSHIP AUTHORITY ("Authority") and the TOWNSHIP OF MOUNT JOY ("Township"), all of Lancaster County, Pennsylvania, WITNESSETH:

RECITALS

The Borough is a municipality, the Authority is a municipal authority organized by the Supervisors of the Township and the Township is a municipality. The Borough and the Township are neighboring municipalities located in Lancaster County, Pennsylvania.

The Borough presently provides public waste water collection and treatment services within the Borough. Its existing waste water treatment plant is located in West Donegal Township (also a neighboring municipality) along the Conoy Creek approximately one mile southwest of the Borough adjacent to Route 241. The capacity of this treatment plant is such as not to permit acceptance of any additional sewage flow from West Donegal Township or the Township as of this date.

For water quality and other reasons, it would be in the public interest to provide for treatment of waste water from West Donegal Township and the Township at the Borough's treatment facilities rather than to construct separate treatment plants. The Supervisors of the Township recognize that the public health and welfare requires the construction of a waste water collection system for certain portions of the Township.

The Authority proposes to construct a sewage collection system and interceptor sewers to service portions of the Township. Each interceptor sewer ("Link Line") will be connected to the Borough's interceptors at a point or points to be determined by the Borough's Consulting Engineers.

The Borough is willing to accept waste water from the Authority's collection system, and to provide the necessary additional treatment facilities, upon the terms and conditions herein contained.

AGREEMENT

NOW, THEREFORE, the parties hereto, each intending to be legally bound, respectively and severally agree as follows:

ARTICLE I

DEFINITIONS

Section 1.01. "Collection System" of Authority means interceptor sewers constructed or to be constructed in the Township by Authority, together with all collection sewers and related facilities in the Township.

Section 1.02. "Consulting Engineer", in respect of any party to this Agreement, means an engineer or engineering firm having experience and a favorable repute in the field of public sanitary waste water engineering, appropriately licensed by the Commonwealth of Pennsylvania, and engaged by the party with whom the engineer consults.

Section 1.03. "Industrial Waste Questionnaire" shall have the meaning set forth in Section 4.05.

Section 1.04. "Link Line" shall have the meaning set forth in the recitals above.

Section 1.05. "Metering Station" shall mean a facility for the accurate

measurement of the volume of waste water from the Collection System and Link Line to be constructed as provided in Section 2.01.

Section 1.06. "Net Operating and Maintenance Expense" shall have the meaning specified in Section 3.01.

Section 1.07. "Plant" shall mean the Borough's waste water treatment and disposal facility which is referred to in the recitals, located along the Conoy Creek about one mile southwest of the Borough, together with any additions or alterations thereto.

Section 1.08. "Outfall Sewer" shall mean the outfall sewer to be constructed from the Plant along Conoy Creek to the Susquehanna River.

ARTICLE II

Construction of Sewerage Facilities by Borough and Authority; Use of Same.

Section 2.01. Authority will cause plans and specifications for its Collection System to be completed and will construct such System with reasonable dispatch, all in accordance with sound engineering principles. Authority will construct a Metering Station, or stations, and Link Line, or lines, as may be required. Except as herein otherwise provided, a Metering Station shall be located at or near each point of connection of a Link Line to the Borough's interceptors. Borough's Consulting Engineer shall be consulted in respect to the design of the Metering Station and the connection of each Link Line, and such facilities shall not be constructed until approved by such Engineer, but such approval shall not be withheld unreasonably nor for other than sound engineering reasons. Authority shall at all times employ a Consulting Engineer for the preparation of plans and specifications for all facilities constructed by it pursuant to this Agreement and to inspect such construction.

If the Consulting Engineers for the Borough and the Authority should both determine that the flow from any Link Line will not be sufficient to permit accurate metering, said Engineers shall each deliver a written certificate to such effect to the Borough and to the Authority. In this event, in lieu of the construction of a Metering Station at or near the point or points of connection of said Link Line, or lines, to the Borough's interceptors, the Authority will cause the Collection System to be constructed in a manner that will be compatible with (a) attachment, at such point or points, of a portable metering device (it being the intention of the parties that such a device be utilized from time to time as may be deemed appropriate by the Borough to determine the actual flow at such point or points) and (b) installation, at such point or points, if and when deemed advisable by the Borough, of permanent Metering Stations.

Upon notification by the Borough, the Authority agrees to cause Metering Stations to be constructed with reasonable dispatch at such point or points at any time a determination is made by the Consulting Engineer for the Borough, which determination shall be concurred in by the Consulting Engineer for the Authority, that the flow from such Link Line is sufficient to permit accurate metering.

In order to effectuate the foregoing, the Authority shall provide, at its own expense, a portable metering device and shall cause the same to be attached and utilized from time to time at the request of the Borough to determine the actual flow of the abovementioned point or points of connection to the Borough's interceptors where a Metering Station is not constructed.

Borough and its agents and representatives shall be permitted, at all reasonable times and from time to time during construction and thereafter, at the risk and expense of the Borough, to inspect and examine, and make tests of Metering Stations, the Collection System, Link Lines and all records of Authority in respect thereof. The Borough shall have the right to require calibrations of the Metering

Stations semi-annually by representatives of the meter manufacturer at the expense of the Authority.

Section 2.02. Subject to receipt of a certificate of completion of Borough facilities or other official notification from Borough's Consulting Engineer, the Authority shall have the right to connect the Link Lines at the point or points set forth in Exhibit F, or at such other point or points as the parties may agree, for the purpose of transporting waste water from the Township to the Plant, such right, however, to be subject to the further provisions of this Agreement.

Section 2.03. The Borough will cause plans and specifications for the additions and alterations to the existing Plant and for the construction of the Outfall Sewer to be prepared and will construct the same with reasonable dispatch, all in accordance with sound engineering principles, subject to the further provisions hereof, to the end that the Plant and the Outfall Sewer will be available for use by the Township at the time the waste water flow from the Township will commence flowing through the Link Lines.

If additional interceptors (Link Lines) are deemed necessary by Authority, Authority shall request permission from the Borough to connect said interceptors to the Borough's System. If the additional interceptors are approved, they shall be connected to the Borough's System at a point or points mutually agreed by the parties and approved by the Borough's Consulting Engineers.

The Borough and the Authority will cause the construction, pursuant to this Agreement, of (a) the Outfall Sewer and the alterations and additions to the Plant and (b) the additions to the Collection System, respectively, to be completed on the date set out in the plans and specifications for the completion of the alterations and additions to the Plant or the date set out in the plans and specifications for the completion of the Outfall Sewer, whichever is later. The Authority shall be deemed to have the right to connect the Link Lines and the Borough shall be deemed to have the right to require connection thereof and to make service charges, pursuant to Article III hereof, upon notification by the Borough's Consulting Engineer that the Plant is sufficiently complete to accept waste water from the Township. In the event such connection cannot be made because either party failed to complete construction of its project within the times and under the conditions set forth in the applicable specifications, said party failing to complete its project will be liable to the other party for all costs, expenses and damages resulting from such failure. Any obligation of the Authority under this Section will also be deemed an obligation of the Township.

The parties hereto shall grant to each other all easements and rights-of-way in and to the public streets which are required with respect to the abovementioned construction and the operation and maintenance of the Collection System.

Section 2.04. The Borough will accept into the Plant for treatment and disposal, acceptable waste water from the Authority's Collection System, only to the extent of the capacity guaranteed to the Authority as provided in Section 2.05; provided that, if the Plant is actually operated by Borough in excess of design capacity, Authority shall be entitled to utilize a proportionate share of such excess. The Borough will treat and dispose of all such waste water in accordance with sound engineering practices and all relevant requirements of any court or governmental agency having jurisdiction in the matter.

Section 2.05. The Borough shall construct the Outfall Sewer and the additions and alterations to the Plant in accordance with sound engineering practice and all applicable requirements of law and regulations of agencies having jurisdiction in the matter, and in an efficient and economical manner. The Plant shall be designed to accept and treat a total average daily flow of 3,000,000 gallons per day ("design capacity"), being the estimated average daily flow contemplated to be received from areas to be served in the year 1995. Of said total design capacity, 404,000 gallons

per day is the estimated average daily flow contemplated to be received from the areas of the Township contemplated to be served in the year 1995, which capacity shall be considered as the capacity guaranteed to the Authority. The Outfall Sewer shall be designed to accommodate a total peak tributary flow rate of 9,250,000 gallons per day ("design capacity"), being the estimated peak tributary flow rate to be discharged from the Plant in the year 2020. Of said total design capacity, 1,560,000 gallons per day is the estimated discharge attributable to flow contemplated to be received from the areas of the Township contemplated to be served in the year 2020, which capacity shall be considered as the capacity guaranteed to the Authority. The capacity guaranteed to the Authority in the Plant and the Outfall Sewer shall be exclusive of any waste water discharged from Elizabethtown State Hospital and any alterations and additions thereto. Should it become necessary to operate the Plant or the Outfall Sewer at less than their respective design capacities due to actions or directives of State, Federal or Interstate regulatory agencies or due to an act of God, the actual capacities guaranteed to Authority under this Agreement shall be reduced proportionately.

For the purposes of this Agreement, the proportionate share of Plant design capacity allocated to the Authority shall be deemed to be 13.467% and the proportionate share of the Outfall Sewer design capacity allocated to the Authority shall be deemed to be 16.865%.

The Borough shall reasonably advise the Authority of the progress of planning and construction of the Outfall Sewer and the alterations and additions to the Plant and shall provide Authority with all reasonably requested information in respect thereof.

Authority or Township and their agents and representatives shall be permitted, at the expense of the Township or the Authority at all reasonable times and from time to time during construction and thereafter, to inspect and examine, and make tests of the Outfall Sewer and the Plant and all records of Borough in respect thereof.

Section 2.06. Prior to the award of construction contracts (but after the receipt of bids therefor) for the construction of the Outfall Sewer and the alterations and additions to the Plant, Borough shall promptly report, in reasonable detail and in writing, to the Authority as to (1) the bids received and the bidders to whom it proposes to award contracts, (2) the estimated costs (which shall be itemized) of constructing the alterations and additions to the Plant and (3) the proportion of such costs allocated to Authority as provided herein. For the purposes of this Agreement, the costs of such construction shall include contract payments, engineering design and construction supervision fees and expenses, including an amount in lieu of interest on prepaid engineering costs (calculated on the basis of 7% per annum from the respective dates of payment), legal fees incident to the construction, reasonable contingency items, and all other charges, costs and expenses incident to such construction and which are properly chargeable thereto under sound accounting practice, but, exclude all costs and expenses related to any financing by the Borough. If the Authority refuses to approve such proposed contracts within thirty (30) days of receipt of the abovementioned reports, the Borough shall have the option to proceed with the construction, as if this Agreement was null and void, subject to the provisions of Section 2.12 hereof. If the Authority approves such proposed contracts, the Borough shall proceed with construction with all reasonable dispatch, provided that the Borough shall not be obligated to award contracts or commence actual construction until it has received from the Authority the amount provided for in the first paragraph of Section 2.07. No substantial changes in the plans which would adversely affect the capacity guaranteed to the Authority shall be made during the course of construction without the prior approval of the Authority.

Section 2.07. Upon approval by the Authority of the Borough's proposed award of contracts and of its estimated costs of construction and the allocation thereof as provided in Section 2.06, Authority shall forthwith proceed to issue and deliver its bonds (or otherwise arrange to obtain the necessary monies) in an amount equal

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to the estimated proportion of the costs of construction (as defined in Section 2.06) allocable to Authority (which proportion shall be computed as provided in Exhibit B hereof) not later than the date of issuance and delivery by the Borough of its bonds to finance the project, and, shall deliver to the Borough an amount equal to the Township's required contribution toward the project. At the same time, the Authority shall deliver to the Borough the sum of \$149,189.00 being the amount hereby agreed upon by the Authority and the Borough as full and fair consideration for reservation by the Borough of design flow capacity in existing portions of the Borough waste water collection and the sum of \$84,701.00 (for purpose of information only, the above amounts have been calculated as set forth in Exhibit C), being the amount hereby agreed upon as full and fair consideration for reservation by the Borough of capacity in the existing waste water treatment plant. The Borough shall deposit the amount so delivered to it, together with the Borough's share, if any, of the estimated total cost of construction in a special Construction Fund, which Construction Fund shall be used only as hereinafter provided.

Construction Fund monies shall be applied solely to pay the costs of construction of the Outfall Sewer and the alterations and additions to the Plant and each payment from such Fund shall be certified by Borough's Consulting Engineer as being a proper cost of construction and shall be approved by such Engineer. Should it appear at any time that the actual costs of such construction will exceed the estimated costs to an extent that such excess cannot be prudently met from the amounts available as contingency funds, Borough shall immediately report such fact to the Authority, together with a detailed statement of the additional amount required to complete the construction and a certificate of the Borough's Consulting Engineer to the effect that, in such Engineer's opinion, such additional amount will enable the completion of construction and is necessary for such purpose. The Borough and Authority shall thereupon each forthwith deposit in said Construction Fund their respective shares of such required additional amount.

Monies deposited in the Borough's Construction Fund shall be invested as required and authorized by the ordinance or ordinances under which the Borough's bonds have been issued to finance said construction and equipping and shall deposit any earnings in said Construction Fund.

The Borough agrees to bear a share of the cost of construction of the proposed Authority sewer on Mt. Gretna Road from proposed manhole No. 113 to the point of connection to the Borough system. Said share shall equal (a) 1.8% of the net cost of construction (excluding any costs and expenses related to any financing by the Authority) of said sewer between said points and (b) thirty-five (35%) percent of the amount determined to be payable under subsection (a) above, it being the intention of the Borough thereby to compensate the Authority for the Borough's share of the costs and expenses related to financing by the Authority. Such total amount shall be paid by the Borough at the time of receipt of the Authority capital contribution pursuant to this Section by reducing the total amount payable by the Authority pursuant to this Section.

Section 2.08. The parties agree that the capital contribution to be made by Authority to the cost of construction of the Outfall Sewer and the alterations and additions to the Plant shall be subject to final adjustment within thirty (30) days after receipt by the parties of a certificate of Borough's Consulting Engineer certifying that said alterations and additions are complete, that the final construction cost can be ascertained and, if applicable, that final settlement has been made by the Borough with respect to any grant received by the Borough for application for and toward payment of a portion of the construction costs. Such adjustment shall be made by recomputing, in accordance with the principles hereinabove set forth, the amount of the capital contribution attributable to the alterations and additions, using the actual construction cost, as certified by the Borough's Consulting Engineer. The Authority within thirty (30) days after final adjustment shall make the appropriate payment of the balance of the capital contribution due to the Borough or, if appropriate, the Borough within thirty (30) days after final adjustment shall make the appropriate refund of any overpayment

of the capital contribution made by the Authority, giving credit for the proportionate share of investment income received by the Borough during the period of construction.

Section 2.09. No interceptors or pumping facilities other than in the Plant shall be constructed by Borough hereunder for use by Authority.

Section 2.10. Should it be necessary for the Authority subsequently to request an additional reserve capacity in the treatment and disposal facilities, or should any future expansion of the treatment and disposal facilities become necessary, or should any major improvement of such facilities be required by any competent governmental agency, such additional reserve capacity shall be purchased by the Authority upon similar terms and conditions and following the same procedure as has been set forth herein for the construction immediately envisaged by this Agreement. Notwithstanding the foregoing, Borough shall not be obligated to construct any additions or improvements to the treatment and disposal facilities unless such construction is determined to be necessary and feasible by the Borough and its Consulting Engineers or unless mandated by any governmental agency having jurisdiction.

Section 2.11. The Borough, shall submit plans and specifications for the project to the Authority and the Township at least thirty (30) days prior to publication of its notice for the receipt of construction bids. Within thirty (30) days after the submission of such plans and specifications to the Authority and the Township, the Authority and the Township shall provide evidence to the Borough of their approval of such plans and specifications. Such approval may be given contingent upon the agreement of the Borough to reasonable changes therein requested by the Authority and the Township.

Section 2.12. If, after this Agreement is executed and delivered by the parties hereto, Authority fails to issue its bonds and deliver the proceeds thereof to the Borough or otherwise provide to the Borough the Township's required contribution toward the project, this Agreement shall be deemed null and void except that Authority and Township shall be, jointly and severally, liable and shall forthwith pay to the Borough:

- (1) The lesser of their proportionate share of net costs of construction (as defined in Section 2.06) incurred to date or \$30,000.00; and
- (2) The amount of net costs incident to the redesign of the plant occasioned by such withdrawal from the project but in no event greater than \$100,000.00.

Borough and Authority agree to schedule a simultaneous closing for settlement by the Borough and by the Authority for the issuance of their bonds.

ARTICLE III

Service Charges

Section 3.01. From and after the connection of the Collection System of the Authority to the Borough System, Authority or Township shall pay to Borough, in consideration of the waste water treatment and disposal services provided by Borough pursuant to this Agreement, a proportionate share (calculated as hereinafter provided) of the Net Operating and Maintenance Expense in respect of such facilities; provided, however, that so long as the Authority maintains and operates the Collection System as an "Operating Authority" the obligation to pay Service Charges hereunder shall be the sole obligation of the Authority and the obligation of the Township to pay Service Charges hereunder shall arise only from and after the date upon which the Township assumes responsibility for operating the Collection System, either as owner or as lessee or otherwise. Net Operating and Maintenance Expense shall mean the total for the fiscal period in question, of the costs and expenses

of operating and maintaining Borough's treatment and disposal facilities servicing waste water from Authority, necessarily incurred by Borough in connection with the operation, administration and maintenance of such facilities and properly chargeable thereto under sound accounting practice (including ordinary or routine repairs and replacements but not extraordinary replacements or additions of a capital nature which latter shall be treated in the manner provided for expansions in Section 2.10 except to the extent that Section 4.07 shall apply), less any income or receipts (including governmental grants) properly applicable to offsetting or paying such costs and expenses (other than the direct payments to be made by Authority or Township pursuant to this Agreement or user charges collected by Borough). Such costs and expenses shall include, but shall not be limited to, salaries and wages of administrative, operating and supervisory personnel allocable to sewer operations, chemicals, power, taxes, insurance premiums and supplies and fees and expenses for engineering, legal and accounting services (but, in the case of any of the same, only to the extent that the same relates to the treatment and disposal facilities). It is understood that such costs are to be levied in accordance with the user-charge guidelines of the Environmental Protection Agency pursuant to Section 204 of the Federal Water Pollution Control Act Amendments of 1972.

The Authority or Township share of Net Operating and Maintenance Expense shall be an amount which is in the same ratio to the total of such Expense as the volume of waste water flow from Township is to the total volume of sewage received at such treatment and disposal facilities.

The waste water flow from the Township shall be determined by metering those points of connection at which meters have been installed and estimating the flow from points of connection at which meters have not been installed. Such estimate shall be made in a manner to be agreed upon by Consulting Engineers representing the Borough and the Township.

In the event Borough decides to treat industrial wastes requiring expenses for operation and maintenance in addition to those normally incurred for operation and maintenance, Borough will then provide for separate accounting of said extraordinary expenses from that used to determine the Net Operating and Maintenance Expense.

Section 3.02. The service charges provided for in Section 3.01 shall be determined for each fiscal year ending December 31, but shall be paid quarterly on an actual basis in accordance with the following provisions:

- (1) Borough shall prepare and submit to Authority, by no later than November 1 of each year, an estimated budget for the ensuing fiscal year. Such budget shall be in writing, shall be in reasonable detail, shall show, on an estimated basis, all costs and expenses and receipts necessary to calculate Net Operating and Maintenance Expense, shall calculate the amounts which will be charged to Authority and shall be certified by Borough's Consulting Engineer as being reasonable and proper and approved by such Engineer. Borough may revise its budget for any fiscal year at any time when the same becomes necessary, and shall promptly forward any revised budget to Authority.
- (2) At the close of each calendar year, Borough shall compute from its accounting and flow records the actual Net Operating and Maintenance Expense (as defined in Section 3.01) and the actual flows of sewage into the Plant for the calendar year. From these figures, Borough shall calculate the share properly attributable to Authority (as provided in Section 3.01) and shall bill the same to Authority not later than fifteen (15) days after the close of said year. On or before the thirtieth day of January, Authority or Township shall pay to Borough the total amount billed for the immediately preceding calendar year.
- (3) If Authority or Township fails to make payment as provided in subparagraph (2) of this Section, an interest charge equal to the greater of the then current average interest from the Municipal Bond Buyer's Index or the current

interest charge payable by the Borough on Municipal loans shall be charged and added to the outstanding balance due.

(4) The Borough shall permit inspection, by the other parties to this Agreement or its representatives, of all records of the Borough relating to the subject matter of this Agreement at all reasonable times and places and shall provide such reasonable information as may be requested of it.

(5) The Authority or Township shall make the payments required of it as above provided, but its obligation to do so shall be without prejudice to its rights to contest the reasonableness or accuracy of the Borough's calculations, books of account or other relevant records in any appropriate proceeding.

(6) In the event that the Borough is unable to compute the service charge based on actual flow of waste water into the Plant, then the Borough shall compute the service charge on an estimated basis, using such system as shall be mutually agreed to by the parties hereto, and an appropriate adjustment on the basis of actual flow shall be made on the next succeeding billing date if actual flow data becomes available. The appropriate party shall use the best efforts to repair defective meters in order that billing on actual metered basis may be resumed as soon as practicable.

Section 3.03. The basis for sharing costs of jointly used collection facilities is set forth in Exhibit E.

ARTICLE IV

Miscellaneous Provisions

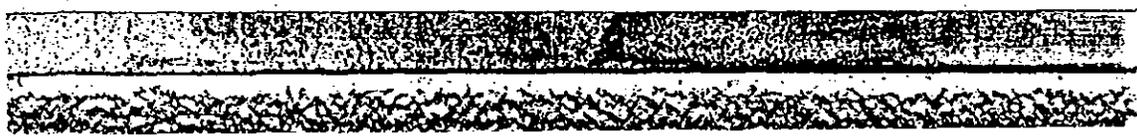
Section 4.01. Prior to the completion of construction of the Outfall Sewer and the alterations and additions to the Plant provided for in this Agreement, Township shall (to the extent that it has not done so prior thereto) take all such action in the exercise of its police power as it has the legal power to take which may be necessary to compel all properties located within its territorial limits and then capable, or thereafter becoming capable, of being served by Authority's Collection System to be connected therewith.

Section 4.02. Authority or Township shall establish, maintain, levy, impose and collect charges, rentals and fees in respect of the use of such Collection System sufficient to enable it to pay therefrom (except to the extent that other funds are legally available for the purpose) the annual service charges required under this Agreement to be paid to the Borough.

All such rates and charges shall be in compliance with all governing requirements of the Commonwealth of Pennsylvania and the United States of America and they shall include, inter alia, as applicable, provisions for industrial cost recovery as required by Environmental Protection Agency Regulations of August 21, 1973 or any similar statutory provision, rule or regulation in effect from time to time. The parties hereto agree to enter into appropriate amendments or supplements to this Agreement when and if necessary to equitably apportion any charges required by such provisions.

Section 4.03. The Borough shall, at its expense, install and continuously maintain such measuring devices as are necessary to accurately determine the total waste water flow received by the Plant in order that the relative utilization of such facilities by the Borough, the other municipalities served by the Plant and the Township and Authority may always be ascertainable. Meters shall be calibrated semi-annually by a representative of the meter manufacturer.

Section 4.04. The parties shall provide each other from time to time with all information relevant to the proper administration of their respective responsibilities under this Agreement, or in respect of the interpretation hereof, as, and in



such form and detail as, may reasonably be requested and each shall at all reasonable times and from time to time permit the others or their representatives to examine and inspect its respective records and physical facilities relevant to the subject matter of this Agreement.

Section 4.05. The Borough may establish from time to time uniform (within all areas serviced by the Borough facilities) acceptability standards for sewage and other wastes to be discharged into the Borough treatment facilities. Such standards (presently set forth in Borough Ordinance No. 542, enacted May 18, 1971) shall be reasonable and similar to the customary standards imposed with regard to similar facilities and service area conditions. The Plant, and the alterations and additions to be made thereto, will be designed primarily for the treatment and disposal of sanitary sewage (which for the purposes hereof means the normal water-carried household and toilet wastes resulting from human occupancy as specifically defined in the then current Borough rules and regulations). The Authority or Township agree to prohibit the discharge of wastes other than sanitary sewage into its collection system except that which meets the acceptability standards established by the Borough. Prior to permitting any such discharge, the Township or Authority shall file or cause to be filed with the Borough, an Industrial Waste Questionnaire, which shall set forth pertinent data, including estimated quantity of flow and characteristics and constituents of the industrial wastes proposed for discharge. The Authority or Township agree to require those users discharging industrial wastes to the collection system to comply with all applicable pretreatment standards of the Environmental Protection Agency. The Borough in conjunction with the Township or Authority shall have the right to inspect or test any industrial waste sewage and any waste other than sanitary sewage at any time, and it shall have the further right to require pretreatment of such sewage in accordance with uniformly applied standards regulating the use of the Borough treatment facilities. The Borough shall have the right to establish the terms and conditions upon which such waste other than sanitary sewage may be disposed of and may from time to time change or alter such terms and conditions as it deems necessary.

If Borough accepts for treatment and disposal wastes other than sanitary sewage, then such acceptance shall be in accordance with and subject to current uniform standards established by the Borough for the treatment and disposal of such wastes. Reasonable notice of such standards and of any changes therein shall be given by Borough to Authority and Township. A separate charge shall be imposed by Borough for treating all wastes of greater strength or otherwise costing more to treat than normal domestic sewage, which charge shall be sufficient to pay for the cost of treating such waste, as separately computed under Section 3.01 hereof.

It is agreed that, except in the case of wastes other than sanitary sewage, for which an Industrial Waste Questionnaire has been filed and which waste has been pretreated to the extent required to meet Borough's acceptability standards, the Authority shall prohibit any discharge into the Borough's Collection System which is not made by a direct connection (by means of lateral piping) between the Collection System and the plumbing facilities of the structures on the property served, i.e., no discharge which has been subjected to, or which flows from any septic tank, cesspool or similar treatment device shall be permitted.

The Authority and the Township shall take such action in the exercise of its rights or police power as may be reasonably requested by the Borough to prohibit the users of the Authority's Collection System from discharging substances failing to meet the standards established by the Borough as aforesaid.

The Authority, the Township and the Borough shall not permit the connection, or the continuance of any connection actually made, of storm water discharge facilities to the Authority's or the Borough's Collection System and each shall take all necessary steps in the design, construction, operation and maintenance of such System (including the exercise of appropriate inspection of and control over building connections) to prevent infiltration/inflow of storm water and other improper substances into such System; provided that the Borough may continue to

discharge any cost effective infiltration/inflow to the extent permitted and approved by the Environmental Protection Agency.

Section 4.06. Should at any time the flow of waste water from the Township exceed the volume limits at the time applicable under this Agreement or should at any time the quality of such flow be in violation of the standards established by the Borough pursuant to Section 4.05, the Authority and the Township shall be liable for, in addition to any applicable surcharge, any actual damage suffered by the Borough by reason of such violations, and the Borough shall have the absolute right to have any such violation cease forthwith.

If the Borough notifies the Authority of any violation of volume limits or quality standards and the Authority or the Township does not take immediate steps to correct the violation, the Borough may bring suit at law or in equity to compel such corrective action, or may require immediate disconnection of the offending party from the Collection System.

The parties hereto agree that, in the event the waste water directly or indirectly discharged from any party's waste water collection system into the treatment plant requires special handling or treatment, the total costs incident to providing such special handling or treatment shall be borne solely by the party from whose waste water collection system the said sewage wastes are being discharged. Each of the parties agrees to indemnify and save harmless any other party against all fines, penalties, losses, costs or damages on account of any injury to persons or property or pollution incident occurring due to the negligence of any such party, its respective servants, agents or employees, or resulting from the failure of the waste water collection system or the treatment plant to function properly from any cause due to such negligence.

Section 4.07.

(A) The Borough agrees that (1) during the construction of the Outfall Sewer and the alterations and additions to the Plant, it will at all times cause to be in force builders' risk insurance (or equivalent coverage) upon any work done or materials furnished under construction contracts except foundations and any other structures not customarily covered by such insurance, such policies to be written in completed value form for 100% of the insurable value of the contracts and (2) upon completion of such construction, it will at all times cause such properties to be insured against such risks as are usually carried with respect to like properties, provided that the amounts of such insurance shall be sufficient to prevent the insured from becoming a co-insurer thereunder by reason of any co-insurance clause in the policies. All such insurance policies shall (a) be written by responsible insurance companies authorized and qualified to do business in Pennsylvania, (b) be non-assessable and (c) name the Borough and the Authority as insureds, as interests may appear, and, to the extent procurable, shall not be subject to cancellation without at least ten (10) days prior written notice to such named insureds.

In the event of any damage to the facilities covered by such insurance, the Borough shall promptly repair or replace the damaged property unless its Consulting Engineer certifies that it would not be practical and advantageous to do so.

(B) In the event that it shall become necessary, in order to transport, treat and dispose of Township sewage and wastes in accordance with the purport and intent of this Agreement, to make an extraordinary repair or replacement of the Outfall Sewer or the Plant because of damage or destruction by casualty or otherwise, including floods, and there are insufficient funds available from insurance proceeds to pay the costs and expenses thereof, the Borough and the Authority shall forthwith deposit in a special construction fund such amount as is required for the purpose, in the same respective proportions as applied to the original construction pursuant to Article II hereof.

(C) In the event that proceeds of insurance resulting from damage to the Plant

or the Outfall Sewer are not applied to the repair or replacement of the damaged property, either because the same is determined to be impractical and not advantageous (pursuant to the last paragraph of subsection (A) of this Section 4.07) or as a result of any agreement of the Borough and the Authority not to apply the same to reconstruction, such proceeds shall be applied as follows: (1) so much thereof as is necessary to pay all outstanding expenses and charges properly attributable to the operation and maintenance of the Outfall Sewer and the Plant as provided in this Agreement and all expenses and charges incidental to the cessation of the operations of such facilities including any extraordinary charge incurred as a result of damage to said facilities; (2) the remaining proceeds, if any, shall then be divided on a proportionate basis based on the respective contributions of each party to the total cost of the Outfall Sewer and the Plant from its initial construction.

Section 4.08. Each of the parties hereto agrees to employ a Consulting Engineer at all times to perform the functions of such Engineer provided for by this Agreement.

Section 4.09. The Borough shall take every reasonable step to obtain from Federal, State and other agencies, such grants-in-aid of the construction of the Outfall Sewer and the alterations and additions to the Plant as may from time to time be available and each of the other parties hereto hereby authorizes the Borough to apply for and accept (and do all other things incidental thereto) such grants for the benefit of such other parties. Any such grants received shall be applied in reduction of shares of construction costs of the Borough, on the one hand, and of the Authority, on the other hand, in the respective proportions of such shares to each other as would be calculated hereunder without regard to such grants.

Section 4.10. It is understood that the intent of this Agreement is that sewage and waste waters transmitted from the Township for treatment by the Borough shall originate within the geographical limits of Township. Should Township desire to allow connections from areas, or by subscribers located, beyond the geographical limits of Township, it shall notify the Borough and shall not allow any such connection without written approval of the Borough which approval may require that any connecting municipalities or subscribers located outside Township permit the Borough to inspect their relevant records and facilities, at all reasonable times, to the extent necessary to ascertain compliance with applicable quality restrictions as defined in then current Borough rules and regulations. Any such connection made without written approval of the Borough shall be a violation of this Agreement, and the Borough shall have the absolute right to have any such violation cease forthwith as though the same were a violation of volume limits or quality standards as set forth in Sections 4.05 and 4.06 hereof.

Section 4.11. The Borough agrees that it will not, at any time during the term of this Agreement, accept, for transportation, treatment or disposal, sewage or wastes originating in any municipality outside the Borough under terms and conditions more favorable than those applicable hereunder to the Authority, but this provision shall not preclude less favorable terms.

Section 4.12. Without limiting the generality of Section 4.04 hereof, the Township and the Authority agree to advise the Borough, without further request and in writing, from time to time but not less than once every calendar quarter, commencing at the time that the Link Line is physically connected to the Plant of (1) the number of actual user connections made to the Authority's Collection System and to any collection lines feeding into that Collection System during the period covered by such report (which period shall be measured from the last such report to the date of the report in question) and the total number of connections existing as of the last day covered by such report, (2) the nature of the use of the properties so connected and (3) if such use is other than for single family residential dwelling purposes, Authority's Consulting Engineer's opinion as to such properties' expected volume discharge into the Collection System. Should the waste water flows from the Authority Collection Systems at any time reach the point that additional connections would result in the sewage and waste flow from Township into the facilities of the Borough exceeding the volume limits applicable at that time

under this Agreement, the Authority and Township shall not permit any additional connections to be made.

Section 4.13. In the event that the Authority or Township permits the transportation through Authority's Collection System for discharge to the waste water collection, transportation and treatment facilities of Borough of waste water originating from outside the territorial boundaries of Township, Township agrees that any user charge in such other municipality or to such other municipality shall not, insofar as it relates to treatment and disposal services actually rendered by Borough, exceed the charge levied, in respect of such treatment and disposal services, upon users located within Township for equivalent service, but this limitation shall in no way affect the charges of the Authority or Township for services other than such treatment and disposal.

Section 4.14. All disputes requiring submission to arbitrators, as provided in Section 2.12 hereof, shall be submitted to the American Arbitration Association at the option of either party, all costs of the arbitration shall be borne equally by the Borough, on the one hand, and the Township or the Authority on the other hand.

Section 4.15. Should any one or more of the provisions of this Agreement for any reason be held illegal or invalid, such illegality or invalidity shall not effect any other provisions of this Agreement and this Agreement shall in such circumstances be construed and enforced as if such illegal or invalid provisions had not been contained herein.

Section 4.16. This Agreement shall become effective upon its execution and delivery by the parties hereto and, subject to the provisions of Section 2.12 hereof, the term hereof (and the right of the Authority or Township to make and maintain connections to the facilities of the Borough as herein provided) shall be perpetual.

Section 4.17. Nothing in this Agreement shall limit the discretion of the Authority or Township in determining the portions of Township in which sewers are to be constructed and the time or times of such construction.

Section 4.18. There shall be an Operating Advisory Committee comprised of three (3) members selected by the Borough, one member selected by the Authority and one member selected by West Donegal Township Authority. The Operating Advisory Committee shall meet at least quarterly to review the financial and functional operation of the regional system and treatment plant. The Operating Advisory Committee shall have access to all records, accounts and other information relating to operation to the Borough's sewer system, the Collection System and the sewage collection system of West Donegal Township Authority.

The Operating Advisory Committee should review and make recommendations on the following matters:

- (1) Volumes of flow discharged from each participating municipality compared to its reserved capacity in the Plant and systems of each municipality. This includes an analysis of infiltration/inflow problems.
- (2) The physical condition and maintenance programs used at the Plant and the system of each participating municipality or municipality authority.
- (3) The efficiency of treatment of waste water discharged to the Susquehanna River.
- (4) Sludge disposal methods and costs.
- (5) Industrial waste discharges that could be causing reduced treatment efficiency or violations of discharge permits. Results of

periodic industrial wastes tests should be available.

(6) Annual operating budgets of the systems of the participating municipalities or municipality authorities.

(7) Flow projections for the systems and Plant in order to facilitate future planning for expansion of the Plant and systems.

(8) Major expenditures or capital additions of any of the systems and the Plant.

Minutes of the meeting shall be recorded and sent to the Authorities, Boards, and Councils of the participating municipalities. Any cost incurred by the Committee shall be apportioned as the Committee shall determine.

Representatives of the systems, their respective solicitors, Consulting Engineers and the systems and operating personnel, shall meet with the Operating Advisory Committee when they receive requests to do so.

IN WITNESS WHEREOF, the parties hereto have each caused the due execution and attestation hereof by its duly authorized officers as of the day and year aforesaid.

BOROUGH OF ELIZABETHTOWN

By: Michael M. Bailey *clerk*

(BOROUGH SEAL)

Attest: Michael J. Kelly *Sec.*

MOUNT JOY TOWNSHIP AUTHORITY

By: Frank J. Bailey *Pres.*

(AUTHORITY SEAL)

Attest: John E. Martin *SEC.*

TOWNSHIP OF MOUNT JOY

By: Charles E. Curran *Sec. Clk.*

(TOWNSHIP SEAL)

Attest: Richard E. Ferry

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this, the *31st* day of *January*, 1977, before me, the undersigned Notary Public, personally appeared *Meade S. Bierly* who acknowledged himself to be the President of the Borough of Elizabethtown, Lancaster County, Pennsylvania, and that he as such officer, being authorized to do so, executed the foregoing Agreement for the purposes therein contained by signing the name of the said Borough by himself as such officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Bonita L. Groff
Notary Public
BONITA L. GROFF
Notary Public, Lancaster, Lancaster Co.
My Commission Expires Sept. 8, 1980

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this, the *27* day of *JANUARY*, 1977, before me, the undersigned Notary Public, personally appeared *CHARLES G. BAILEY, JR.* who acknowledged himself to be the Chairman of the Board of Mount Joy Township Authority, Lancaster County, Pennsylvania, and that he as such officer, being authorized to do so, executed the foregoing Agreement for the purposes therein contained by signing the name of the said Authority by himself as such officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Rheba M. Leonard
Notary Public
RHEBA M. LEONARD, Notary Public
Elizabethtown Borough, Lancaster County, Pa.
My Commission Expires December 11, 1979

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this, the *10th* day of *February*, 1977, before me, the undersigned Notary Public, personally appeared *Charles Crowe, Sr.* who acknowledged himself to be the Chairman of the Board of Supervisors of Mount Joy Township, a body corporate and politic, and that he as such officer, being authorized to do so, executed the foregoing Agreement for the purposes therein contained by signing the name of the Township by himself as such officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Richard E. Forry
Notary Public
RICHARD E. FORRY, Notary Public
Elizabethtown, Lancaster Co., Pa.
My Commission Expires July 7, 1980

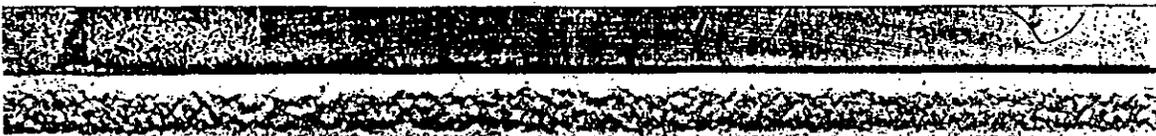


EXHIBIT A

BOROUGH OF ELIZABETHTOWN
LANCASTER COUNTY, PENNSYLVANIA

COST DISTRIBUTION FACTORS

I. 1995 Average Daily Flows

	Flow (MGD)	Distribution Factor
Elizabethtown Borough	2.240	0.74666
Mt. Joy Township	0.404	0.13467
West Donegal Township	0.356	0.11867
Total	<u>3.000</u>	<u>1.00000</u>

II. 2020 Peak Flow Rates

	Flow (MGD)	Distribution Factor
Elizabethtown Borough	6.250	0.67568
Mt. Joy Township	1.560	0.16865
West Donegal Township	1.440	0.15567
Total	<u>9.250</u>	<u>1.00000</u>

III. Composite

	Distribution Factor
Elizabethtown Borough	0.72241
Mt. Joy Township	0.14627
West Donegal Township	0.13132
Total	<u>1.00000</u>

IV. Estimated Initial Year (1979)
Average Daily Flows

	Flow (MGD)	Distribution Factor
Elizabethtown Borough	1.634	0.74612
Mt. Joy Township	0.270	0.12329
West Donegal Township	0.286	0.13059
Total	<u>2.190</u>	<u>1.00000</u>

Capital Cost Distribution Formula:

$$A = R \{ (B-C) + D \}$$

Where:

A = proportion of capital costs allocated to Authority as referred to in Article II.

R = capital cost distribution factor applicable to Authority.

B = total project costs as described in Article II.

C = total amount of federal grant received for construction of wastewater treatment facilities and outfall sewer to be used jointly by Borough and Authority.

D = agreed cost of existing wastewater treatment and conveyance facilities to be jointly used by Borough and Authority.

EXHIBIT B

BOROUGH OF ELIZABETHTOWN
LANGASTER COUNTY, PENNSYLVANIA

COST DISTRIBUTION OF EXISTING TREATMENT FACILITIES

<u>Municipality</u>	<u>Design Average Flow (mgd)</u>	<u>Distribution Factor (percent) (1)</u>	<u>Contribution (2)</u>
Borough of Elizabethtown	2.240	74.666	\$ 469,612
Mount Joy Township	0.404	13.467	84,701
West Donegal Township	0.356	11.867	74,637
TOTAL	3.000	100.000	\$ 628,950

(1) Based on Exhibit A

(2) Based on present 2% state subsidy at \$12,579

BOROUGH OF ELIZABETHTOWN
LANCASTER COUNTY, PENNSYLVANIA

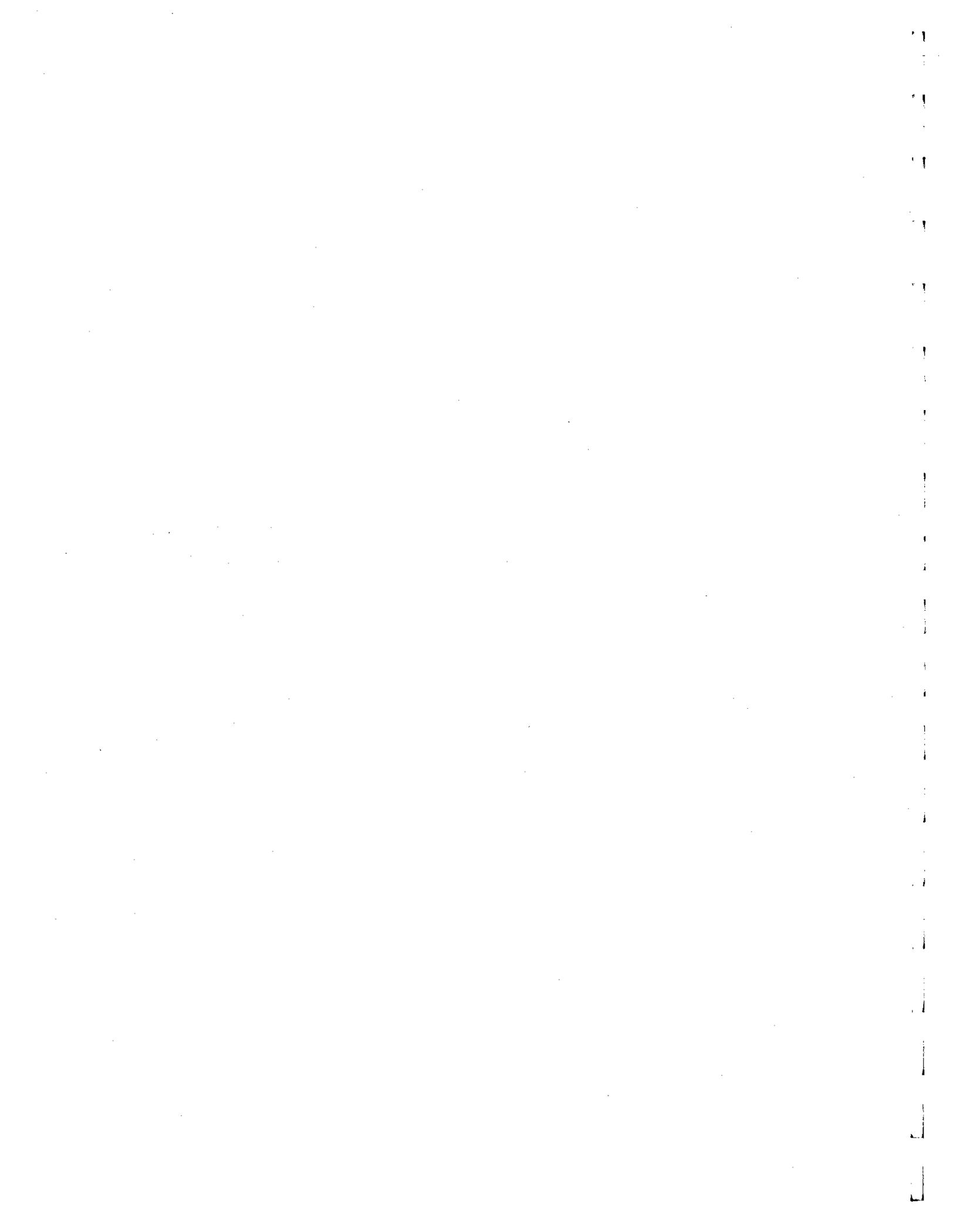
ESTIMATED PROJECT COST DISTRIBUTION

	TOTAL	GRANT ELIGIBLE	GRANT	NET PROJECT COST	ELIGIBLE FOR SHARING	BASIS FOR SHARING (1)	WEST DONEGAL TWP	MT. JOY TWP	ELIZA- BETHTOWN BOROUGH
Construction	4,200,000	4,200,000	3,150,000	1,050,000	1,050,000	III	137,886	153,534	758,530
Engineering	604,120	564,989	423,742	180,378	180,378	III	23,687	26,384	130,307
Inspection	280,000	280,000	210,000	70,000	70,000	III	9,192	10,239	50,569
Infiltration/Inflow	150,000	150,000	112,500	37,500	---	---	---	---	37,500
Legal	41,000	35,000	26,250	14,750	6,500	III	854	951	12,945
Trustee	5,000	---	---	5,000	---	---	---	---	5,000
Land and R/N	75,000	---	---	75,000	75,000	II	11,675	12,649	50,676
Advertising	2,500	2,500	1,875	625	625	III	82	91	452
Printing	1,000	---	---	1,000	---	---	---	---	1,000
Interest During Const. (7 1/2% @ 2 yrs.)	137,699 (2)	---	---	137,699 (2)	---	---	---	---	137,699(2)
Bond Discount (2 1/2%)	22,950 (2)	---	---	22,950 (2)	---	---	---	---	22,950(2)
Operator Supervision and Training	5,000	5,000	3,750	1,250	1,250	I	148	168	934
Operations Manual	20,000	20,000	15,000	5,000	5,000	I	594	673	3,733
Contingencies	420,000	210,000	157,500	262,500	262,500	III	34,472	38,396	189,632
Subtotal	5,964,269	5,467,489	4,100,617	1,863,652	1,651,253	---	218,590	243,135	1,401,927
Existing Treatment Facilities	---	---	---	---	628,950	I	74,637	84,701	---
Existing Collection System	---	---	---	---	---	---	14,757	149,189	---
Total	5,964,269	5,467,489	4,100,617	1,863,652	2,280,203	---	307,984	477,025	1,078,643 (3)

(1) Based on Exhibit A

(2) Computed on the basis of adding all net project costs and deducting total cost contributions from Mt. Joy and West Donegal for existing and new facilities (1,703,003 - 323,284 - 243,135 - 218,590).

(3) Based on a total cash contribution of 323,284 from Mt. Joy and West Donegal for existing facilities.



BOROUGH OF ELIZABETHTOWN
LANCASTER COUNTY, PENNSYLVANIA

ESTIMATED OPERATION, MAINTENANCE, AND ADMINISTRATIVE COSTS
FOR JOINTLY USED TREATMENT FACILITIES FOR INITIAL YEAR 1979

	TOTAL	BASIS FOR SHARING (1)	ELIZA- BETHITOWN BOROUGH	MT. JOY TWP	WEST DONEGAL TWP
<u>Operation and Maintenance</u>					
Salaries and Wages	\$ 59,000 (2)	IV	\$ 44,021	\$ 7,274	\$ 7,705
Electric	26,000 (3)	IV	19,399	3,206	3,395
Chemicals	51,300 (4)	IV	38,276	6,325	6,699
Fuel	3,000	IV	2,238	370	392
Water	1,000	IV	746	123	131
Repairs	5,000	IV	3,731	616	653
Materials and Supplies	1,000	IV	746	123	131
Transportation	4,000	IV	2,985	493	522
Telephone	200	IV	149	25	26
Miscellaneous	8,000	IV	5,969	986	1,045
Subtotal	\$158,500		\$118,260	\$19,541	\$20,699
<u>Administration</u>					
Salaries and Wages	22,000 (5)	IV	16,415	2,712	2,873
Insurance	20,000 (6)	IV	14,922	2,466	2,612
Engineering	1,500 (7)	IV	1,119	185	196
Legal	1,500 (8)	IV	1,119	185	196
Materials and Supplies	150 (9)	IV	112	18	20
Office Rental	1,800 (10)	IV	1,343	222	235
Telephone	900 (11)	IV	672	111	117
Miscellaneous	900 (12)	IV	672	111	117
Subtotal	\$ 48,750	--	\$ 36,374	\$ 6,010	\$ 6,366
Total	\$207,250		\$154,634	\$25,551	\$27,065
State Subsidy	\$ 52,804 (13)	III	\$ 38,146	\$ 7,724	\$ 6,934
Net O&M Costs	\$154,446		\$116,488	\$17,827	\$20,131

(1) See Exhibit A

(2) Superintendent \$ 13,000, 2 operators \$20,000, 2 laborers \$16,000, laboratory man \$10,000.

- (3) 650,000 Kilowatt Hours per year at \$0.04/kwh.
- (4) 40,000 pounds of chlorine per year at \$0.15 , 1,070,000 pounds of alum at \$0.04/lb.,
1,677 pounds of polymer at \$1.50/lb.
- (5) 1/2 of Manager \$8,500, 1/4 of Assistant Manager \$3,000, Secretary \$10,500.
- (6) Workmen's compensation, general liability, errors and omissions, automobile, liability, umbrella,
fire, floater, valuable paper, boiler and machinery, social security, group insurance, pension plan
(40% of Borough expenses).
- (7) Wastewater treatment plant related engineering expenses.
- (8) Wastewater treatment plant related legal expenses.
- (9) Wastewater treatment plant related expenses.
- (10) Wastewater treatment plant related rental.
- (11) Wastewater treatment plant related telephone expenses.
- (12) Wastewater treatment plant related miscellaneous expenses.
- (13) Two percent of \$1,863,652, plus existing state subsidy of \$15,531.

BOROUGH OF ELIZABETHTOWN
LANCASTER COUNTY, PENNSYLVANIA

ESTIMATED OPERATION, MAINTENANCE, AND ADMINISTRATIVE COSTS
FOR COLLECTION AND CONVEYANCE FACILITIES
FOR INITIAL YEAR 1979

	<u>TOTAL</u>	<u>ELIZABETHTOWN BOROUGH</u>	<u>MT. JOY TWP. (4)</u>	<u>W. DONEGAL TWP. (4)</u>
<u>Operation and Maintenance</u>				
Salaries and Wages	\$ 30,000 (1)			
Electric	600 (2)			
Fuel	800			
Repairs	12,000			
Miscellaneous	3,600			
Subtotal	\$ 47,000			
<u>Administration</u>				
Salaries and Wages	\$ 8,500 (3)			
Insurance	5,000			
Engineering	1,000			
Legal	1,000			
Materials and Supplies	50			
Office Rental	600			
Telephone	300			
Miscellaneous	300			
Subtotal	\$16,750			
TOTAL	\$63,750	\$ 61,207	\$ 2,151	\$ 392 (5)

- (1) 5 operators
- (2) 15,000 Kwh at \$ 0.04/Kwh
- (3) 1/4 of assistant manager \$ 3,000, 1/2 Secretary \$ 5,500
- (4) $A \div B \times C \times D \div (D + E)$

where A = total length of jointly used facilities

B = total length of Borough Sewers

C = O, M & A cost of Borough collection & conveyance facilities

D = total flow from adjoining township for the year *THAT PASSES THRU ANY PART OF BORO SYSTEM*

E = total flow from ^{ALL MUNICIPALITIES +} Borough of Elizabethtown for the year *THAT PASSES THRU ANY PART OF BORO SYSTEM*

Estimated 1979 contributions

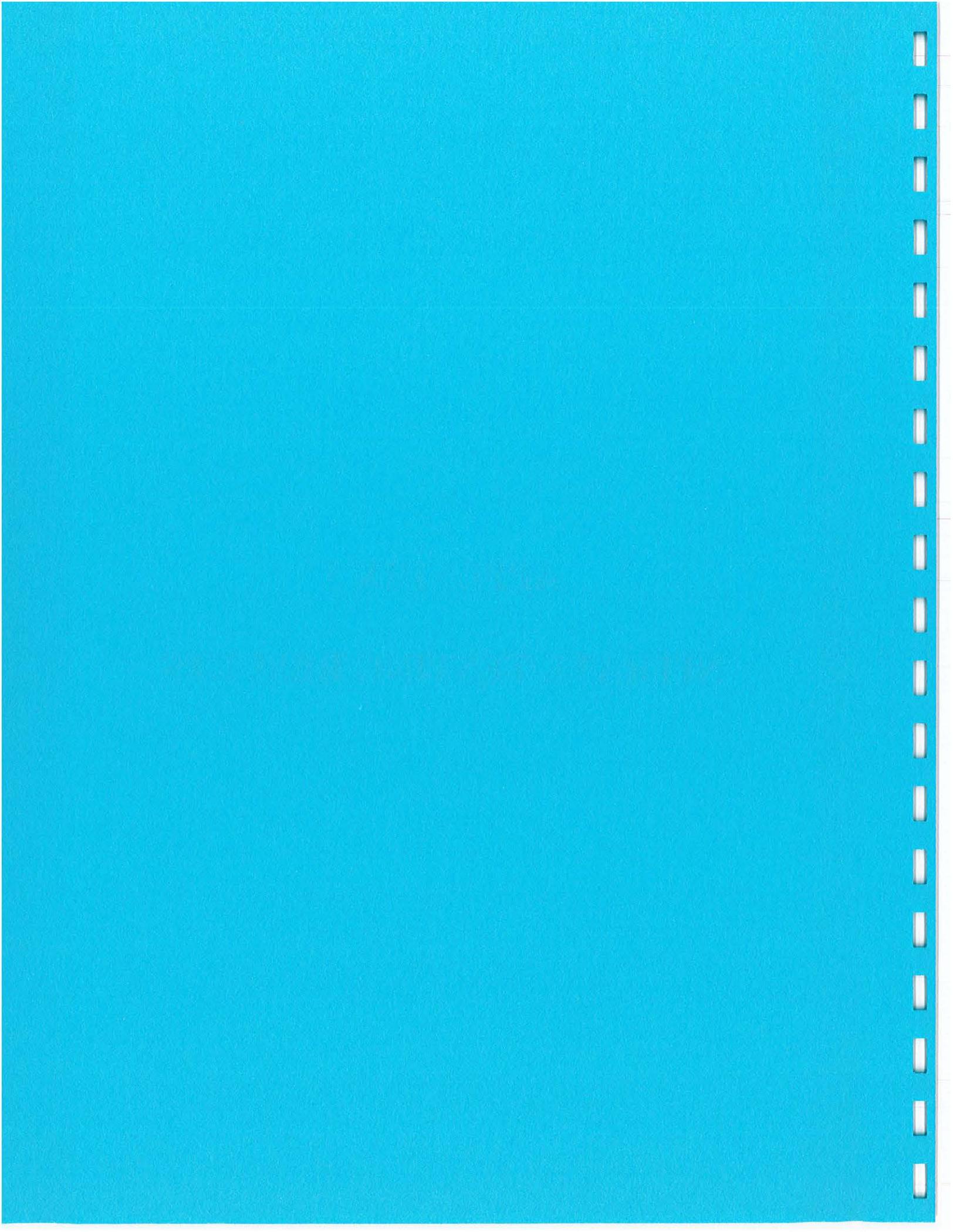
Mt. Joy Twp. = 38,579 L.F. \div 162,150 L.F. \times \$ 63,750 \times 0.270 mgd \div 1.904 mgd

W. Donegal Twp. = 6,762 L.F. \div 162,150 L.F. \times \$ 63,750 \times 0.286 mgd \div 1.920 mgd

- (5) Includes a credit of \$ 4/year for not using electricity.

APPENDIX 3

NITRATE TESTING RESULTS



**TABLE A4
MOUNT JOY TWP. 537 PLAN
WELL TESTING RESULTS**

SAMPLE NUMBER	TOTAL COLIFORM (/100ml)	NITRATES (mg/L)	FECAL COLIFORM (/100ml)	FECAL STREP. (/100ml)	WELL DATA		
					AGE	DEPTH	METHOD
1	8	7.61	8		?	?	?
2	2	28.1	0	1	?	200	DRILLED
3	0	7.63	0		?	?	?
4	5	14.8	4		?	120	DRILLED
5	0	0.042	0		?	?	?
6	34	9.54	34		?	?	DRILLED
7	28	3.84	1	20	?	?	SPRING
8	0	7.58	0		5	150	DRILLED
9	9	5.12	0		3	225	DRILLED
10	1	7.06	1		5	200	DRILLED
11	43	5.66	18	150	?	?	?
12	0	6.44	0		13	120	DRILLED
13	0	1.92	0		15	250	DRILLED
14	0	3.43	0	0	?	?	DRILLED
15	0	0.33	0		?	?	?
16	0	8.42	0		14	150	DRILLED
17	15	14.8	7	5	?	?	?
18	0	6.95	0		?	?	?
19	80	12.9	0		45	42	DRILLED
20	25	9.38	0		?	?	?
21	1	4.21	0		14	100	DRILLED
22	0	3.61	0		?	?	?
23	1	4.64	0		22	?	?
24	0	7.94	0		?	?	?
25	0	3.87	0		11	150	DRILLED
26	0	4.7	0		12	150	DRILLED
27	0	11.2	0		?	?	?
28	0	12.4	0		26	75	DRILLED
29	80	4.54	80		?	15	DUG
30	4	7.23	0		?	?	?
31	19	21.9	13		?	?	?
32	0	7.7	0		?	?	DRILLED
33	0	9.94	0		?	?	?
34	80	2.22	0		?	?	?
35	9	12.6	5		1	150	DRILLED
36	0	24.2	0	0	8	150	DRILLED
37	41	12.2	27		7	160	DRILLED
38	95	19	20	9	?	?	?
39	0	15.2	0		?	?	?
40	0	0.27	0		?	?	?
41	0	11.3	0		11	?	DRILLED
42	0	9.14	0		?	?	?
43	18	1.02	0		?	?	?
44	0	20.2	0		?	?	?
45	0	3.6	0		?	?	?
46	0	0.27	0	0	?	?	?
47	0	18.6	0		8	150	DRILLED
48	0	7.29	0		?	?	?
49	0	5.16	0		26	140	DRILLED
50	0	6.96	0		?	?	?
51	0	15.6	0	0	6	140	DRILLED
52	0	3.16	0		?	?	?
53	0	14.8	0		?	?	?

**TABLE A4
MOUNT JOY TWP. 537 PLAN
WELL TESTING RESULTS**

SAMPLE NUMBER	TOTAL COLIFORM (/100ml)	NITRATES (mg/L)	FECAL COLIFORM (/100ml)	FECAL STREP. (/100ml)	WELL DATA		
					AGE	DEPTH	METHOD
54	0	8.07	0		9	125	DRILLED
55	0	5.02	0		?	?	?
56	0	9.7	0		?	80	DRILLED
57	0	0.96	0		6	217	DRILLED
58	80	12.4	23		?	?	CISTERN
59	80	16.3	80		33	125	DRILLED
60	0	12.8	0		?	?	?
61	0	7.51	0	0	?	?	?
62	0	9.61	0		7	?	DRILLED
63	0	9.23	0		?	?	?
64	0	3.68	0		19	200	DRILLED
65	80	21.7	80	223	?	?	?
66	0	13.5	0		10	150	DRILLED
67	0	7.49	0	0	?	?	?
68	0	6.16	0		?	?	?
69	0	3.14	0		7	325	DRILLED
70	0	5.39	0	0	10	200	DRILLED
71	0	2.86	0		26	122	DRILLED
72	0	3.92	0	0	18	150	DRILLED
73	0	6.53	0		13	120	DRILLED
74	61	19.5	19	37		60	DRILLED
75	44	0.92	41		21	30	DRILLED
76	0	3.32	0		37	90	DRILLED
77	0	3.36	0		19	150	DRILLED
78	0	2.67	0		4	275	DRILLED
79	1	2.38	0		?	?	?
80	0	10.4	0		?	?	?
81	31	9.72	20		100	?	DUG
82	0	2.14	0		1	200	DRILLED
83	0	11.3	0		?	?	?
84	80	19.1	0	72	?	?	?
85	3	18.1	1		40	118	DRILLED
86	80	11.6	80	3		?	SPRING
87	56	9.1	28		16	122	DRILLED
88	1	6.09	0		?	?	?
89	0	2.37	0	0	?	?	?
90	0	7.67	0	0	12	?	DRILLED
91	0	0	1.69		14	80	DRILLED
92	0	3.87	0		?	110	DRILLED
93	0	5.66	0		21	100	DRILLED
94	0	4.82	0		?	?	DUG
95	2	4.61	1		?	?	DRILLED
96	0	8.25	0		?	?	?
97	0	1.18	0		?	?	?
98	0	4.41	0		26	100	DRILLED
99	17	3.1	12	9	?	?	?
100	0	11.1	0		?	?	?
101	0	19.3	0	0	?	?	?
102	80	9.61	80		?	?	SPRING
103	0	6.84	0		?	128	DRILLED
104	0	10.4	0	0	28	181	DRILLED
105	3	12.3	12	5	27	120	DRILLED
106	0	1.89	0		?	?	?

**TABLE A4
MOUNT JOY TWP. 537 PLAN
WELL TESTING RESULTS**

SAMPLE NUMBER	TOTAL COLIFORM (/100ml)	NITRATES (mg/L)	FECAL COLIFORM (/100ml)	FECAL STREP. (/100ml)	WELL DATA		
					AGE	DEPTH	METHOD
107	0	6.55	0		?	?	?
108	4	7.35	0	4	?	?	?
109	0	2.05	0	0	?	?	?
110	0	6.44	0		19	102	?
111	0	6.83	0		?	?	?
112	0	5.01	0	0	13	125	DRILLED
113	0	4.12	0		12	275	DRILLED
114	0	5.26	0		?	?	DRILLED
115	1	2.99	1.9	0	27	97	DRILLED
116	0	2.71	0		10	350	DRILLED
117	38	3.99	27		?	?	?
118	0	7.43	0		?	?	?
119	0	6.15	0		?	?	DRILLED
120	0	1.11	0	0	7	225	DRILLED
121	0	2.97	0	0	49	81	DRILLED
122	0	9.35	0		11	125	DRILLED
123	36	12.2	12		?	?	?
124	0	9.31	0	0	26	220	DRILLED
125	0	12.8	0	0	?	?	?
126	80	9.81	53		37	125	?
127	0	0.29	0		?	?	?
128	0	6.08	0		?	?	?
129	0	21.3	0		?	?	?
130	0	12.1	0	0	?	?	?
131	0	6.23	0		?	60	DRILLED
132	0	11.9	0		?	?	?
133	0	9.93	0	0	18	180	DRILLED
134	16	4.88	0	0	7	375	DRILLED
135	0	9.02	0	0	?	?	?
136	0	10.2	0		15	75	DRILLED
137	0	9.16	0	0	?	?	?
138	0	6.77	0		13	150	DRILLED
139	1	8.24	0	3	13	120	DRILLED
140	0	6.67	0		15	130	DRILLED
141	0	4.22	0		?	?	?
142	0	6.55	0		12	250	DRILLED
143	0	1.26	0		20	200	DRILLED
144	74	9.28	69		?	?	?
145	41	15.5	43	6	19	120	DRILLED
146	0	6	0		?	?	?
147	0	19.2	0		?	?	?
148	0	4.85	0		?	?	?
149	8	3.86	3	56	?	?	?
150	0	3.99	0		?	?	?
151	0	18.5	0	0	?	?	?
152	26	9.33	23		?	?	?
153	80	1.47	0		4	150	DRILLED
154	48	24.4	43		18	120	DRILLED
155	0	14.7	0		?	?	?
156	0	21.6	0		?	?	?
157	0	1.3	0		?	?	?
158	0	11.1	0		7	125	DRILLED
159	80	30.3	36		4	?	DRILLED

**TABLE A4
MOUNT JOY TWP. 537 PLAN
WELL TESTING RESULTS**

SAMPLE NUMBER	TOTAL COLIFORM (/100ml)	NITRATES (mg/L)	FECAL COLIFORM (/100ml)	FECAL STREP. (/100ml)	WELL DATA		
					AGE	DEPTH	METHOD
160	0	4.3	0		4	225	DRILLED
161	0	1.49	0		?	?	?
162	1	10.9	0		?	?	?
163	0	16.8	0	0	3	175	DRILLED
164	0	9.37	0		6	150	DRILLED
165	0	12.7	0		?	?	?
166	1	10.5	0	2	71	75	DRILLED
167	0	7.73	0		?	80	DRILLED
168	80	0.25	78	373	3	300	DRILLED
169	0	1.81	0	0	?	?	?
170	0	8.49	0		?	?	?
171	0	17.4	0		6	175	DRILLED
172	0	9.37	0		39	120	DRILLED
173	80	7.17	56		?	48	DUG
174	2	20.2	1	513	?	?	?
175	0	10.7	0		?	?	?
176	2	10	0		?	?	DRILLED
177	0	4.82	0		6	175	DRILLED
178	0	4.01	0		16	90	DRILLED
179	0	0.5	0	0	?	?	?
180	0	11.5	0		?	?	?
181	0	8.88	0		?	?	?
182	0	21.1	0		?	?	?
183	80	11.2	27		?	?	?
184	0	12.7	0		?	145	DRILLED
185	0	8.95	0	0	?	?	?
186	73	14.2	61		?	200	DRILLED
187	3	3	3		3	150	DRILLED
188	0	0.21	0		?	?	DRILLED
189	5	4.61	6		28	85	DRILLED
190	13	8.74	10		?	?	?
191	1	4.72	0		?	?	?
192	0	1.24	0		?	?	?
193	75	14.5	0	0	?	?	?
194	6	11.3	5	1	?	?	?
195	0	16.1	0		?	?	?
196	6	5.87	2		?	?	?
197	0	14.1	0		?	?	?
198	0	2.88	0		?	?	?
199	1	0.23	0	0	12	325	DRILLED
200	0	0.29	0	0		20	DUG
201	0	0.18	0		?	?	?
202	0	0.34	0	0	6	130	DRILLED
203	26	15.6	8		11	200	DRILLED
204	0	0.2	0	0	?	?	?
205	2	0.23	1		?	?	?
206	0	0.24	0	0	22	100	DRILLED
207	11	0.41	3	0	?	?	?
208	0	3.99	0		?	?	?
209	74	9	63		?	250	DRILLED
210	2	13.7	1		?	200	DRILLED
211	0	0.64	0		?	?	?
212	1	0.27	0		5	225	DRILLED

**TABLE A4
MOUNT JOY TWP. 537 PLAN
WELL TESTING RESULTS**

SAMPLE NUMBER	TOTAL COLIFORM (/100ml)	NITRATES (mg/L)	FECAL COLIFORM (/100ml)	FECAL STREP. (/100ml)	WELL DATA		
					AGE	DEPTH	METHOD
213	8	20.9	2		12	450	DRILLED
214	1	19.7	0		?	?	?
215	3	31.2	1		?	?	?
216	80	16.3	69		?	?	?
217	0	1.53	0		27	302	DRILLED
218	0	7.58	0		?	?	?
219	0	0.54	0		34	115	DRILLED
220	0	7.42	0	0	?	?	?
221	0	0.9	0		?	?	?
222	2	6.48	0		?	?	?
223	5	0.63	1		?	?	?
224	80	8.98	0		6	400	DRILLED
225	0	1.24	0		3	?	DRILLED
226	0	3.75	0	0	6	300	DRILLED
227	0	0.93	0		?	?	?
228	0	7.3	0	0	2	250	DRILLED
229	0	11	0		?	160	?
230	0	10.5	0		1	350	DRILLED
231	0	5.73	0		37	112	DRILLED
232	0	0.55	0		26	165	DRILLED
233	6	1.47	0		?	?	DRILLED
234	0	0.55	0		3	100	DRILLED
235	0	0.46	0	0	?	?	?
236	2	0.27	0		?	?	?
237	22	34.3	19		70	125	DRILLED
238	24	1.63	0	127	6	200	DRILLED
239	33	2.15	0		?	?	?
240	0	0.2	0		?	?	?
241	0	5.71	0	0	?	400	DRILLED
242	0	8.38	0		?	?	?
243	0	0.24	0		31	100	DRILLED
244	0	19.8	0		34	110	DRILLED
245	0	18.4	0		?	?	?
246	0	24.5	0	0	?	?	?
247	0	9.92	0		2	342	DRILLED
248	3	13.1	0		4	400	DRILLED
249	80	10.7	0		?	?	?
250	0	5.06	0		?	?	?
251	2	15.5	2		9	?	DRILLED
252	0	8.38	0	0	?	?	?
253	0	8.24	0		?	?	?
254	80	14.5	75		?	400	DRILLED
255	0	12.7	0		?	?	?
256	17	14.5	3	9	?	?	?
257	0	10.9	0		?	?	?
258	0	3.95	0		3	400	DRILLED
259	0	0.64	0		3	225	DRILLED
260	4	0.29	0		4	400	DRILLED
261	5	6.01	0		?	?	?
262	6	0.25	1		?	?	?
263	0	2.24	0		?	?	?
264	0	4.31	0		?	?	?
265	0	12.6	0		?	?	?

**TABLE A4
MOUNT JOY TWP. 537 PLAN
WELL TESTING RESULTS**

SAMPLE NUMBER	TOTAL COLIFORM (/100ml)	NITRATES (mg/L)	FECAL COLIFORM (/100ml)	FECAL STREP. (/100ml)	WELL DATA		
					AGE	DEPTH	METHOD
266	0	5.77	0		7	100	DRILLED
267	0	3.71	0	0	4	200	DRILLED
268	80	12.9	0		?	?	DRILLED
269	0	7.6	0		?	?	?
270	4	7.93	0	0	?	?	?

APPENDIX 4

**WEST DONEGAL SEWER SYSTEM
EVALUATION**

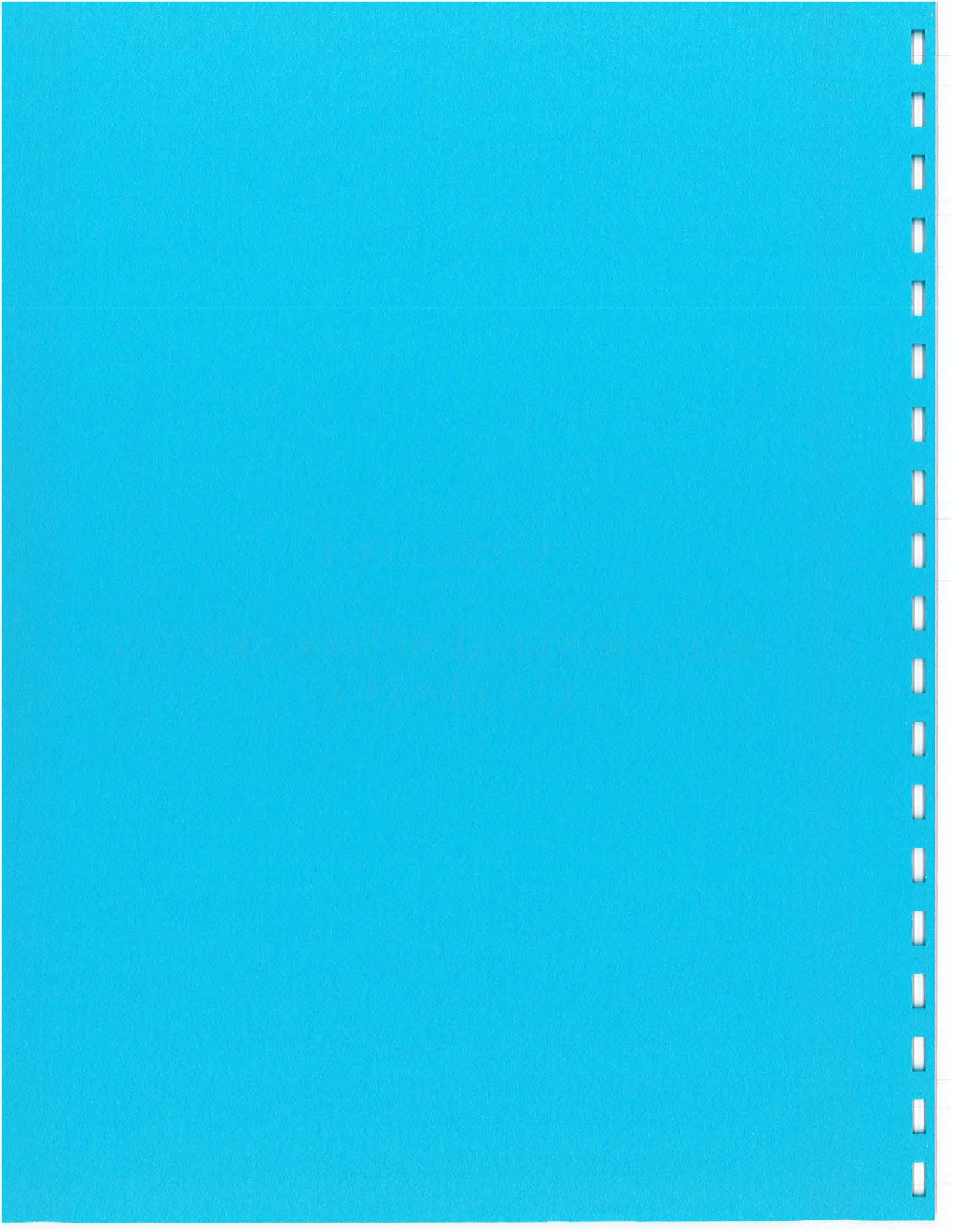


TABLE D
 WEST DONEGAL TOWNSHIP AUTHORITY
 MOUNT JOY TOWNSHIP AUTHORITY
 MJTA ALLOCATIONS IN WDTA FACILITIES
 BASINS H, I, J AND P - PROJECTED FLOW @ 1.4992 MGD PDF

Contract No.	Sewer Run (MH to MH)	Pipe Capacity (mgd)	Current Allocations (mgd)			D MJTA Request	D1 WDTA Remaining	E WDTA Sell to MJTA	F 1990 Cost	G MJTA Capital Contribution	New Allocations (mgd)	
			Distribution Factors		H West Donegal (Remaining)						I Mount Joy (Request)	
		A	B	C								
A. Collection Sewers												
1.	MH12 - MH1		0.5139	0.4861								
	12-13	0.6295	0.3235	0.3060	0.0156	0.3197	0	\$11,700	\$0	0.3235	0.3060	
	13-14	0.6197	0.3185	0.3012	0.0156	0.3122	0	\$18,200	\$0	0.3185	0.3012	
	14-15	0.4938	0.2538	0.2400	0.0156	0.2444	0	\$20,000	\$0	0.2538	0.2400	
	15-16	0.5060	0.2600	0.2460	0.0156	0.2482	0	\$18,750	\$0	0.2600	0.2460	
	16-17	0.4749	0.2441	0.2308	0.0156	0.2297	0	\$14,750	\$0	0.2441	0.2308	
	17-5	0.4938	0.2538	0.2400	0.0156	0.2344	0	\$12,500	\$0	0.2538	0.2400	
	5-4	0.6295	0.3235	0.3060	0.0156	0.3122	0	\$18,750	\$0	0.3235	0.3060	
	4-3	0.4938	0.2538	0.2400	0.0156	0.2463	0	\$20,000	\$0	0.2538	0.2400	
	3-2	1.1069	0.5688	0.5381	0.0156	0.5639	0	\$20,000	\$0	0.5688	0.5381	
	2-1	0.7808	0.4013	0.3795	0.0156	0.3994	0	\$20,000	\$0	0.4013	0.3795	
2.	MH5 - MH21		0.5102	0.3898								
	5-18	0.5465	0.3335	0.2130	0.1364	0.3023	0	\$19,750	\$0	0.3335	0.2130	
	18-19	0.4938	0.3013	0.1925	0.1364	0.2551	0	\$11,100	\$0	0.3013	0.1925	
	19-21	0.4938	0.3013	0.1925	0.1364	0.2532	0	\$11,100	\$0	0.3013	0.1925	
3.	MH21 - MH31		0.7221	0.2779								
	21-29	0.4938	0.3566	0.1372	0.1364	0.3010	0	\$20,200	\$0	0.3566	0.1372	
	29-30	0.4938	0.3566	0.1372	0.1364	0.2972	0	\$15,600	\$0	0.3566	0.1372	
	30-31	0.5296	0.3824	0.1472	0.1364	0.3186	0	\$20,000	\$0	0.3824	0.1472	
4.	MH31 - MH32		0.5426	0.1574								
	31-32	0.5521	0.4652	0.0869	0.1364	0.4161	0.0495	\$850	\$18	0.4157	0.1364	
5.	MH54 - MH47		0.5918	0.1082								
	54-55	0.4938	0.4404	0.0534	0.1364	0.3066	0.0830	\$19,850	\$801	0.3574	0.1364	
	55-56	0.4938	0.4404	0.0534	0.1364	0.2998	0.0830	\$20,000	\$807	0.3574	0.1364	
	56-57	0.4938	0.4404	0.0534	0.1364	0.2935	0.0830	\$20,000	\$807	0.3574	0.1364	
	57-58	0.5238	0.4671	0.0567	0.1364	0.3158	0.0797	\$18,250	\$666	0.3874	0.1364	
	58-47	0.8659	0.7722	0.0937	0.1364	0.6166	0.0427	\$15,600	\$185	0.7295	0.1364	

TABLE D
 WEST DONEGAL TOWNSHIP AUTHORITY
 MOUNT JOY TOWNSHIP AUTHORITY
 MJTA ALLOCATIONS IN WDTA FACILITIES
 BASINS H, I, J AND P - PROJECTED FLOW @ 1.4992 MGD PDF

	Sewer Run (MH to MH)	A Pipe Capacity (mgd)	Current Allocations (mgd) Distribution Factors		D MJTA Request	D1 WDTA Remaining	E WDTA Sell to MJTA	F 1990 Cost	G MJTA Capital Contribution	H	I
			B West Donegal	C Mount Joy						New Allocations West Donegal (Remaining)	Mount Joy (Request)
6.	MH47 - MH46A 47-46A	0.4813	0.9071 0.4366	0.0929 0.0447	0.1364	0.2472	0.0917	\$17,900	\$818	0.3449	0.1364
7.	MH6 - MH11		0.4500	0.5500							
	6-7	1.0591	0.4766	0.5825	0.0098	0.4747	0	\$19,850	\$0	0.4766	0.5825
	7-8	1.6600	0.7470	0.9130	0.0098	0.7432	0	\$19,650	\$0	0.7470	0.9130
	8-9	1.1581	0.5211	0.6370	0.0098	0.5161	0	\$19,700	\$0	0.5211	0.6370
	9-10	0.7729	0.3478	0.4251	0.0098	0.3428	0	\$19,700	\$0	0.3478	0.4251
	10-11	0.6762	0.3043	0.3719	0.0098	0.3018	0	\$8,650	\$0	0.3043	0.3719
8.	MH10 - MH46A		0.4234	0.5766							
	10-46	0.9499	0.4022	0.5477	0.2453	0.3528	0	\$12,650	\$0	0.4022	0.5477
	46-46A	1.1554	0.4892	0.6662	0.2453	0.2273	0	\$6,350	\$0	0.4892	0.6662
9.	MH66 - MH69		0.5435	0.4565							
	66-67	0.8373	0.4551	0.3822	0.0048	0.4544	0	\$12,700	\$0	0.4551	0.3822
	67-68	0.7808	0.4244	0.3564	0.0048	0.4237	0	\$11,000	\$0	0.4244	0.3564
	68-69	1.0791	0.5865	0.4926	0.0048	0.5865	0	\$15,500	\$0	0.5865	0.4926
10.	MH68 - MH64A		0.6216	0.3784							
	68-65	0.4938	0.3069	0.1869	0.0048	0.3063	0	\$10,550	\$0	0.3069	0.1869
	65-64A	1.1581	0.7199	0.4382	0.0048	0.7192	0	\$5,250	\$0	0.7199	0.4382
11.	MH61 - MH64A		0.6542	0.3458							
	61-60	1.2260	0.8020	0.4240	0.3817	0.5583	0	\$10,380	\$0	0.8020	0.4240
	60-62	1.6509	1.0800	0.5709	0.3817	0.8319	0	\$9,240	\$0	1.0800	0.5709
	62-63	0.8953	0.5857	0.3096	0.3817	0.3364	0.0721	\$6,000	\$116	0.5136	0.3817
	63-63A	1.8458	1.2075	0.6383	0.3817	0.9563	0	\$11,700	\$0	1.2075	0.6383
	63A-64A	1.8512	1.2111	0.6401	0.3817	0.9598	0	\$2,100	\$0	1.2111	0.6401

TABLE D
 WEST DONEGAL TOWNSHIP AUTHORITY
 MOUNT JOY TOWNSHIP AUTHORITY
 MJTA ALLOCATIONS IN WDTA FACILITIES
 BASINS H, I, J AND P - PROJECTED FLOW @ 1.4992 MGD PDF

	A Sewer Run (MH to MH) Pipe Capacity (mgd)	Current Allocations (mgd) Distribution Factors			D MJTA Request	D1 WDTA Remaining	E WDTA Sell to MJTA	F 1990 Cost	G MJTA Capital Contribution	H	I
		B West Donegal	C Mount Joy	New Allocations (mgd) West Donegal Mount Joy (Remaining (Request))							
12. MH64A - MH78		0.6595	0.3405								
64A-64	0.8953	0.5905	0.3048	0.3865	0.3355	0.0817	\$21,120	\$463	0.5088	0.3865	
64-64B	1.5443	1.0185	0.5258	0.3865	0.7635	0	\$24,000	\$0	1.0185	0.5258	
64B-64C	1.7222	1.1358	0.5864	0.3865	0.8808	0	\$9,900	\$0	1.1358	0.5864	
64C-78	1.5313	1.0099	0.5214	0.3865	0.7549	0	\$20,460	\$0	1.0099	0.5214	
B. Force Main							SUBTOTAL	\$4,681			
4" Nolt Road F.M.	0.3960	0.3337	0.0623	0.2364	0.2164	0.1741	\$106,000	New FM	0.1596	0.2364	
6" Colebrook St. F.M.	0.8885	0.5749	0.3136	0.3817	0.3348	0.0681	\$63,450	\$1,167	0.5068	0.3817	
8" Cameron St. F.M.	1.5797	1.1339	0.4458	0.3865	0.8531	0	\$207,075	\$0	1.1339	0.4458	
							SUBTOTAL	\$1,167			
Contract No. 3											
A. Collection Sewers											
1. MH204 - MH219		0.7193	0.2807								
204-205	1.4559	1.0472	0.4087	0.4949	0.7591	0.0862	\$28,000	\$398	0.9610	0.4949	
205-206A	1.4559	1.0472	0.4087	0.4949	0.7579	0.0862	\$7,700	\$109	0.9610	0.4949	
206A-206	1.4559	1.0472	0.4087	0.4949	0.7566	0.0862	\$7,700	\$109	0.9610	0.4949	
206-207	2.0331	1.4624	0.5707	0.4949	1.1711	0	\$18,550	\$0	1.4624	0.5707	
207-208	4.8561	3.4930	1.3631	0.4949	3.2005	0	\$16,450	\$0	3.4930	1.3631	
208-209	3.1563	2.2703	0.8860	0.4949	1.9766	0	\$14,000	\$0	2.2703	0.8860	
209-210	4.8342	3.4772	1.3570	0.4949	3.1829	0	\$20,370	\$0	3.4772	1.3570	
210-211	4.6040	3.3117	1.2923	0.4949	3.0142	0	\$26,810	\$0	3.3117	1.2923	
211-212	1.7979	1.2932	0.5047	0.4949	0.9951	0	\$17,150	\$0	1.2932	0.5047	
212-219A	3.4222	2.4616	0.9606	1.4992	2.1634	0.5386	\$8,050	\$304	1.9230	1.4992	
							SUBTOTAL	\$921			
Existing WDTA Collection System Capacity Reallocation:								1990 COST	\$6,769		
								1995 COST	\$7,738		

TABLE D
 WEST DONEGAL TOWNSHIP AUTHORITY
 MOUNT JOY TOWNSHIP AUTHORITY
 MJTA ALLOCATIONS IN WDTA FACILITIES
 BASINS H, I, J AND P - PROJECTED FLOW @ 1.4992 MGD PDF

	Current Allocations (mgd)							G MJTA Capital Contribution	H New Allocations West Donegal (Remaining)	I Mount Joy (Request)
	A Pipe Capacity (mgd)	B Distribution Factors West Donegal		C Mount Joy	D MJTA Request	D1 WDTA Remaining	E WDTA Sell to MJTA			
B. Interceptor Sewers										
1. MH219A - MH232			0.7315	0.2685						
219A-220A	1.4559	1.0650	0.3909	1.4992	0.7369	0.7369	\$27,790	New 15"	0.3281	1.1278
220A-221	2.9118	2.1300	0.7818	1.4992	1.8019	0.7174	\$13,860	\$820	1.4126	1.4992
221-222	2.3923	1.7500	0.6423	1.4992	1.4218	0.8569	\$26,110	\$2,245	0.8931	1.4992
222-223	2.3249	1.7007	0.6242	1.4992	1.3725	0.8750	\$20,580	\$1,859	0.8257	1.4992
223-224	2.1595	1.5797	0.5798	1.4992	1.2515	0.9194	\$19,880	\$2,031	0.6603	1.4992
224-225	1.9936	1.4583	0.5353	1.4992	1.1302	0.9639	\$12,670	\$1,470	0.4944	1.4992
225-226	2.6247	1.9200	0.7047	1.4992	1.5918	0.7945	\$27,860	\$2,024	1.1255	1.4992
226-227	1.4559	1.0650	0.3909	1.4992	0.7369	0.7369	\$27,090	New 15"	0.3281	1.1278
227-228	2.2789	1.6670	0.6119	1.4992	1.3389	0.8873	\$14,910	\$1,393	0.7797	1.4992
228-229	2.0845	1.5248	0.5597	1.4992	1.1967	0.9395	\$28,000	\$3,029	0.5853	1.4992
229-230	1.4559	1.0650	0.3909	1.4992	0.7369	0.7369	\$28,000	New 15"	0.3281	1.1278
230-231	1.7831	1.3043	0.4788	1.4992	0.9762	0.9762	\$28,000	New 15"	0.3281	1.4550
231-232	1.4559	1.0650	0.3909	1.4992	0.7369	0.7369	\$17,150	New 15"	0.3281	1.1278
2. MH232 - MH297			0.7821	0.2179						
232-233	2.6397	2.0645	0.5752	1.4992	1.6989	0.9240	\$32,000	\$2,688	1.1405	1.4992
233-234	2.6397	2.0645	0.5752	1.4992	1.6989	0.9240	\$29,200	\$2,453	1.1405	1.4992
264-276	3.0386	2.3765	0.6621	1.4992	2.0108	0.8371	\$24,080	\$1,592	1.5394	1.4992
276-277	3.2060	2.5074	0.6986	1.4992	2.1193	0.8006	\$31,920	\$1,913	1.7068	1.4992
277-278	4.0034	3.1311	0.8723	1.4992	2.7429	0.6269	\$32,160	\$1,209	2.5042	1.4992
278-279	3.1512	2.4646	0.6866	1.4992	2.0764	0.8126	\$31,840	\$1,971	1.6520	1.4992
279-280	2.7999	2.1898	0.6101	1.4992	1.8017	0.8891	\$28,880	\$2,201	1.3007	1.4992
280-295	3.9816	3.1140	0.8676	1.4992	2.7258	0.6316	\$26,720	\$1,017	2.4824	1.4992
295-296	2.5043	1.9586	0.5457	1.4992	1.5367	0.9535	\$37,120	\$3,392	1.0051	1.4992
296-297	2.5388	1.9856	0.5532	1.4992	1.5637	0.9460	\$32,000	\$2,862	1.0396	1.4992

TABLE D
 WEST DONEGAL TOWNSHIP AUTHORITY
 MOUNT JOY TOWNSHIP AUTHORITY
 MJTA ALLOCATIONS IN WDTA FACILITIES
 BASINS H, I, J AND P - PROJECTED FLOW @ 1.4992 MGD PDF

Sewer Run (MH to MH)	Pipe Capacity (mgd)	Current Allocations (mgd)			D MJTA Request	D1 WDTA Remaining	E WDTA Sell to MJTA	F 1990 Cost	G MJTA Capital Contribution	New Allocations (mgd)	
		A West Donegal	B Mount Joy	C Mount Joy						H West Donegal (Remaining)	I Mount Joy (Request)
3. MH297A - MH331		0.7951	0.2049								
297-309	8.0285	6.3835	1.6450	1.4992	5.9516	0	\$4,560	\$0	6.3835	1.6450	
309-310	2.7999	2.2262	0.5737	1.4992	1.7568	0.9255	\$32,000	\$2,539	1.3007	1.4992	
310-311	1.6165	1.2853	0.3312	1.4992	0.8159	0.8159	\$13,360	New 18"	0.4694	1.1471	
311-312	1.6165	1.2853	0.3312	1.4992	0.8159	0.8159	\$32,000	New 18"	0.4694	1.1471	
312-313	1.6165	1.2853	0.3312	1.4992	0.8159	0.8159	\$23,200	New 18"	0.4694	1.1471	
313-314	5.4420	4.3269	1.1151	1.4992	3.8575	0.3841	\$23,200	\$393	3.9428	1.4992	
314-315	2.9513	2.3466	0.6047	1.4992	1.8772	0.8945	\$32,000	\$2,328	1.4521	1.4992	
315-316	1.6165	1.2853	0.3312	1.4992	0.8159	0.8159	\$21,920	New 18"	0.4694	1.1471	
316-317	2.4693	1.9633	0.5060	1.4992	1.4939	0.9932	\$21,680	\$2,093	0.9701	1.4992	
317-318	3.3908	2.6960	0.6948	1.4992	2.2267	0.8044	\$31,360	\$1,785	1.8916	1.4992	
318-319	2.2086	1.7561	0.4525	1.4992	1.2867	1.0467	\$25,440	\$2,894	0.7094	1.4992	
319-320	3.8931	3.0954	0.7977	1.4992	2.6260	0.7015	\$32,000	\$1,384	2.3939	1.4992	
320-321	3.4670	2.7566	0.7104	1.4992	2.2873	0.7888	\$17,280	\$944	1.9678	1.4992	
321-322	3.8931	3.0954	0.7977	1.4992	2.6260	0.7015	\$32,000	\$1,384	2.3939	1.4992	
322-323	3.0954	2.4612	0.6342	1.4992	1.9918	0.8650	\$29,200	\$1,958	1.5962	1.4992	
323-324	3.4164	2.7164	0.7000	1.4992	2.2470	0.7992	\$24,000	\$1,347	1.9172	1.4992	
324-325	1.6165	1.2853	0.3312	1.4992	0.8159	0.8159	\$32,000	New 18"	0.4694	1.1471	
325-326	1.6165	1.2853	0.3312	1.4992	0.8159	0.8159	\$20,000	New 18"	0.4694	1.1471	
326-327	1.6165	1.2853	0.3312	1.4992	0.8159	0.8159	\$19,680	New 18"	0.4694	1.1471	
327-328	4.1107	3.2684	0.8423	1.4992	2.7991	0.6569	\$26,000	\$997	2.6115	1.4992	
328-329	4.3174	3.4328	0.8846	1.4992	2.9634	0.6146	\$30,000	\$1,025	2.8182	1.4992	
329-330	3.8706	3.0775	0.7931	1.4992	2.6082	0.7061	\$28,000	\$1,226	2.3714	1.4992	
330-331	4.4171	3.5120	0.9051	1.4992	3.0096	0.5941	\$17,520	\$566	2.9179	1.4992	
C. Force Main		0.8018	0.1982								
10" Miller Rd. F.M.2.4682		1.9790	0.4892	1.4992	1.4080	1.0100	\$285,025	\$27,992	0.9690	1.4992	
Total MJTA Capital Contribution 1990 Dollars:								\$93,791			
Total MJTA Capital Contribution 1995 Dollars:								\$107,229			

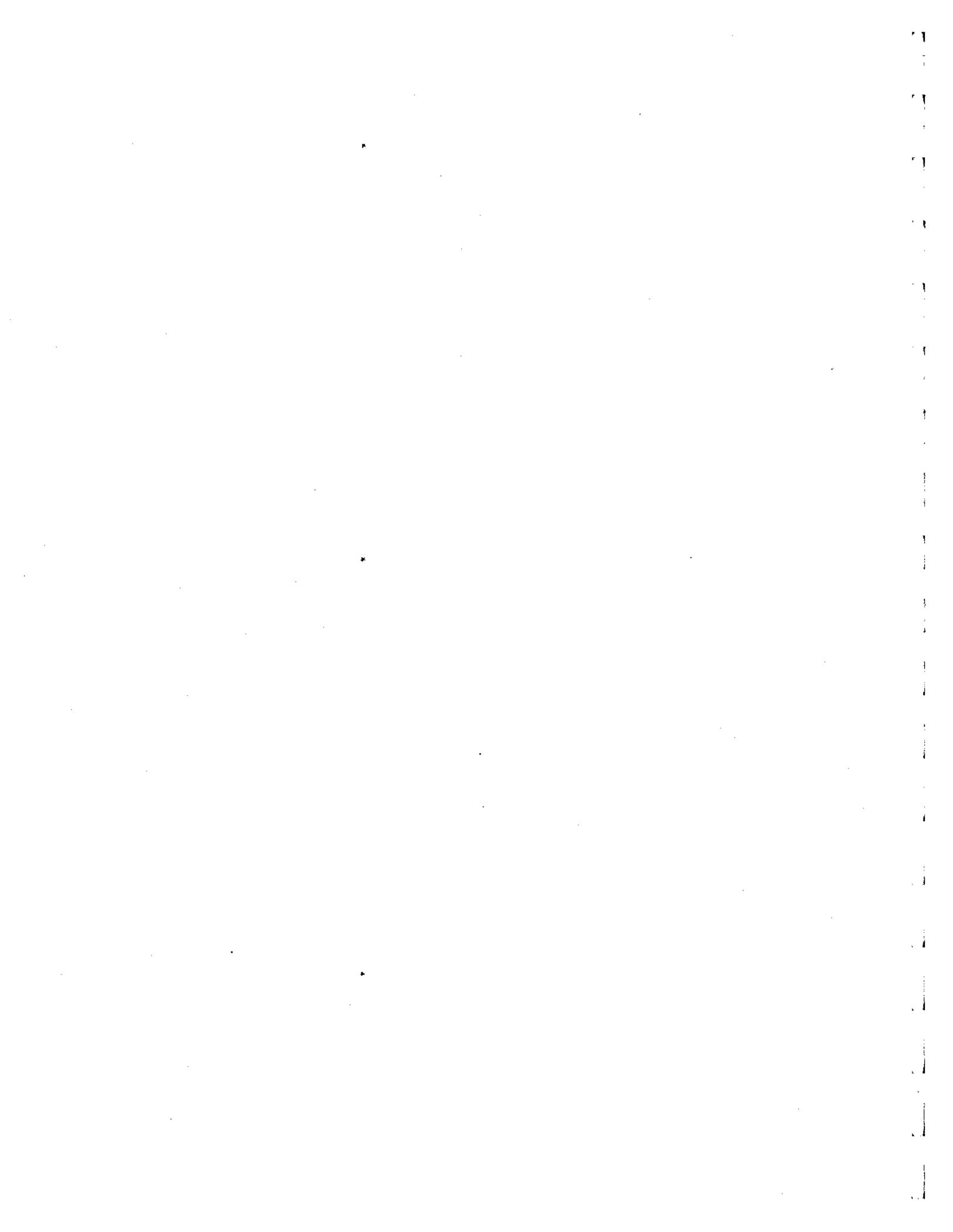


TABLE D1
WEST DONEGAL TOWNSHIP AUTHORITY
MOUNT JOY TOWNSHIP AUTHORITY
MJTA ALLOCATIONS IN WDTA FACILITIES
BASINS H, I, AND Jg - PROJECTED FLOW @ 0.6804 MGD PDF

Contract No. 2	Sewer Run (MH to MH)	Current Allocations (mgd)			D MJTA Request	D1 WDTA Remaining	E WDTA Sell to MJTA	F 1990 Cost	G MJTA Capital Contribution	H New Allocations West Donegal (Remaining)	I Mount Joy (Request)
		A Pipe Capacity (mgd)	B West Donegal	C Mount Joy							
A. Collection Sewers											
1.	MH12 - MH1		0.5139	0.4861							
	12-13	0.6295	0.3235	0.3060	0.0156	0.3197	0	\$11,700	\$0	0.3235	0.3060
	13-14	0.6197	0.3185	0.3012	0.0156	0.3122	0	\$18,200	\$0	0.3185	0.3012
	14-15	0.4938	0.2538	0.2400	0.0156	0.2444	0	\$20,000	\$0	0.2538	0.2400
	15-16	0.5060	0.2600	0.2460	0.0156	0.2482	0	\$18,750	\$0	0.2600	0.2460
	16-17	0.4749	0.2441	0.2308	0.0156	0.2297	0	\$14,750	\$0	0.2441	0.2308
	17-5	0.4938	0.2538	0.2400	0.0156	0.2344	0	\$12,500	\$0	0.2538	0.2400
	5-4	0.6295	0.3235	0.3060	0.0156	0.3122	0	\$18,750	\$0	0.3235	0.3060
	4-3	0.4938	0.2538	0.2400	0.0156	0.2463	0	\$20,000	\$0	0.2538	0.2400
	3-2	1.1069	0.5688	0.5381	0.0156	0.5639	0	\$20,000	\$0	0.5688	0.5381
	2-1	0.7808	0.4013	0.3795	0.0156	0.3994	0	\$20,000	\$0	0.4013	0.3795
2.	MH5 - MH21		0.6102	0.3898							
	5-18	0.5465	0.3335	0.2130	0.1364	0.3023	0	\$19,750	\$0	0.3335	0.2130
	18-19	0.4938	0.3013	0.1925	0.1364	0.2551	0	\$11,100	\$0	0.3013	0.1925
	19-21	0.4938	0.3013	0.1925	0.1364	0.2532	0	\$11,100	\$0	0.3013	0.1925
3.	MH21 - MH31		0.7221	0.2779							
	21-29	0.4938	0.3566	0.1372	0.1364	0.3010	0	\$20,200	\$0	0.3566	0.1372
	29-30	0.4938	0.3566	0.1372	0.1364	0.2972	0	\$15,600	\$0	0.3566	0.1372
	30-31	0.5296	0.3824	0.1472	0.1364	0.3186	0	\$20,000	\$0	0.3824	0.1472
4.	MH31 - MH32		0.8426	0.1574							
	31-32	0.5521	0.4652	0.0869	0.1364	0.4161	0.0495	\$850	\$18	0.4157	0.1364
5.	MH54 - MH47		0.8918	0.1082							
	54-55	0.4938	0.4404	0.0534	0.1364	0.3066	0.0830	\$19,850	\$801	0.3574	0.1364
	55-56	0.4938	0.4404	0.0534	0.1364	0.2998	0.0830	\$20,000	\$807	0.3574	0.1364
	56-57	0.4938	0.4404	0.0534	0.1364	0.2935	0.0830	\$20,000	\$807	0.3574	0.1364
	57-58	0.5238	0.4671	0.0567	0.1364	0.3158	0.0797	\$18,250	\$666	0.3874	0.1364
	58-47	0.8659	0.7722	0.0937	0.1364	0.6166	0.0427	\$15,600	\$185	0.7295	0.1364

TABLE D1
 WEST DONEGAL TOWNSHIP AUTHORITY
 MOUNT JOY TOWNSHIP AUTHORITY
 MJTA ALLOCATIONS IN WDTA FACILITIES
 BASINS H, I, AND Jg - PROJECTED FLOW @ 0.6804 MGD PDF

	Sewer Run (MH to MH)	A Pipe Capacity (mgd)	Current Allocations (mgd) Distribution Factors			D MJTA Request	D1 WDTA Remaining	E WDTA Sell to MJTA	F 1990 Cost	G MJTA Capital Contribution	H New Allocations West Donegal (Remaining)	I Mount Joy (Request)
			B West Donegal	C Mount Joy								
6.	MH47 - MH46A 47-46A	0.4813	0.9071 0.4366	0.0929 0.0447	0.1364	0.2472	0.0917	\$17,900	\$818	0.3449	0.1364	
7.	MH6 - MH11		0.4500	0.5500								
	6-7	1.0591	0.4766	0.5825	0.0098	0.4747	0	\$19,850	\$0	0.4766	0.5825	
	7-8	1.6600	0.7470	0.9130	0.0098	0.7432	0	\$19,650	\$0	0.7470	0.9130	
	8-9	1.1581	0.5211	0.6370	0.0098	0.5161	0	\$19,700	\$0	0.5211	0.6370	
	9-10	0.7729	0.3478	0.4251	0.0098	0.3428	0	\$19,700	\$0	0.3478	0.4251	
	10-11	0.6762	0.3043	0.3719	0.0098	0.3018	0	\$8,650	\$0	0.3043	0.3719	
8.	MH10 - MH46A		0.4234	0.5766								
	10-46	0.9499	0.4022	0.5477	0.2453	0.3528	0	\$12,650	\$0	0.4022	0.5477	
	46-46A	1.1554	0.4892	0.6662	0.2453	0.2273	0	\$6,350	\$0	0.4892	0.6662	
9.	MH66 - MH69		0.5435	0.4565								
	66-67	0.8373	0.4551	0.3822	0.0048	0.4544	0	\$12,700	\$0	0.4551	0.3822	
	67-68	0.7808	0.4244	0.3564	0.0048	0.4237	0	\$11,000	\$0	0.4244	0.3564	
	68-69	1.0791	0.5865	0.4926	0.0048	0.5865	0	\$15,500	\$0	0.5865	0.4926	
10.	MH68 - MH64A		0.6216	0.3784								
	68-65	0.4938	0.3069	0.1869	0.0048	0.3063	0	\$10,550	\$0	0.3069	0.1869	
	65-64A	1.1581	0.7199	0.4382	0.0048	0.7192	0	\$5,250	\$0	0.7199	0.4382	
11.	MH61 - MH64A		0.6542	0.3458								
	61-60	1.2260	0.8020	0.4240	0.3817	0.5583	0	\$10,380	\$0	0.8020	0.4240	
	60-62	1.6509	1.0800	0.5709	0.3817	0.8319	0	\$9,240	\$0	1.0800	0.5709	
	62-63	0.8953	0.5857	0.3096	0.3817	0.3364	0.0721	\$6,000	\$116	0.5136	0.3817	
	63-63A	1.8458	1.2075	0.6383	0.3817	0.9563	0	\$11,700	\$0	1.2075	0.6383	
	63A-64A	1.8512	1.2111	0.6401	0.3817	0.9598	0	\$2,100	\$0	1.2111	0.6401	

**TABLE D1
WEST DONEGAL TOWNSHIP AUTHORITY
MOUNT JOY TOWNSHIP AUTHORITY
MJTA ALLOCATIONS IN WDTA FACILITIES
BASINS H, I, AND Jg - PROJECTED FLOW @ 0.6804 MGD PDF**

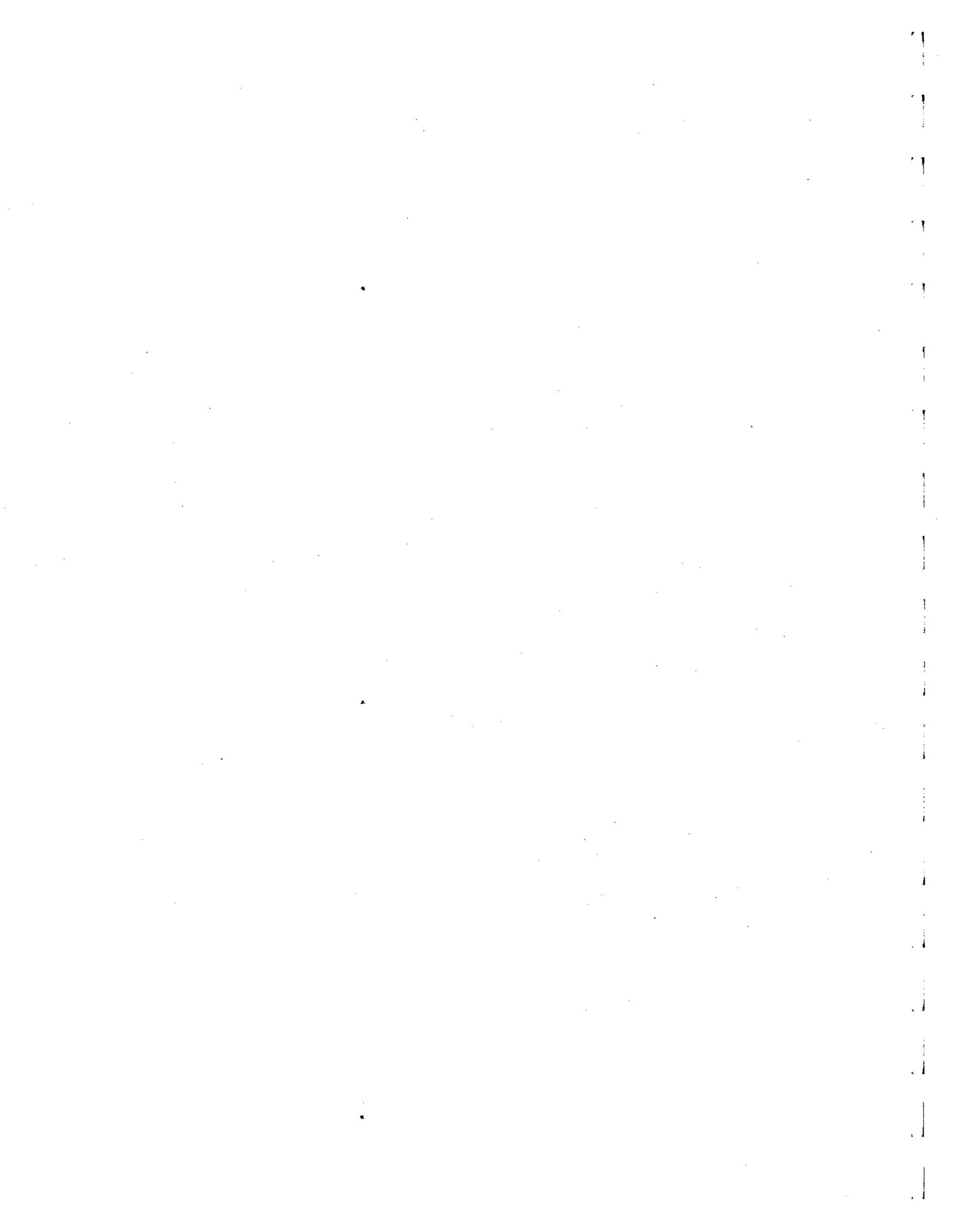
		Current Allocations (mgd)							New Allocations (mgd)		
		Distribution Factors			D	D1	E	F	G	H	I
Sewer Run (MH to MH)	A Pipe Capacity (mgd)	B West Donegal	C Mount Joy	D MJTA Request	D1 WDTA Remaining	E WDTA Sell to MJTA	F 1990 Cost	G MJTA Capital Contribution	H West Donegal (Remaining)	I Mount Joy (Request)	
12. MH64A - MH78		0.6595	0.3405								
64A-64	0.8953	0.5905	0.3048	0.3865	0.3355	0.0817	\$21,120	\$463	0.5088	0.3865	
64-64B	1.5443	1.0185	0.5258	0.3865	0.7635	0	\$24,000	\$0	1.0185	0.5258	
64B-64C	1.7222	1.1358	0.5864	0.3865	0.8808	0	\$9,900	\$0	1.1358	0.5864	
64C-78	1.5313	1.0099	0.5214	0.3865	0.7549	0	\$20,460	\$0	1.0099	0.5214	
B. Force Main								SUBTOTAL	\$4,681		
4" Nolt Road F.M.	0.3960	0.8426	0.1574	0.2364	0.2164	0.1741	\$106,000	New FM	0.1596	0.2364	
6" Colebrook St. F.M.	0.8885	0.3337	0.0623	0.3817	0.3348	0.0681	\$63,450	\$1,167	0.5068	0.3817	
8" Cameron St. F.M.	1.5797	0.6470	0.3530	0.3865	0.8531	0	\$207,075	\$0	1.1339	0.4458	
		0.7178	0.2822				SUBTOTAL	\$1,167			
Contract No. 3											
A. Collection Sewers											
1. MH204 - MH219		0.7193	0.2807								
204-205	1.4559	1.0472	0.4087	0.4949	0.7591	0.0862	\$28,000	\$398	0.9610	0.4949	
205-206A	1.4559	1.0472	0.4087	0.4949	0.7579	0.0862	\$7,700	\$109	0.9610	0.4949	
206A-206	1.4559	1.0472	0.4087	0.4949	0.7566	0.0862	\$7,700	\$109	0.9610	0.4949	
206-207	2.0331	1.4624	0.5707	0.4949	1.1711	0	\$18,550	\$0	1.4624	0.5707	
207-208	4.8561	3.4930	1.3631	0.4949	3.2005	0	\$16,450	\$0	3.4930	1.3631	
208-209	3.1563	2.2703	0.8860	0.4949	1.9766	0	\$14,000	\$0	2.2703	0.8860	
209-210	4.8342	3.4772	1.3570	0.4949	3.1829	0	\$20,370	\$0	3.4772	1.3570	
210-211	4.6040	3.3117	1.2923	0.4949	3.0142	0	\$26,810	\$0	3.3117	1.2923	
211-212	1.7979	1.2932	0.5047	0.4949	0.9951	0	\$17,150	\$0	1.2932	0.5047	
212-219A	3.4222	2.4616	0.9606	0.6804	2.1634	0	\$8,050	\$0	2.4616	0.9606	
							SUBTOTAL	\$617			
Existing WDTA Collection System Capacity Reallocation:								1990 COST	\$6,465		
								1995 COST	\$7,391		

TABLE D1
 WEST DONEGAL TOWNSHIP AUTHORITY
 MOUNT JOY TOWNSHIP AUTHORITY
 MJTA ALLOCATIONS IN WDTA FACILITIES
 BASINS H, I, AND Jg - PROJECTED FLOW @ 0.6804 MGD PDF

	Current Allocations (mgd)							G MJTA Capital Contribution	H I New Allocations (mgd)	
	A Pipe Capacity (mgd)	Distribution Factors		D MJTA Request	D1 WDTA Remaining	E WDTA Sell to MJTA	F 1990 Cost		West Donegal (Remaining)	Mount Joy (Request)
Sewer Run (MH to MH)		B West Donegal	C Mount Joy							
B. Interceptor Sewers										
1. MH219A - MH232			0.7315	0.2685						
219A-220A	1.4559	1.0650	0.3909	0.6804	0.7369	0.2895	\$27,790	\$1,326	0.7755	0.6804
220A-221	2.9118	2.1300	0.7818	0.6804	1.8019	0	\$13,860	\$0	2.1300	0.7818
221-222	2.3923	1.7500	0.6423	0.6804	1.4218	0.0381	\$26,110	\$100	1.7119	0.6804
222-223	2.3249	1.7007	0.6242	0.6804	1.3825	0.0562	\$20,580	\$119	1.6445	0.6804
223-224	2.1595	1.5797	0.5798	0.6804	1.2515	0.1006	\$19,880	\$222	1.4791	0.6804
224-225	1.9936	1.4583	0.5353	0.6804	1.1302	0.1451	\$12,670	\$221	1.3132	0.6804
225-226	2.6247	1.9200	0.7047	0.6804	1.5918	0	\$27,860	\$0	1.9200	0.7047
226-227	1.4559	1.0650	0.3909	0.6804	0.7369	0.2895	\$27,090	\$1,293	0.7755	0.6804
227-228	2.2789	1.6670	0.6119	0.6804	1.3389	0.0685	\$14,910	\$108	1.5985	0.6804
228-229	2.0845	1.5248	0.5597	0.6804	1.1967	0.1207	\$28,000	\$389	1.4041	0.6804
229-230	1.4559	1.0650	0.3909	0.6804	0.7369	0.2895	\$28,000	\$1,336	0.7755	0.6804
230-231	1.7831	1.3043	0.4788	0.6804	0.9762	0.2016	\$28,000	\$760	1.1027	0.6804
231-232	1.4559	1.0650	0.3909	0.6804	0.7369	0.2895	\$17,150	\$818	0.7755	0.6804
2. MH232 - MH297			0.7821	0.2179						
232-233	2.6397	2.0645	0.5752	0.6804	1.6989	0.1052	\$32,000	\$306	1.9593	0.6804
233-234	2.6397	2.0645	0.5752	0.6804	1.6989	0.1052	\$29,200	\$279	1.9593	0.6804
264-276	3.0386	2.3765	0.6621	0.6804	2.0108	0.0183	\$24,080	\$35	2.3582	0.6804
276-277	3.2060	2.5074	0.6986	0.6804	2.1193	0	\$31,920	\$0	2.5074	0.6986
277-278	4.0034	3.1311	0.8723	0.6804	2.7429	0	\$32,160	\$0	3.1311	0.8723
278-279	3.1512	2.4646	0.6866	0.6804	2.0764	0	\$31,840	\$0	2.4646	0.6866
279-280	2.7999	2.1898	0.6101	0.6804	1.8017	0.0703	\$28,880	\$174	2.1195	0.6804
280-295	3.9816	3.1140	0.8676	0.6804	2.7258	0	\$26,720	\$0	3.1140	0.8676
295-296	2.5043	1.9586	0.5457	0.6804	1.5367	0.1347	\$37,120	\$479	1.8239	0.6804
296-297	2.5388	1.9856	0.5532	0.6804	1.5637	0.1272	\$32,000	\$385	1.8584	0.6804

**TABLE D1
WEST DONEGAL TOWNSHIP AUTHORITY
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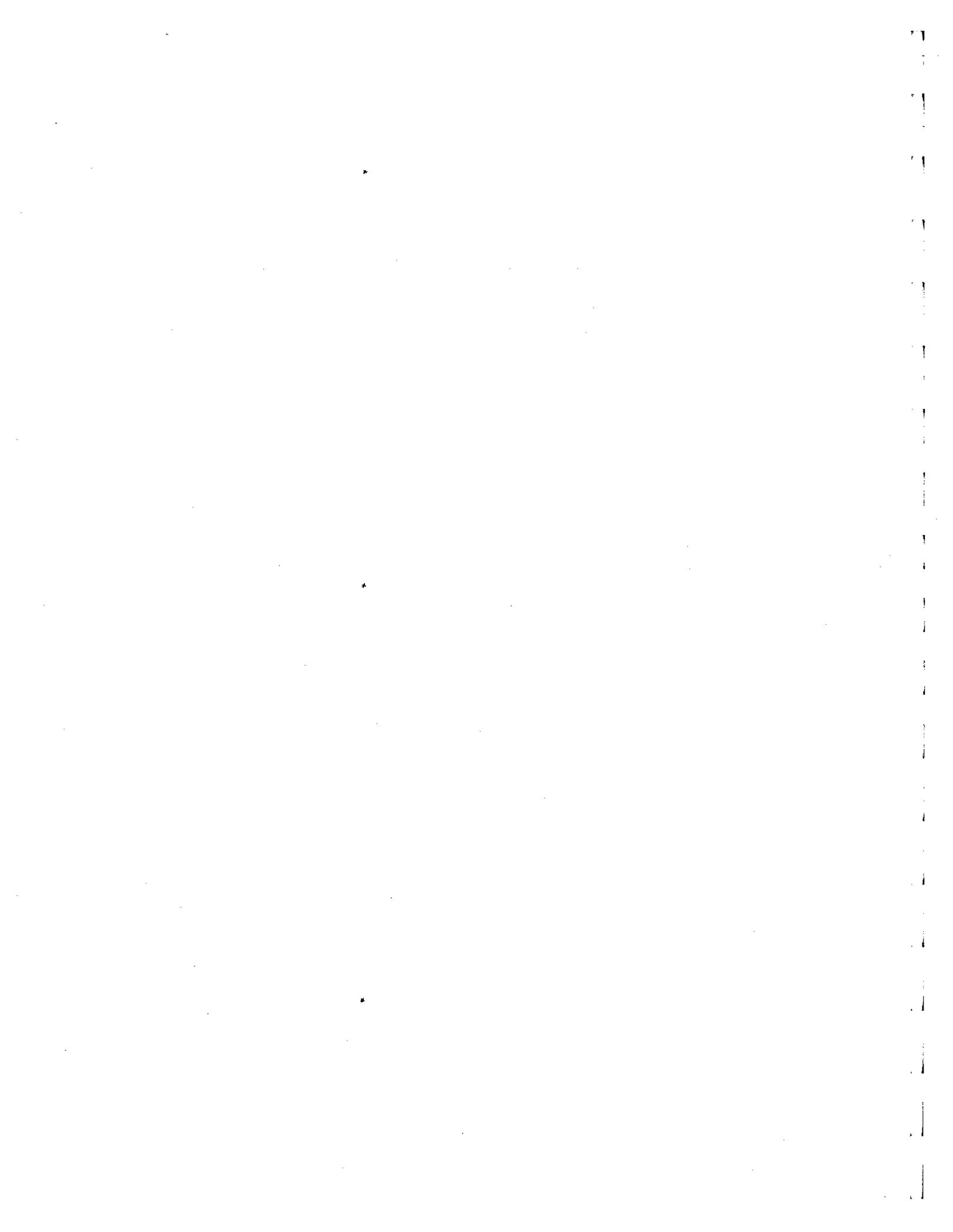
		Current Allocations (mgd)							New Allocations (mgd)	
		Distribution Factors							H I	
	A	B	C	D	D1	E	F	G	H	I
Sewer Run (MH to MH)	Pipe Capacity (mgd)	West Donegal	Mount Joy	MJTA Request	WDTA Remaining	WDTA Sell to MJTA	1990 Cost	MJTA Capital Contribution	West Donegal (Remaining)	Mount Joy (Request)
3. AH297A - MH331		0.7951	0.2049							
297-309	8.0285	6.3835	1.6450	0.6804	5.9516	0	\$4,560	\$0	6.3835	1.6450
309-310	2.7999	2.2262	0.5737	0.6804	1.7568	0.1067	\$32,000	\$293	2.1195	0.6804
310-311	1.6165	1.2853	0.3312	0.6804	0.8159	0.3492	\$13,360	\$693	0.9361	0.6804
311-312	1.6165	1.2853	0.3312	0.6804	0.8159	0.3492	\$32,000	\$1,659	0.9361	0.6804
312-313	1.6165	1.2853	0.3312	0.6804	0.8159	0.3492	\$23,200	\$1,203	0.9361	0.6804
313-314	5.4420	4.3269	1.1151	0.6804	3.8575	0	\$23,200	\$0	4.3269	1.1151
314-315	2.9513	2.3466	0.6047	0.6804	1.8772	0.0757	\$32,000	\$197	2.2709	0.6804
315-316	1.6165	1.2853	0.3312	0.6804	0.8159	0.3492	\$21,920	\$1,136	0.9361	0.6804
316-317	2.4693	1.9633	0.5060	0.6804	1.4939	0.1744	\$21,680	\$367	1.7889	0.6804
317-318	3.3908	2.6960	0.6948	0.6804	2.2267	0	\$31,360	\$0	2.6960	0.6948
318-319	2.2086	1.7561	0.4525	0.6804	1.2867	0.2279	\$25,440	\$630	1.5282	0.6804
319-320	3.8931	3.0954	0.7977	0.6804	2.6260	0	\$32,000	\$0	3.0954	0.7977
320-321	3.4670	2.7566	0.7104	0.6804	2.2873	0	\$17,280	\$0	2.7566	0.7104
321-322	3.8931	3.0954	0.7977	0.6804	2.6260	0	\$32,000	\$0	3.0954	0.7977
322-323	3.0954	2.4612	0.6342	0.6804	1.9918	0.0462	\$29,200	\$105	2.4150	0.6804
323-324	3.4164	2.7164	0.7000	0.6804	2.2470	0	\$24,000	\$0	2.7164	0.7000
324-325	1.6165	1.2853	0.3312	0.6804	0.8159	0.3492	\$32,000	\$1,659	0.9361	0.6804
325-326	1.6165	1.2853	0.3312	0.6804	0.8159	0.3492	\$20,000	\$1,037	0.9361	0.6804
326-327	1.6165	1.2853	0.3312	0.6804	0.8159	0.3492	\$19,680	\$1,020	0.9361	0.6804
327-328	4.1107	3.2684	0.8423	0.6804	2.7991	0	\$26,000	\$0	3.2684	0.8423
328-329	4.3174	3.4328	0.8846	0.6804	2.9634	0	\$30,000	\$0	3.4328	0.8846
329-330	3.8706	3.0775	0.7931	0.6804	2.6082	0	\$28,000	\$0	3.0775	0.7931
330-331	4.4171	3.5120	0.9051	0.6804	3.0096	0	\$17,520	\$0	3.5120	0.9051
C. Force Main		0.6018	0.1982							
10" Miller Rd. F.M.2.4682	1.9790	0.4892	0.4892	0.6804	1.4080	0.1912	\$285,025	\$5,299	1.7878	0.6804
Total MJTA Capital Contribution 1990 Dollars:								\$30,114		
Total MJTA Capital Contribution 1995 Dollars:								\$34,429		



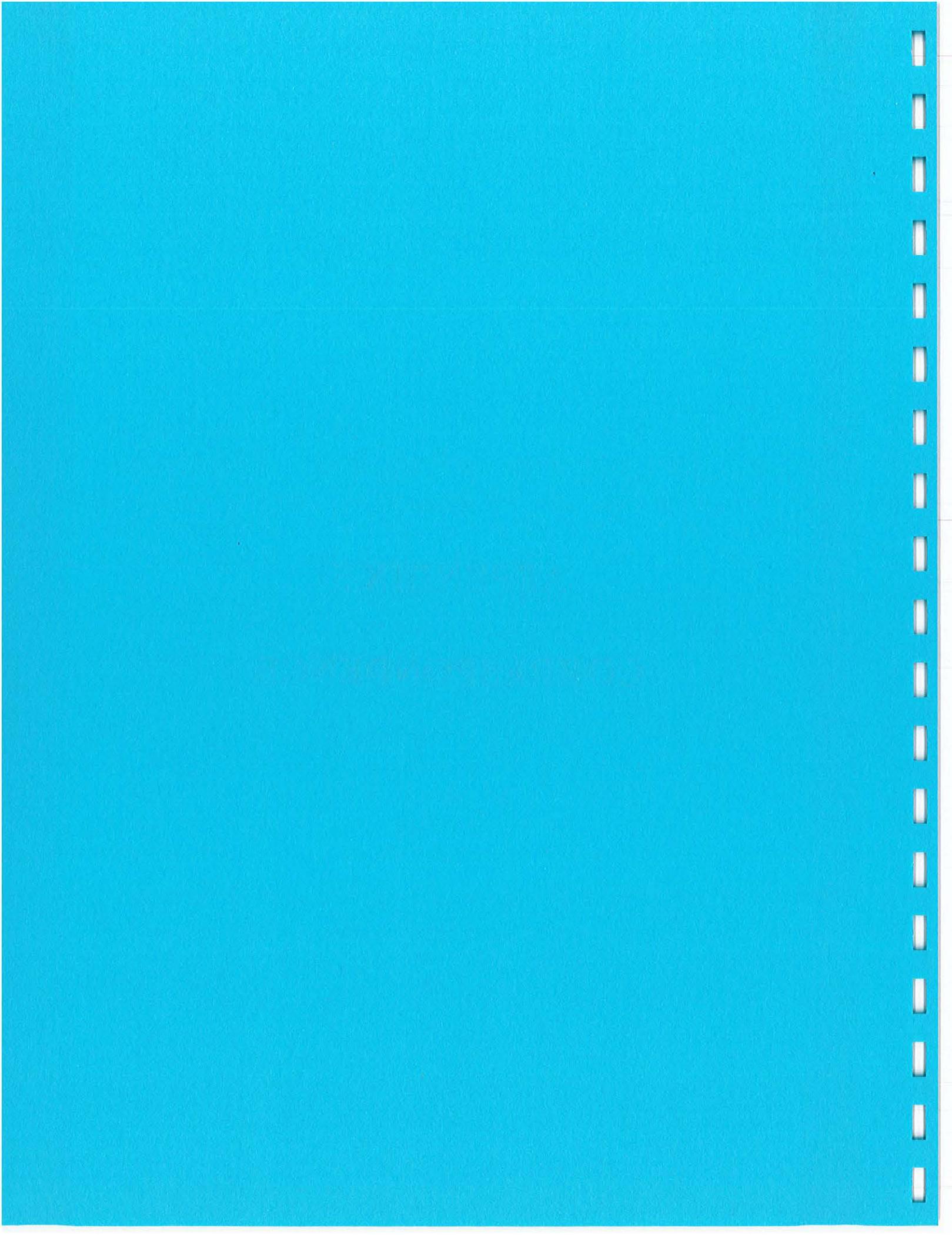
**TABLE D2
WEST DONEGAL PUMP STATION EXPANSION CAPACITY
REQUIREMENTS**

<u>Pump Station</u>	<u>Capacity</u>	<u>Exist. Allocation</u>		<u>New Allocation</u>		<u>Total</u>
		<u>WDTA</u>	<u>MJTA</u>	<u>WDTA</u>	<u>MJTA</u>	
Nolt Rd.	0.1440 100 gpm	0.1134	0.0306	0.1175	0.2364	0.3539 250 gpm
Colebrook Rd.	0.5760 400 gpm	0.3237	0.2523	0.2413	0.3817	0.6230 440 gpm
Cameron St.	0.7416 515 gpm	0.4794	0.2622	0.2819	0.3865	0.6684 464 gpm
Miller Rd.	1.0224 710 gpm	0.7504	0.2720	1.2868	1.4992	2.7860 1950 gpm

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APPENDIX 5
CORRESPONDENCE



HANOVER ENGINEERING

ASSOCIATES, INC.

20 C Snyder Lane
Ephrata, PA 17522-9101
(717) 721-7444
FAX (717) 721-7447

February 10, 1999

Mount Joy Township
Board of Supervisors
159 Mertz Drive
Elizabethtown, PA 17022

RE: Mount Joy Township 537 Plan
Response to Comments on
Proposed 537 Plan
Project No: LLA-1003

Dear Supervisors:

In accordance with requirements of the Department of Environmental Protection (DEP), copies of the proposed Township 537 Wastewater Facilities Plan have been submitted to the Lancaster County Planning Commission (LCPC), Boroughs of Mount Joy and Elizabethtown, and West Donegal Township for comment for a period of 60 days. The Township has also advertised a notice in the newspaper giving the public the opportunity to comment on the proposed plan for a period of 30 days.

The advertised public comment period ended February 8th. To date, we have only received comments from LCPC in their review dated January 26, 1999. A copy of this review is attached.

In consideration of these comments, we offer the following responses for consideration prior to acting on a resolution for adoption of the 537 Plan.

LCPC has recommended nonadoption of the 537 Plan and has cited nine reasons for requesting that the Township delay action on the plan until these items are addressed.

Comment No.1 – LCPC noted that Chapter 2 did not clearly identify specific planning objectives of the plan.

Response – Chapter 1 of the plan, as well as DEP regulation, establish the required planning objectives for the 537 Plan. The plan of study was also previously approved by DEP on July 11, 1990 and modifications approved on May 20, 1993. The base planning objective of the 537 Plan is summarized on the first page of the Summary of Recommendations. The plan is intended to address wastewater management of existing and new discharges of wastewater in the Township in order to prevent ground water contamination caused by inadequately treated

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Mount Joy Township Board of Supervisors
February 10, 1999
Project No. LLA - 1003

sewage. The plan also must demonstrate that the Township complies with the Pennsylvania Sewage Facilities Act 537 and regulations of the DEP

Comment No. 2 – The 5- and 10-year sewer service areas do not coincide with lands inside the adopted 20-year Urban Growth Boundaries (UGB).

Response – The 537 Plan recognizes the need to address public sewer facilities within the UGB to support development in this area. The proposed sewer service area also reflects those areas of the Township that already are currently served by public sewer. These areas existed before the UGB was established and must be recognized as a part of any existing sewer service area.

The 5- and 10-year sewer service areas also include areas zoned for development outside of the UGB as a result of developer requests for sewer capacity on the Authority reservation list.

Comment No. 3 – The 537 Plan assumption on the use of 60% of zoned land area available for development does not reflect the Lancaster County Growth Management Plan and Elizabethtown Regional Strategic Comprehensive Plan land use efficiency of 84%.

Response – The 537 Plan growth projections utilized two components in developing wastewater needs. The first growth factor was based on planned and proposed development of 100% of specific tracts of land zoned for growth and identified by developers in requesting capacity on the Authority's reservation list.

The second factor evaluated land zoned for development where no plans currently exist for development. The projections assume 40% of this area will be developed within the long-term planning period. The 60% land use reflects a typical net land availability for residential lots after allowing for required site improvements (i.e. streets, easements, stormwater basins, open space) and site suitability (i.e. slopes, wetlands) The net area for lots is adjusted for density as allowed for in the zoning ordinance.

The combination of the two factors provide for a more reasonable projection of growth based on the current zoning ordinance requirements and may result in a similar land use efficiency.

Comment No. 4 – Chapter 2 of the 537 Plan does not address a review of the Lancaster County Water Supply Plan and Wellhead Protection Program.

This plan was prepared in 1997. The plan included three phases: (1) Developing an inventory of water resources; (2) the development of strategies to meet future demands for water and protection of water supplies; and (3) long-term educational efforts to attain goals for protection of water resources.

Response – LCPC recommended that the plan evaluate the impacts of extending development and public wastewater facilities in their recommended wellhead protection zones. The plan referenced three wells. One of these is a well located at the end of

Beechwood Lane in Elizabethtown Borough. The other two wells are located in the Northbrooke development as a part of the Mount Joy Township Authority water system. Assessment of any future adverse impacts on these wells is not possible since all three of these wells are already located within, and are surrounded by, existing residential development served by public sewer.

Comment No. 5 – The 537 Plan projection did not include development of 1,106 acres of land in the Rural District, 116 acres in the R-1 District along Snyder Road, and two R-2 strip districts along Ridge and Mount Pleasant Roads. Lands located outside of the UGB and zoned for development needed to be rezoned to agricultural or conservation zoning.

Response – The 537 Plan did not include the entire rural district. The majority of this land is owned by the Pennsylvania State Correctional Institute and is not available for residential development. The R-1 District along Snyder Road is included as part of the service area for Mount Joy Borough. The R-2 strip zoning located in the agricultural area is not proposed to be served. The majority of these lots are already occupied and suitable for on-lot disposal systems (OLDS). The size of the lots precludes the use of the remaining lots for uses other than single family homes.

The 537 Plan must also show consistency with current zoning requirements. Where there is an inconsistency with the zoning and comprehensive plans, the 537 Plan addresses the greater potential need for public sewer services to avoid any potential shortcomings. DEP is more likely to criticize underplanning for wastewater needs than possible overplanning.

Comment No. 6 – The 537 Plan mapping did not include all prime agricultural lands to evaluate consistency with the Pennsylvania Prime Agricultural Land Policy.

Response – The 537 Plan properly identifies prime agricultural soils and areas where agricultural easements restrict development in the vicinity of the proposed sewer service area. Agriculturally zoned land is also identified. Lands identified by LCPC as enrolled in the clean and green program, unique farmland, and capability classes 3 and 4 would be potentially developable if located in an area zoned for development and a part of the sewer service area. The Township has zoned a significant majority of land in the Township as agricultural to protect not only prime agricultural land but also the majority of agricultural farms in the Township. The proposed sewer facilities to be constructed by the Authority do not include extensions into agricultural zoned areas. The proposed facilities provide an expansion of facility capacity for the existing sewer conveyance and treatment facilities.

The Mount Joy Township 537 Plan conforms to the Pennsylvania prime agricultural land policy by not proposing changes to agricultural zoning or proposing sewer service in agriculturally zoned areas.

Comment No. 7 - The use of denitrification units in areas of elevated nitrate groundwater was not evaluated.

Response – This concern has developed at LCPC in the last three months due two recent proposed 537 Plan revisions in Penn Township and Elizabeth Township. In 1997, DEP revised their regulations to allow the use of small packaged denitrification systems as an accepted alternative system. LCPC is concerned that the use of these units will allow denser development outside of the UGB's. Until recently, lot sizes in areas of the Township with high nitrate required larger lots or plume easements to allow dilution of the nitrates from an on-lot system. As a result, development in these areas was limited in the number of available home sites.

While further research of the use of these units may be warranted, we are not presently aware of any concerns in Mount Joy Township at this time. DEP will also require a system design review and submittal of a 537 Plan revision as a part of any proposal to use denitrification units. The cost and maintenance associated with the use of these units will continue to discourage their use on a large scale.

Due to the urgency of addressing the current moratorium on the public sewer system, we would recommend that this issue be considered at a later time if the need is identified.

Comment No. 8 – The 537 Plan does not include an on-lot disposal system OLDS selection criteria for types of treatment and disposal as most appropriate in different parts of the Township.

Response – Historically, the use of different OLDS has been determined by the cost to the landowner and site conditions. The most preferable OLDS systems utilizing conventional subsurface treatment are the least costly. Significant installation cost and operating requirements typically limit the use of other types of OLDS utilizing spray irrigation or a stream discharge. This already establishes an order of preference for the landowner without further Township regulation.

As we are not aware of an existing problem with the use of these systems, we are hesitant to recommend delaying adoption of this plan and establishing further Township regulation on the selection and use of OLDS methods beyond current DEP regulation. When this becomes an issue, the Township can adopt appropriate ordinances and revise the 537 Plan accordingly.

Comment No. 9 – The 537 Plan should include non-structural alternatives to keep farming operations from further elevating groundwater nitrate levels.

Response – The 537 Plan does note that there are high nitrate levels in the groundwater. However, no conclusions are made as to the specific source for these nitrate levels. DEP does not use groundwater nitrate sampling alone to determine malfunctioning OLDS in areas with predominately agricultural activity in a limestone region such as Mount Joy Township. The purpose of the 537 Plan is to address wastewater needs within the Township. An attempt to broaden the scope of 537 planning to address agricultural activities is not recommended. Farming operations controls would be best addressed as a separate issue if the Township would chose to do so.

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Mount Joy Township Board of Supervisors
February 10, 1999
Project No. LLA - 1003

We do not make any specific recommendations for the Township on this issue as a part of the 537 Plan.

Based on our review of the LCPC comments, we recommend adoption of the proposed 537 Plan and submittal to DEP for review and approval. The Township Planning Commission has also reviewed the 537 Plan and recommended approval. Due to the need to comply with the DEP moratorium and time schedule for plant improvements, further delay of the 537 Plan to address these issues to the satisfaction of LCPC at this time is not advisable. We also do not believe that these issues are critical to obtaining DEP approval of the plan in conformance with their regulations.

A copy of the LCPC review and this response will be included with the 537 Plan submittal to DEP for their consideration.

Sincerely,

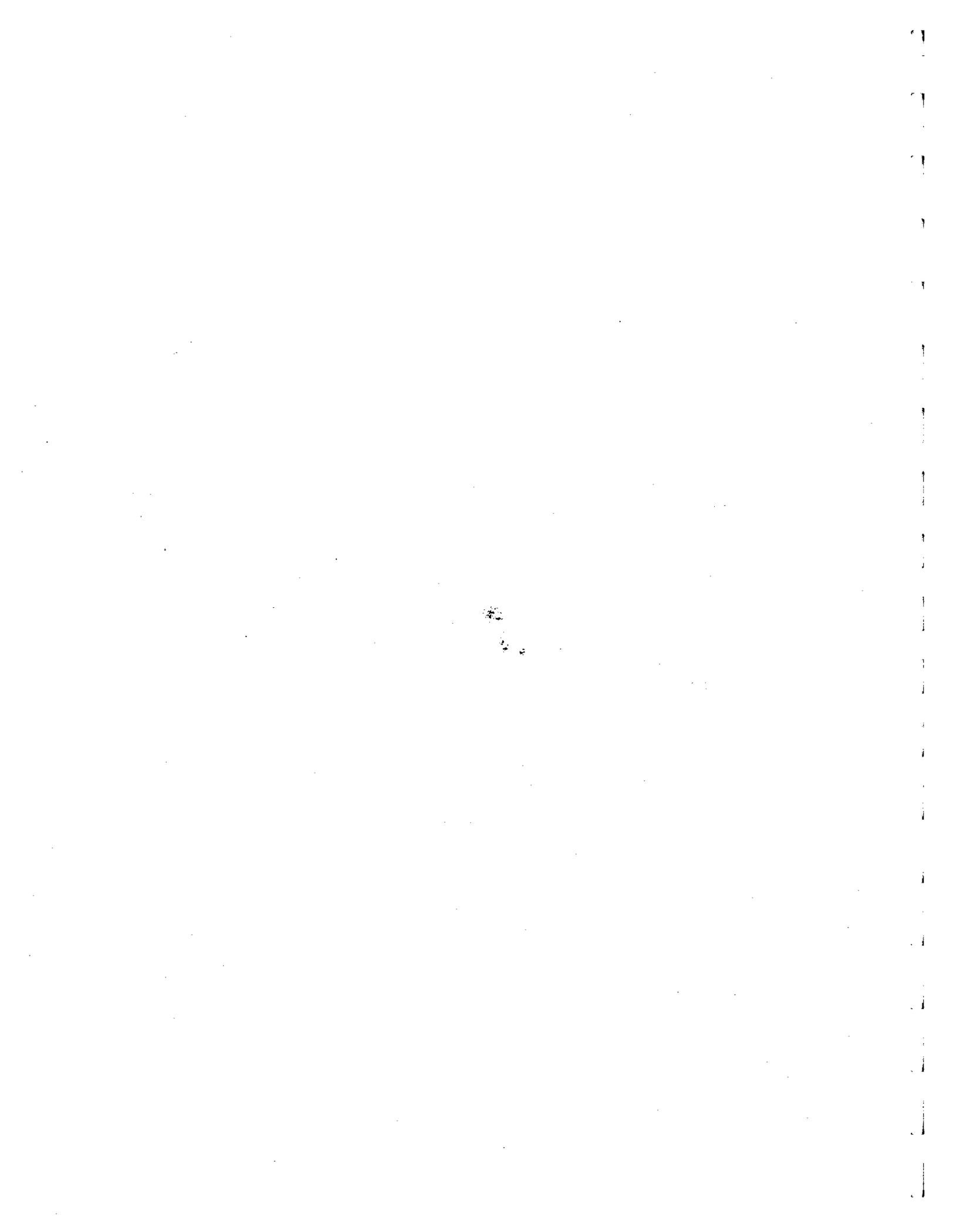


Michael S. Moulds, PE
Chief Engineer

Enclosures

copy: Bruce Hamer, MJTA

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LANCASTER COUNTY

LANCASTER COUNTY PLANNING COMMISSION

COUNTY COMMISSIONERS
PAUL THIBAUT, Chairman
TERRY L. KAUFFMAN, Vice-Chairman
RON FORD

50 NORTH DUKE STREET
PO BOX 83480
LANCASTER, PA 17608-3480
TELEPHONE: 717-299-8333
FAX: 717-296-3659

RONALD T. BAILEY
Planning Director

26 January 1999
99LU

Mr. Richard E. Forry, Secretary
Mount Joy Township Supervisors
159 Merts Drive
Elizabethtown, PA 17022

Re: Community Planning File #: 46-70

Dear Mr. Forry:

The Lancaster County Planning Commission have examined the proposed wastewater management plan in accordance with standard planning practice, the PADEP's (Pennsylvania's Department of Environmental Protection) 1998 Guide for Preparing Act 537 Update Revisions, and the Lancaster County and local municipal comprehensive plans. Mark Hiester, AICP, Planning Analyst, and Mike Skelly, Community Planner, are the reviewers.

GENERAL INFORMATION

Requested Action: A request to review the proposed Mount Joy Township Wastewater Management Plan was received 3 December 1998 and was reviewed by the Lancaster County Planning Commission at a regularly scheduled meeting on 25 January 1999. The effect of the proposal would be to create a document that will evaluate, recommend, plan, and regulate the township's wastewater facilities to the year 2020.

The proposed Mount Joy Township Act 537 Wastewater Management Plan, the first complete official plan in the township, took over nine years to complete. This plan would update two county sewer and water resource studies (1970 and 1987), a 1982 comprehensive water quality management plan by the PADEP, and the 1973 Mount Joy Township Sewage Collection Facilities Feasibility Study.

EXISTING WASTEWATER FACILITIES

There are no treatment facilities operated by the Mount Joy Township Authority, so wastewater treatment is provided primarily (96%) by the Elizabethtown Borough plant and second (4%) by the Mount Joy Borough plant. The Elizabethtown plant also treats flows from the borough and West Donegal Township. Of course, the municipalities have been sharing wastewater facilities through intermunicipal agreements for some time.



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Infiltration and inflow of drainage and groundwater are not considered to be excessive in the conveyance system in Mount Joy Township. Flows to the Elizabethtown Borough treatment plant since 1994, however, have included excessive amounts of water (hydraulic overloading), a result of above average rainfall amounts and significant levels of infiltration and inflow. The PADEP imposed a moratorium on additional wastewater connections in August 1998, until the three municipalities develop an implementation plan to control infiltration and inflow. A significant amount of capacity can be obtained from mitigating infiltration and inflow. The cost effectiveness of replacing non-paying infiltration and inflow with paying capacity can also be substantial.

Thus, the borough and two townships have prepared the Elizabethtown Area Regional Sewer Study. Coordination between the municipalities is important to Mount Joy Township because the township relies on transmission facilities owned by the borough and the West Donegal Township Authority to convey flows to the Elizabethtown treatment plant. The study found, among other items, that the Elizabethtown treatment plant needs to be expanded or replaced and several interceptor mains in each of the three municipalities need to be replaced with larger pipes.

The selection by the municipalities of many of the improvements in the study was dependent on the location, amount, and timing of growth approved and projected in each municipality. Wastewater from the region drains towards the borough plant which is located in West Donegal Township. If, for example, West Donegal Township was expected to have less demand for public wastewater in certain areas, then, assuming demand was reasonably modest, it would be possible for Mount Joy Township to purchase some of West Donegal's capacity instead of creating another expensive conveyance facility and purchasing additional capacity from the borough. Demand for public wastewater services in the two townships, however, has essentially outstripped the capacity of portions of the system. Therefore, major improvements to the conveyance and treatment facilities are currently needed in all three municipalities even if growth stopped now and infiltration and inflow were immediately halted. As a result, a new wastewater management plan is needed in Mount Joy Township.

In sum, the Elizabethtown Area Regional Sewer Study estimates about \$20 Million worth of improvements to the regional system. The 40-year design life of wastewater facilities and the large costs of the regional upgrade prompted officials to design the system for 40 years of growth. The proposed Act 537 Plan uses a goal from the study of providing almost 4,814 EDUs (Equivalent Dwelling Units), 1.3 million gallons per day from Mount Joy Township to the Elizabethtown treatment plant. The study found that the Elizabethtown plant would need to provide about 16,667 EDUs (4.5 mgd) of treatment capacity for the next 40 years from Elizabethtown Borough, the Masonic Homes, Mount Joy Township, and West Donegal Township.

PLANNING OBJECTIVES

The planning objectives chapter of the proposed Mount Joy Township Act 537 Wastewater Management Plan briefly reviews the general purposes of previous wastewater planning documents

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for the Mount Joy Township area. The previous wastewater planning documents, however, are dated and have not comprehensively evaluated the needs of the township, thereby magnifying the need for the proposed Act 537 Plan.

The planning objectives chapter also discusses relevant land use regulation and planning documents (Lancaster County Comprehensive Plan, 1997 Elizabethtown Region Strategic Comprehensive Plan, 1998 township zoning ordinance, and township subdivision and land development ordinance). Few planning objectives are listed at all, however, and it is not clear which of the objectives are to lead the proposed Act 537 Plan.

For example, the plan references the 1995 Lancaster County Policy Plan which states that growth is to be directed to areas within UGBs (Urban Growth Boundaries) where a full range of public facilities and services are available to support residential and economic development. The planning objectives and needs chapter of the proposed plan, however, discusses extending public wastewater facilities outside of the UGBs to develop an industrial tax base, partially on prime agricultural lands. The proposed extension of public facilities outside of the adopted UGBs for economic development on prime agricultural lands is not consistent with the county policy plan.

According to the county plan, the delineation of the wastewater service areas should match the UGBs. The location of development in the UGBs is to be staged with the timed expansion of public wastewater facilities. One primary intent of coordinating the location, timing, and intensity of development in the UGBs is to promote efficient patterns of land use and public facilities. Another major purpose is to maximize the amount of prime agricultural lands that are to be preserved for agricultural use.

In addition, the planning objectives chapter of the proposed 537 plan states that the areas zoned for growth will be evaluated to determine sewage facility needs and implementation tasks. There are large areas zoned for growth. These areas, however, are not proposed to be sewered.

PHYSICAL DESCRIPTION OF PLANNING AREA

This chapter discusses topography, surface waters, floodplains, wetlands, wildlife preservation, prime agricultural soils, soil suitability, geology, previous demographic information, and subdivision activity. The Prime Agricultural Soils portion of Chapter 2 (Page 11) and the Prime Agricultural Soils Map (#4), however, do not respectively discuss and show (a) Preserved Farmland (b) Farmland in Agricultural Security Areas (c) Farmland enrolled in the Clean & Green Preferential Tax Assessment Programs (d) Farmland Planned for Agricultural Use (e) Farmland Subject to Effective Agricultural Zoning and (f) Land Capability Classes III and IV Farmland and Unique Farmland. Chapter 2 and Map #4 only identify prime agricultural soils; but they should include all of the above prime agricultural lands to determine consistency with Pennsylvania's Prime Agricultural Land Policy.

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This chapter should also include a review of the 1996 Lancaster County Water Supply Plan and Wellhead Protection Program. Portions of at least three wellhead protection areas are identified in Mount Joy Township. The plan should evaluate the impacts of extending public wastewater facilities and associated development in the delineated Wellhead Protection Zones.

Both of these concerns are significant because the commission finds that Mount Joy Township is zoning and planning to sewer more agricultural land and resource land (e.g., wellhead protection zones) for urban-level development than it needs to accommodate projected growth. The commission believes that the excessive amount of land available for growth in the township is a primary reason why the township has committed more sewer capacity than available.

PLANNING NEEDS

Public wastewater treatment and conveyance is expected to continue and expand in Mount Joy Township mostly to the Elizabethtown Borough and West Donegal Township systems with a smaller proportion of Mount Joy Township being served by the Mount Joy Borough system. Mount Joy Township intends to contribute to the costs of expanding or replacing the Elizabethtown treatment plant and upgrading the major wastewater interceptors the township uses in all three municipalities. Expansion of the township's "local" wastewater collection facilities are expected to be constructed and financed by private developers.

The remainder of the township is to be served by on-lot disposal systems. Four non-structural programs will, in on-lot areas, supplement the structural systems:

1. On lot disposal system education will be promoted to system users.
2. Groundwater quality (preliminary hydrogeologic) evaluations in hazardous soils and limestone geology will be required for development.
3. Dispersion plume easements should be provided, where appropriate, to mitigate further contamination of the elevated levels of nitrate-nitrogen in the groundwater.
4. Non-building Planning Module Waivers will be permitted for qualifying development.

The evaluation and regulation of denitrification units was not included in the proposed Act 537 Plan.

WASTEWATER TREATMENT NEEDS

As the plan indicates, approved and potential development are the most immediate needs for wastewater facilities in the township. All of Mount Joy Township's capacity acquired from the Elizabethtown and the West Donegal Township systems (1,496 EDUs) has been committed to

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development. This commitment equals 528 reserved EDUs and 780 EDUs granted out of 1,792 EDUs requested from approved land development plans. The difference represents 1,012 EDUs (273,240 gpd) more demand committed than currently available to the township.

Additionally, development and public wastewater facilities in the township are planned for the following areas

1. North of Elizabethtown Borough along Hershey Road (SR 743) and Mount Gretna Road.
2. Between Elizabeth Road and Ridge Road near Elizabethtown Borough.
3. From Rheems north along Cloverleaf Road and Harrisburg Pike (SR 230).
4. North of Mount Joy Borough and south of Terrace Road.

Page 23 of the plan states "aside from individual lots and strip development within agriculturally zoned areas, there is no area zoned for residential development that relies on on-lot wastewater management." This statement appears incorrect because there are 480 acres of residentially-zoned land (174 acres in the R-1 District and 306 acres in the R-2 District) located outside of the proposed sewer service areas. These zoning districts permit residential uses with on-lot disposal systems.

POTENTIAL OLDS MALFUNCTIONS ANALYSIS

The plan states that there are no known malfunctioning OLDS (On-Lot Disposal Systems) in the township. As required, the proposed Act 537 Plan includes an analysis of *potential* OLDS malfunctions based on five criteria: old age of dwelling, repair permits, floodplain, steep slopes, and density. Two areas of concentrated potential OLDS malfunctions were found through the analysis, Fairview and Terrace Roads near Mount Joy Borough and the Milton Grove Area. The Fairview and Terrace Roads area is planned to be sewerred in five years by the borough.

The 153 housing units in the Milton Grove area are separated from existing wastewater service areas by a large block of farmland and agricultural zoning. Three structural wastewater treatment alternatives were evaluated, but none were considered economically feasible for the low density of units involved. The following non-structural alternatives, therefore, are recommended.

1. Start a homeowner education program for the maintenance of OLDS.
2. Create a Septage Management District to fund maintenance and replacement of failing OLDS.
3. Restrict the use of garbage grinders with OLDS.
4. Require mandatory septic tank pumping.
5. Township authority to acquire land if needed on a case-by-case basis.

Seventy percent of wells tested did not meet minimum quality standards for either nitrate-nitrogen or three types of bacteria. The plan indicates that the high nitrate levels in the groundwater correspond to the long-term farming in the majority of the township. The nonstructural alternatives

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chosen, however, address only OLDS use, not the impacts of farming. Alternatives should be added, therefore, to keep the existing contributors to high groundwater nitrate levels, farming practices, from exacerbating the pollution and further limiting the proper use of OLDS.

ELIZABETHTOWN/CONEWAGO ALTERNATIVES

The township has approved land development plans for 1,012 EDUs (273,240 gpd) more demand than is available to Mount Joy Township from the Elizabethtown treatment plant. Based on the zoning, the proposed Act 537 Plan projects an additional 3,792 EDUs (1,023,840 gpd) of demand over the next 20 years. Seven structural alternatives, three for the Elizabethtown plant and four of a new Conewago treatment facility, were evaluated. One certainty, affecting the evaluation of all alternatives, is that Mount Joy Township is committed to participate in paying the upgrading costs of the Elizabethtown plant.

The evaluations found that the economies of scale from the larger Elizabethtown alternatives have lower treatment costs, but the conveyance charges and pumping costs could be higher than the Conewago alternatives. A present worth analysis suggested, overall, the Elizabethtown alternatives are the more cost-effective than the Conewago alternatives. The alternative chosen, costing the township about \$11.4 million, includes contributions to Elizabethtown Borough to upgrade the treatment plant and conveyance system for an additional 3,307 EDUs (893,000 gpd) of capacity, which would cover the demand from some of the land zoned for development.

COUNTY COMPREHENSIVE PLAN

The 1997 County Growth Management Plan estimates that Mount Joy Township should provide 541 acres of land for both residential and nonresidential development to meet the needs of the 5,143 additional residents expected by the year 2010. If it is assumed that 2.8 people will occupy the average household, as occurred in the 1990 Census, then 1,837 additional households will have been constructed in the township between 1990 and 2010.

The 2010 population anticipated in the proposed Act 537 Plan (10,940) is 3.8 % lower than the county's projection (11,370), yet 367% (1,989.5 acres) more land is planned to be sewered and zoned for development (R-1, R-2, C-1, C-2, Rural, Conservation Residential Light Industrial Districts) than recommended by the county.

The proposed township wastewater management plan does not mention nor evaluate the findings of the 1996 Lancaster County Water Supply Plan and Wellhead Protection Program.

Pennsylvania Act 537 required municipalities to show how the 537 Plan can be used as a tool to resolve existing sewage disposal problems and prevent new problems from occurring. It appears that, due to the excessive amount of land zoned for development at this time, the predictable wastewater management problems resulting from rapid-paced or haphazard low-efficiency development are not being prevented.

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The State Sewage Facilities Act indicates that the main purpose of a municipal wastewater management plan is to protect the health, safety, and welfare of citizens. The commission questions how the economic welfare of the public is protected where development is not compact enough for the fiscally responsible provision of all public services, including wastewater facilities.

Wastewater management plans are to evaluate wastewater facility and management alternatives, resolve existing sewage problems, and provide adequate future facilities to serve anticipated growth in the municipality. The proposed Mount Joy Township Act 537 Plan does not recognize the potential growth in the Rural Zoning District, where cluster developments and retirement communities are permitted with public wastewater facilities.

For all of the above reasons, the proposed Act 537 Plan would not be consistent with the county comprehensive plan.

RECOMMENDATION: Nonadoption

The Lancaster County Planning Commission recommends against the proposed township wastewater management plan, due to the following deficiencies.

1. Chapter 2 did not clearly identify the specific planning objectives of the proposed plan.
2. The five-year and ten-year sewer service areas do not coincide with lands inside the adopted 20-year Urban Growth Boundaries. The township has more than enough land area in the UGBs (1,753 acres) to meet the needs of projected residential growth and economic development in the next 20 years. Mount Joy Township has 367% (1,989.5 acres) more land planned to be sewerred and zoned for development than recommended by the county. The timing and location of installing public facilities should be coordinated with staged development inside of the planned UGBs.

The Planning Objectives and Needs Chapter should evaluate the impacts of having different areas zoned for residential and nonresidential development but not to be sewerred and areas to be sewerred in the next ten years that are not planned for development within the next ten years. The proposed wastewater management plan would be inconsistent with the growth management strategies that were the basis of the adopted UGBs. It appears that the proposed Act 537 plan would provide more public wastewater facilities than needed.

3. On Page 30, the assumption to use 60% of the zoned land area as available for development does not reflect the land use efficiency projected in the Lancaster County Growth Management Plan (Page 2-10) and the Elizabethtown Regional Strategic Comprehensive Plan, which equates to about 84% of the residential land area being covered by dwelling lots.

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The 60% development assumption could underestimate how much development may occur in the future, possibly result in another wastewater capacity or conveyance shortage, and a subsequent expensive remedy.

4. Chapter 2 (Physical Description of Planning Area) does not include a review of the County Water Supply Plan and Wellhead Protection Program, which may be accessed from the County government Internet Homepage (<http://www.co.lancaster.pa.us/Water/cover.html>). Portions of at least three wellhead protection areas are identified in Mount Joy Township. The plan should evaluate the potential adverse impacts to the water supply of extending development and public wastewater facilities in the Wellhead Protection Zones 1, 2, and 3.
5. The Projected Development Wastewater Needs calculation did not include the development of the 1,106 acres in the Rural District, a 116-acre R-1 District along Snyder Road, and 132 acre and 117 acre respective strip R-2 Districts along each Ridge Road and Mount Pleasant Road that are located outside of the proposed sewer service areas. On these 1,355 acres, residential uses are permitted that rely on public wastewater facilities. For example, cluster developments and retirement communities are permitted in the Rural District, if they can obtain public wastewater facilities.

The lands located outside of the adopted Urban Growth Boundaries and zoned for development (Rural, Conservation Residential, R-1, R-2, C-1, C-2, LI, and GI) need to be reclassified to effective agricultural or conservation zoning districts and uses that do not need public wastewater facilities. If this is accomplished, the proposed calculations would not need to be revised.

6. The Prime Agricultural Soils portion of Chapter 2 (Page 11) and the Prime Agricultural Soils Map (#4) did not include the following prime agricultural lands (a) Preserved Farmland (b) Farmland in Agricultural Security Areas (c) Farmland enrolled in the Clean & Green Preferential Tax Assessment Programs (d) Farmland Planned for Agricultural Use (e) Farmland Subject to Effective Agricultural Zoning and (f) Land Capability Classes III and IV, Farmland and Unique Farmland. Chapter 2 and Map #4 only identify prime agricultural soils (Class I and II), but they should include all of the above prime agricultural lands to evaluate the consistency of the plan's implementation with Pennsylvania's Prime Agricultural Land Policy.

The proposed Act 537 Plan recommends that some public wastewater facilities be extended to prime agricultural lands, but without a full evaluation of the impacts.

7. The use of denitrification units in areas with elevated levels of nitrate-nitrogen in the groundwater was not evaluated. Such units have the potential of greatly increasing the intensity of development in rural and agricultural areas. The commission recommends prohibiting the use of a denitrification unit:
 - A. In an immediate sewer service area.

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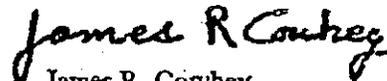
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- B. With a pipe discharge to a watercourse unless this is the only option for (a) the replacement of a malfunctioning system or (b) a reasonable use to be provided to an existing lot. Such a system should be owned and operated by the township or authority.
 - C. With an underground drainfield to where they would be the most feasible or the only option available for the existing lot or development.
8. The township Act 537 Plan did not include an OLDS selection criteria for determining which types of treatment and disposal systems are most appropriate in different areas of the township. Development that would be dependent on OLDS should be limited to areas where the soils are suitable for subsurface disposal of treated effluent. All feasible treatment and disposal options should be allowed for the replacement of a malfunctioning system, however, they should be prioritized. Stream discharge facilities should be only considered after all other options have been exhausted. The disposal of treated wastewater through land application should be given preference in the township's Act 537 Plan over the direct discharge into streams and waterways.
9. The proposed Act 537 Plan did not include non-structural alternatives to keep farming operations from further elevating groundwater nitrate levels. Yet, the plan indicates that high nitrate levels in the groundwater correspond to long-term agriculture in the majority of the township.

Should you have any questions regarding this areawide review, please contact, Mike Skelly, Community Planner.

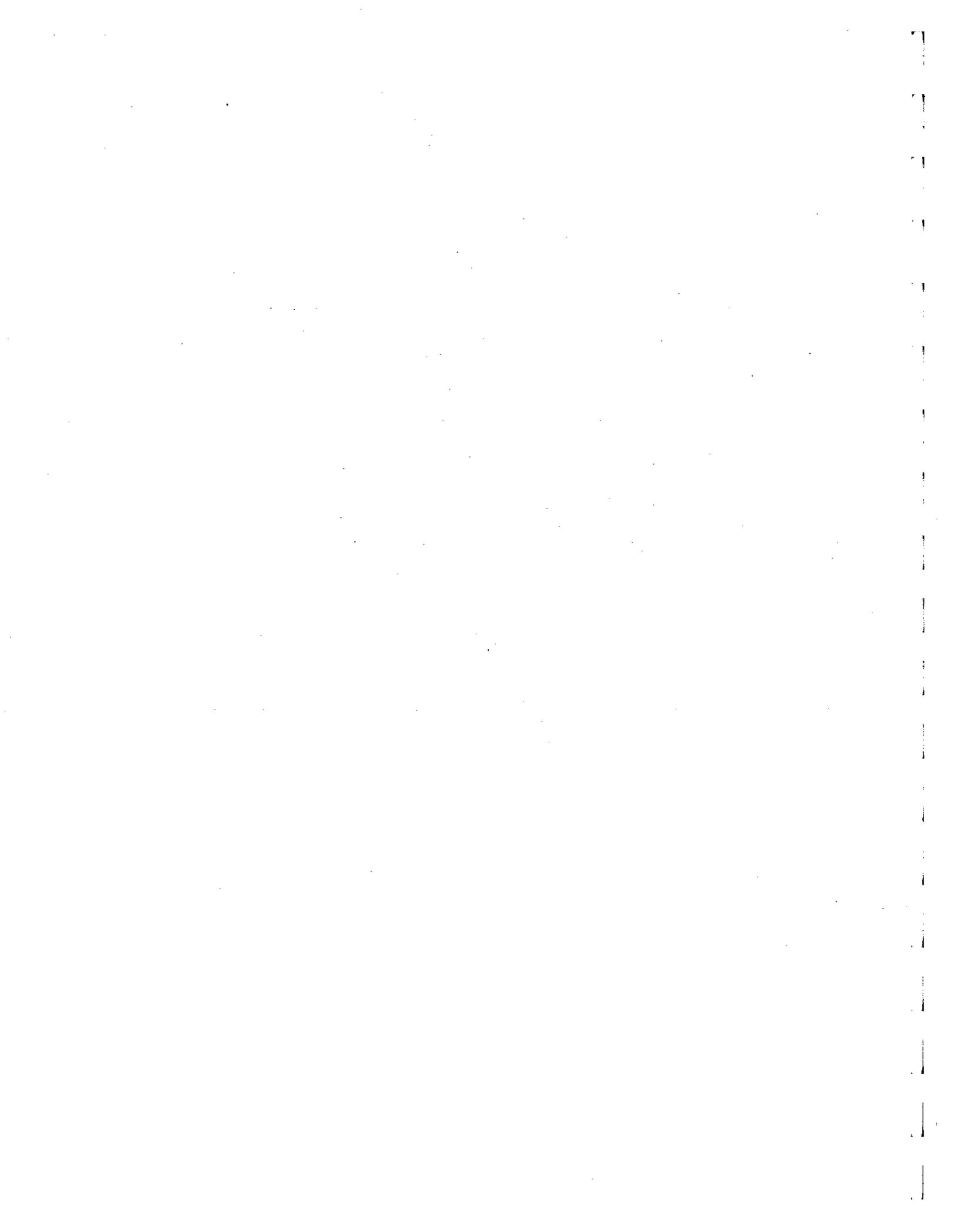
Sincerely,



James R. Cowhey
Chief Land Planner

¹⁶⁴
IRC/MH/MS/cag

copy: Morgan, Hallgren, Crosswell, & Kne, Solicitor
Barbara A. Stoner, East Donegal Township Municipal Secretary
Nick Viscome, Elizabethtown Borough Municipal Secretary
Ray D'Agostino, Mount Joy Borough Municipal Secretary
Darlene Farnestock, Rapho Township Municipal Secretary
Paul Klinger, West Donegal Township Municipal Secretary



PROOF OF PUBLICATION OF NOTICE IN

RECEIVED

State of Pennsylvania)
)ss:
County of Lancaster }

COPY JAN 12 1999
MOUNT JOY TOWNSHIP

Amy B. Witmer of the County and State aforesaid, being duly sworn, deposes and says that the Intelligencer Journal-Lancaster New Era a daily newspaper of general circulation published at Lancaster, County and State aforesaid, was established 1794-1877 since which date said daily newspaper has been regularly issued in said county, and that a copy of the printed notice or publication is attached hereto exactly the same as was printed and published in the regular editions and issues of said daily newspaper on the following dates, viz:

and the 6TH day of JAN A.D. 1999

Affiant
Lancaster
Intelligencer
of general
and also
of the a
foregoing
true.

PUBLIC NOTICE
NOTICE IS HEREBY GIVEN that the Board of Supervisors of Mount Joy Township, Lancaster County, Pennsylvania, proposes to adopt and then submit to the Pennsylvania Department of Environmental Protection the Township's Official Plan submission under Act 537 the Pennsylvania Sewage Facilities Act. This plan is intended to address wastewater management of existing and new discharges of wastewater in the Township in order to prevent groundwater contamination. The selected alternative identified as Elizabethtown Alternative 2 in the plan proposes capital improvements in the existing Mount Joy Township Authority sewer system to provide conveyance capacity for a total of 5,501 equivalent dwelling units to meet long term wastewater needs for the Township in existing sewer service areas zoned for development and future growth areas of the Township. With the exception of an existing service area of the Township served by Mount Joy Borough, wastewater treatment will be provided at the Elizabethtown treatment facility by way of a plant expansion to a capacity of 4.5 million gallons per day to address the regional needs of Mount Joy Township, West Donegal Township and Elizabethtown Borough. The Mount Joy Township Authority will also make capital contributions to West Donegal Township Authority and Elizabethtown for conveyance system improvements to increase capacity to convey flow to the existing treatment site. Estimated project costs for these improvements are \$11,423,000. Funding for the project is anticipated to be provided by available Authority funds and annual user fees in addition to income from developer agreements and a public bond issue. Estimated user fees used for planning purposes were \$400 to \$475 per year. Written comments on the proposed plan shall be submitted to the Mount Joy Township Board of Supervisors, 159 Mertz Drive, Elizabethtown, PA 17022, during the public comment period which will begin on January 8th 1999 and end on February 8th 1999. A copy of the proposed Act 537 Wastewater Management Plan is available for public inspection at the Mount Joy Township Municipal Building, 159 Mertz Drive, Elizabethtown Monday through Friday from 9:00 am to 4:00 pm.

that she is the Billing Clerk duly authorized by c., a corporation, publisher of said Lancaster New Era a newspaper to verify the foregoing statement under oath, Affiant is not interested in the subject matter or advertisement and that all allegations in the time, place and character of publication are

Amy B. Witmer

(SIGNATURE)

COPY OF NOTICE OR PUBLICATION

Sworn and subscribed to before me this

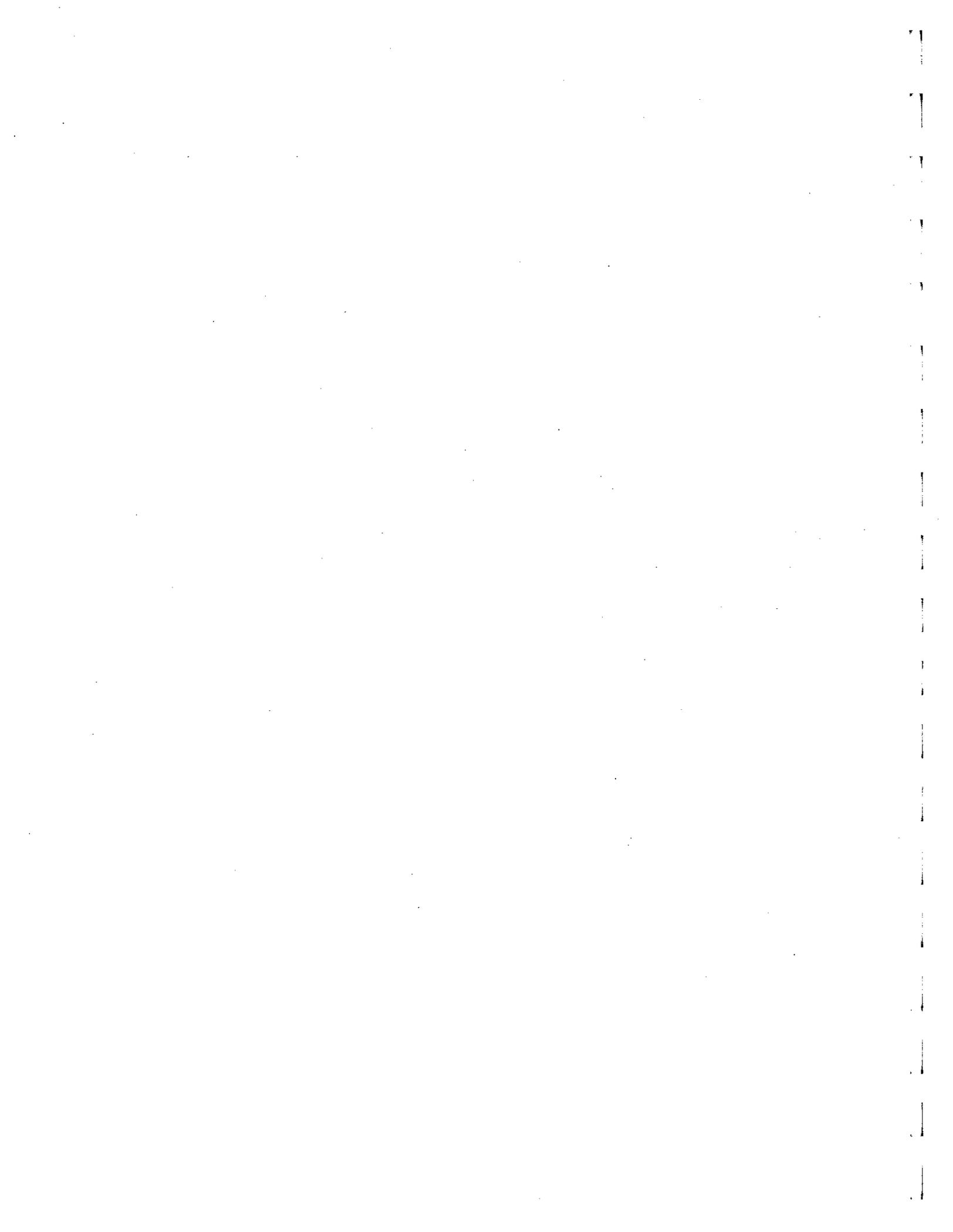
6TH day of JAN 1999

Carole A. Good

Notary Public

My commission expires

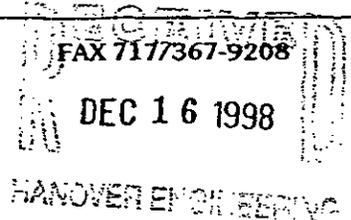
NOTARIAL SEAL
CAROLE A. GOOD, NOTARY PUBLIC
LANCASTER, LANCASTER CO PA
MY COMMISSION EXPIRES FEB 16 2002



MOUNT JOY TOWNSHIP

159 MERTS DRIVE
ELIZABETHTOWN, PA 17022
717/367-8917 ■ 717/653-4959

Mount Joy Township Board of Supervisors
December 14, 1998
AGENDA



1. Call meeting to order, invocation and pledge of allegiance.
2. Rollcall of the Supervisors.
3. Announcement by the Chairman:

The Board of Supervisors tonight at the conclusion of the Other Business section of this meeting will recess for an Executive Session. The Executive Session will be held to discuss labor contracts and personnel-related matters. Any official action taken based upon discussions held in our Executive Session will occur at an open public meeting. (Also see item # 11)

4. The Third Annual Mount Joy Township Awards Ceremony:

At a dinner meeting prior to our business meeting agenda tonight, the Board of Supervisors honored the following members of our Board and Commissions for their public service to Mount Joy Township: Park/Recreation Board - Carl Anthony, Jeff Burkhart, Tony Kreider, and Ed Warburton; Planning Commission - Mark Diffenderfer, Fred Kurtz, and Dan Lamb; Sewer/Water Authority - Richard Erb and Eric Metzler; Township Community Development Representative - Harold Mason; and Zoning Hearing Board - Charles Brewer and Robert Lehman. On behalf of the Township, our appreciation is extended and our best holiday wishes!

5. Public Comment:

An opportunity for the public to make comments on specific items of the agenda.

6. Consent Calendar:

The following agenda items will be acted upon and adopted by a single motion unless any member of the Board of Supervisors wishes to consider an item separately and for that item to be voted on separately:

- a. Approve and ratify the minutes of the November 16, 1998 meeting.
- b. Approve payment of all bills via Bill List #21-1998 in the amount of \$24,419.47 and Bill List #22-1998 in the amount of \$31,608.07 and ratify payment of all payroll for the period of October 31, 1998 through November 27, 1998, inclusive, in the amount of \$41,256.72 which represents two pay periods.

■ SUPERVISORS
■ SEWER ENFORCEMENT OFFICE

■ AUTHORITY
■ ZONING OFFICER

■ PLANNING COMMISSION
■ ZONING HEARING BOARD

6. Consent Calendar (Con't):

- c. MJT Associates, Inc. (Sheaffer Ridge): MJTPC File #FLDP-96-2(A): Accept Letter of Credit #13-295632-83, in the amount of \$12,800, as issued by Farmers First Bank to guarantee payment to the Township of Mount Joy the fee-in-lieu of mandatory dedication of land for park and recreation purposes. [The affected property is located along Sheaffer Road.]
- d. Lancaster County Vo-Tech School: MJTPC File #96-5: Release cash escrow account as issued by Fulton Bank in the current amount of \$1,000 as recommended in the letter dated November 19, 1998 from RAV Associates to guarantee the proper installation of stormwater management facilities. [The affected property is located along Old Market Street.]
- e. Kinsey's Archery Products: MJTPC File #FLDP-94-5(A): Establish \$74,500 as the dollar amount for the required letter of credit as recommended in the letter dated December 8, 1998 from RAV Associates to guarantee the proper installation of all public improvements, excluding public sewer and public water. [The affected property is located along Steel Way.]
- f. Elizabethtown Area Recreation Commission: Approve Mount Joy Township Budget Contribution of \$27,761.12.
- g. 1999 Meeting Schedule: Approve and authorize advertisement of the 1999 Board of Supervisors Meeting Schedule.
- h. 1999 Holiday Schedule: Approve the 1999 Holiday Calendar.
- * i. Wastewater Management Plan: Authorize the Township to advertise the availability of the Act 537 Wastewater Management Plan. The Township Planning Commission at its November 23rd meeting recommended approval.

7. Presentation:

A representative from Crossgates, Inc. will be present to provide information on Industrial Development.

8. Presentation:

Dave Hummer, Roadmaster, will be present to provide an update to the Township Roads Condition Map.

9. Reports:

Elizabethtown Fire Company
Fire Apparatus Committee (Supervisor Robert Miller)
Florin Fire Co.*
Fire Department Mount Joy
Forest Fire Co. - Emergency Management
Mastersonville Fire Co.
Park and Recreation Board*
Planning Commission Minutes*
Police Department*

* Written - on file
Recreation Commission (Supervisor Cole)
Rheems Fire Co.
Roadmaster*
Sewage Enforcement Officer*
Sewer/Water Authority Minutes*
Sewer/Water Regionalization Committee
(Supervisor Ralph Miller)
Township Engineer*
Zoning Hearing Board & Officer*

10. Veterans of Foreign Wars:

Memorandum from Township Secretary dated November 30, 1998 regarding appraisal for the Township property located along Veterans Drive.

11. Special Counsel:

Authorization to appoint the firm of Reed Smith Shaw & McClay, Joseph C. Rudolf, Esq. as labor attorney for contract negotiations, union grievances, and personnel related matters. Motion by a Board member as follow-up to discussions held in Executive Session November 16, 1998.

12. Lancaster County Tax Collection Bureau:

Local Taxpayers Bill of Rights Resolution.

13. Mount Joy Township Road Section Standard:

Request for waiver of the provisions contained in Chapter 116, Article III of the Mount Joy Township Road Ordinance (§116-23.C) in accordance with letter from Township Engineer dated December 10, 1998 to use more bituminous pavement and less stone. This is for the Northbrooke Development, Phase II.

14. Communications:

- a. Letter dated November 17, 1998 from Time Warner Cable; re: Cable Rate Increases.
- b. Letter dated November 30, 1998 from Time Warner Cable; re: Corrections to Cable Rate Increases.
- c. Letter dated December 3, 1998 from Pennsylvania Labor Relations Board; re: Complaint by Mount Joy Township Police Association and Legal Notice of Hearing, Township Ethics Resolution.

15. Other Business:

16. The next meeting of the Mount Joy Township Board of Supervisors will be held January 4, 1999 at 7:30 PM. This is the first Monday of the month.

17. Adjournment.

HANDOVER ENGINEERING

ASSOCIATES, INC.

20 C Snyder Lane
Ephrata, PA 17522-9101
(717) 721-7444
FAX (717) 721-7447

December 1, 1998

Mr. George Mummert
Lancaster County Planning Commission
PO Box 83480
Lancaster, PA 17608-3480

RE: Mount Joy Township Act 537 Plan
Project No: LLA-1003

Dear George:

On behalf of the Mount Joy Township Board of Supervisors, we are submitting a copy of the proposed Township Act 537 Wastewater Management Plan to the Lancaster County Planning Commission for review.

The Township is providing the opportunity for municipal review and comment on the 537 Plan prior to adoption and submission to the Department of Environmental Protection.

In keeping with the implementation schedule previously submitted to the Department to comply with the current plant overload conditions, we will need to receive comments from the Planning Commission prior to January 15, 1999.

Should you have any questions, please do not hesitate to contact us.

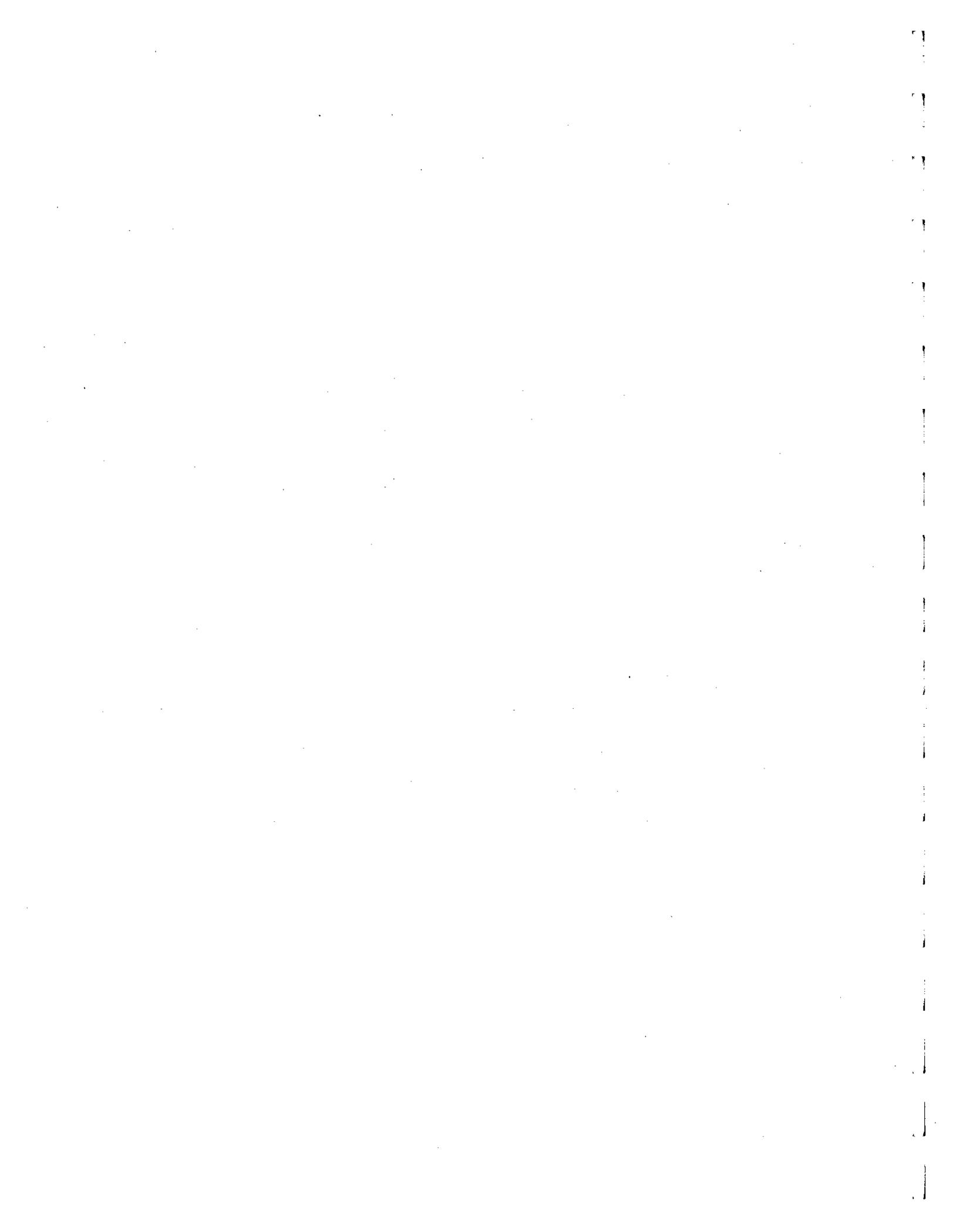
Sincerely,



Michael S. Moulds, PE
Chief Engineer

Enclosure

copy: Bruce Hamer, Mount Joy Township Authority
Jack Hadge, Mount Joy Township



MOUNT JOY TOWNSHIP

159 MERTS DRIVE
ELIZABETHTOWN, PA 17022
717/367-8917 ■ 717/653-4959

NOV 25 1998

FAX 717/367-9208

Mount Joy Township Planning Commission
November 23, 1998

HANOVER ENGINEERING

AGENDA

1. Call meeting to order.
2. Rollcall of the Planning Commission members.
3. Consent Calendar:
 - a. Approve and ratify the minutes of the October 26, 1998 meeting.
 - b. Accept the minutes of the Board of Supervisors meeting held on October 19, 1998; the draft minutes of the Sewer and Water Authority meetings held on October 27, 1998; and notice of the Zoning Hearings to be held on December 2, 1998.
 - c. Mount Joy Career & Technology Center, MJTPC File #FLDP-98-2: Grant a 90-day extension of time to record the final plan.
 - d. Northbrooke Phase II, MJTPC File #FSDP-94-8(C): Accept a 92-day extension of time to review the final plan.
 - e. Jiffy Lube, MJTPC File #FLDP-98-12: 1) Accept a 120-day extension of time to review the final plan; and 2) Postpone conditional final plan approval.
4. Dennis L. Umbrell:
 - a. Requests a waiver of the provisions contained in/at Chapter 119, Article III of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended; and
 - b. Requests a waiver of the provisions contained in/at Chapter 113, Article III, §113-12.B of the Stormwater Management Ordinance of the Township of Mount Joy, i.e. Ordinance LXXXVIII, as amended, such that the applicant will not be required to prepare, submit and gain approval of a land development plan or major earth disturbance permit application for the construction of a pole barn (42'x48') with a feed storage addition (10'x16') on his property located along Milton Grove Road (SR 4025/LR 36004).
5. Curtis J. Martin:
 - a. Requests a waiver of the provisions contained in/at Chapter 119, Article III of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended; and

■ SUPERVISORS

■ SEWER ENFORCEMENT OFFICE

■ AUTHORITY

■ ZONING OFFICER

■ PLANNING COMMISSION

■ ZONING HEARING BOARD

5. Curtis J. Martin (Con't):

- b. Requests a waiver of the provisions contained in/at Chapter 113, Article III, §113-12.B of the Stormwater Management Ordinance of the Township of Mount Joy, i.e. Ordinance LXXXVIII, as amended, such that the applicant will not be required to prepare, submit and gain approval of a land development plan or major earth disturbance permit application for the construction of an addition (14'x30') onto the existing barn on his property located along Milton Grove Road (SR 4014/LR 36069).

6. Paul J. Fittery, MJTPC File #FSDP-98-16:

Conditional final plan approval.

7. Heckman/Olweiler Apartments, MJTPC File #FSDP-98-9:

Discussion and further review of the design plan.

8. Mount Joy Township Act 537 Waste Water Management Plan:

Motion to recommend to the Board of Supervisors the adoption of the Mount Joy Township Waste Water Management Plan dated November, 1998 as the official sewage facilities plan for Mount Joy Township. Report submitted to the Planning Commission at its meeting of October 26, 1998.

9. Initial View:

Kinsey's Archery Products, Inc.; MJTPC File #FLDP-94-5(A).

10. Correspondence:

- a. Letter dated November 12, 1998 from RAV Associates; re: Keener Tract, Third Review.
- b. Letter dated November 12, 1998 from RAV Associates; re: Grandview Meadows, Second Review.
- c. Building permits issued from 10/1/98 through 10/31/98.

11. Other Business:

12. The next regularly scheduled meeting of the Mount Joy Township Planning Commission will be held on Monday, December 21, 1998 beginning at 7:30 PM. (This is the third Monday of the month.)

13. Adjournment.

MOUNT JOY TOWNSHIP

159 MERTS DRIVE
ELIZABETHTOWN, PA 17022
717/367-8917 ■ 717/653-4959

FAX 717/367-9208

Minutes of the Regular Meeting of the Mount Joy Township Planning Commission Held on October 26, 1998

1. The meeting was called to order by Daniel D. Lamb at 7:30 PM.
2. Rollcall of the Planning Commission members.
Present: Mark H. Diffenderfer, Gerald S. Hossler, Fred E. Kurtz, Daniel D. Lamb, and Robert E. Miller
3. Consent Calendar:
 - a. Approve and ratify the minutes of the September 28, 1998 meeting.
 - b. Accept the minutes of the Board of Supervisors meeting held on September 21, 1998; the draft minutes of the Sewer and Water Authority meetings held on September 22, 1998; and notices of the Zoning Hearings to be held on October 29, 1998 and November 4, 1998.
 - c. Greiner Industries, Inc.; MJTPC File #FLDP-96-20(A): Grant a 45-day extension of time to record the final plan.
 - d. Deerfield Phase II; MJTPC File #FSDP-97-17: Grant a 45-day extension of time to record the final plan.
 - e. Dennis R. Hackman; MJTPC File #FSDP-98-10: Grant a 30-day extension of time to record the final plan.
 - f. Wendy's Old Fashioned Hamburger of NY, Inc.; MJTPC File #FLDP-97-14: Grant a 180-day extension of time to record the final plan.
 - g. Keener Tract; MJTPC File #FSDP-98-11: Grant a waiver of the provisions contained in/at Chapter 119, Article VI, §119-30.J.(3) (improvement of existing streets) of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended.
 - h. Saint Peter's Catholic Church; MJTPC File #FLDP-97-10(A): Approve field revisions to the storm drainage facilities at the Mill Road site.

A motion was made Gerald S. Hossler to approve the consent calendar as written. Robert E. Miller seconded the motion, with all members voting in favor of the motion.

4. Paul Ober:

Paul Ober was in attendance to request waivers of having to prepare, submit and gain approval of a land development plan, a minor earth disturbance permit, or major earth disturbance permit for the construction of a pole shed (14'x16') for cattle on the property located at 1339 Creek Road. Township Engineer Robert Visniski stated that there was no problem with granting the waivers requested.

A motion was made by Daniel D. Lamb to grant waivers of the provisions contained in/at a) Chapter 119, Article III of the Mount Joy Township Subdivision and Land Development Ordinance, i.e.

■ SUPERVISORS
■ SEWER ENFORCEMENT OFFICE

■ AUTHORITY
■ ZONING OFFICER

■ PLANNING COMMISSION
■ ZONING HEARING BOARD

4. Paul Ober (Con't):

Ordinance CX, as amended; and b) Chapter 113, Article III, §113-12.A and §113-12.B of the Stormwater Management Ordinance of the Township of Mount Joy, i.e. Ordinance LXXXVIII, as amended, such that the applicant will not be required to prepare, submit and gain approval of a land development plan, a minor earth disturbance permit, or major earth disturbance permit for the construction of a pole shed (14'x16') for cattle. Gerald S. Hossler seconded the motion, with all members voting in favor of the motion.

5. Dale J./Dorothy F. Berrier, MJTPC File #FSDP-97-15(A):

Jeffrey S. Burkhart of D. C. Gohn Associates, Inc. was in attendance to request a waiver of design standards and conditional final plan approval. Mr. Burkhart stated that the conditions in the letter dated October 22, 1998 from RAV Associates would be met by the applicant.

A motion was made by Fred E. Kurtz to grant a) a waiver of the provisions contained in/at Chapter 113, Article IV, §113-21 (design standards) of the Stormwater Management Ordinance of the Township of Mount Joy, i.e. Ordinance LXXXVIII, as amended; and b) conditional final plan approval contingent upon the conditions contained in the letter dated October 22, 1998 from RAV Associates being satisfied. Gerald S. Hossler seconded the motion, with all members voting in favor of the motion.

6. Owen E. Mummau, MJTPC File #FSDP-97-16(A):

Jeffrey S. Burkhart of D. C. Gohn Associates, Inc. was in attendance to request a waiver of design standards and conditional final plan approval. Mr. Burkhart stated that the conditions in the letter dated October 22, 1998 from RAV Associates would be met by the applicant.

A motion was made by Daniel D. Lamb to grant a) a waiver of the provisions contained in/at Chapter 113, Article IV, §113-21 (design standards) of the Stormwater Management Ordinance of the Township of Mount Joy, i.e. Ordinance LXXXVIII, as amended; and b) conditional final plan approval contingent upon the conditions contained in the letter dated October 22, 1998 from RAV Associates being satisfied. Fred E. Kurtz seconded the motion, with all members voting in favor of the motion.

7. Heckman/Olweiler Apartments, MJTPC File #FSDP-98-9:

Jeffrey S. Burkhart of D. C. Gohn Associates, Inc. was in attendance to request a deferral of conditional final plan approval and offer a 30-day extension of time for plan review.

A motion was made by Fred E. Kurtz to a) defer action on conditional final plan approval and b) accept a 30-day extension of time to review the final plan. Daniel D. Lamb seconded the motion, with all members voting in favor of the motion.

8. Jiffy Lube, MJTPC File #FLDP-98-12:

Jeffrey S. Burkhart of D. C. Gohn Associates, Inc. was in attendance to request conditional final plan approval. Mr. Burkhart stated that the PennDOT requirements have not been completed due to scheduling. He submitted compliance information and asked for a waiver of the concrete curb design. Mr. Burkhart then reviewed the items that have been completed or are in-process from the letter dated September 24, 1998 from RAV Associates. Township Engineer Robert Visniski recommended that the Planning Commission defer conditional final plan approval until after the applicant has met

8. Jiffy Lube; MJTPC File #FLDP-98-12 (Con't):

with PennDOT. Mr. Burkhart stated that a highway occupancy permit will be submitted to PennDOT and the applicant is requesting conditional final plan approval as a demonstration of the Township's intent. Mr. Visniski responded that the Planning Commission granted waivers at the September meeting which demonstrate the Township's intentions. Steve Rowland of Stop N' Go Oil Change commented on the projected number of vehicles to be serviced at this location. Mr. Burkhart stated that the marketing numbers are based upon start-up business expectations according to the applicant. He added that the compliance information he provided this evening is in response to the Township Engineer's comments regarding the traffic study submitted by HRG. Mr. Visniski stated that the traffic study submitted should have indicated the average vehicles serviced per day and not the start-up numbers. Mr. Burkhart responded that the traffic information supplied meets the ordinance. Dennis Hiller of Brookfield Drive voiced his objection to any additional traffic at this intersection.

A motion was made by Daniel D. Lamb to defer action on conditional final plan approval. Gerald S. Hossler seconded the motion, with all members voting in favor of the motion.

9. Cocker's Towing, Inc.; MJTPC File #FLDP-98-13:

Don and Ron Cocker were in attendance to request conditional final plan approval. The letter dated October 26, 1998 from RAV Associates was reviewed. Ron Cocker stated that chain link fencing would be installed around the perimeter of the property. Township Engineer Robert Visniski recommended that the Planning Commission grant conditional final plan approval. Ron Cocker also stated that the neighbor with the swimming pool has requested that no trees be planted along the property line and will submit a letter stating as such.

A motion was made by Daniel D. Lamb to grant conditional final plan approval contingent upon the comments contained in the letter dated October 26, 1998 from RAV Associates being satisfied and the neighbor submitting a letter requesting that no trees be planted along the property line. Fred E. Kurtz seconded the motion, with all members voting in favor of the motion.

10. Northbrooke Phase II; MJTPC File #FSDP-94-8(C):

Township Engineer Robert Visniski stated that no new plan revisions have been received and recommended that the Planning Commission defer action on the plan.

A motion was made by Daniel D. Lamb to defer action on conditional final plan approval. Gerald S. Hossler seconded the motion, with all members voting in favor of the motion.

11. Leon S. & Anna H. Gehman; MJTPC File #FSDP-98-14:

Jeffrey S. Burkhart of D. C. Gohn Associates, Inc. and Leon Gehman were in attendance to request waivers and conditional final plan approval. The waivers requested were discussed. Mr. Burkhart stated there is no problem complying with the comments contained in the letter dated October 14, 1998 from RAV Associates. The easement width and requirements for the electric service line for lot #1 which crosses over lot #2 were discussed. Township Engineer Robert Visniski stated that a letter from PP&L should be obtained stating there is an easement permitting the service line to cross over lot #2. Mr. Visniski stated that a 30' easement width is not necessary.

11. Leon S. & Anna H. Gehman; MJTPC File #FSDP-98-14 (Con't):

A motion was made by Daniel D. Lamb to a) grant waivers of the provisions contained in/at Chapter 119, Article III, §119-10 (preliminary review process); Article IV, §119-19.C.(1) (existing contours), and §119-19.C.(5) (detailed floodplain information); and Article VI, §119-30.J.(3) (improvement of existing streets) §119-31.B.(1) (sidewalks) and §119-31.C (curbs) of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended; b) accept the withdrawal of the waiver request of the provisions contained in/at Chapter 119, Article IV, §119-16 (feasibility report on sewer and water facilities) of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended; c) make a recommendation to the Mount Joy Township Board of Supervisors to grant a waiver of the provisions contained in/at Chapter 116, Article III, §116-24.A (pavement widening and curbs) of the Mount Joy Township Road Ordinance, i.e. Ordinance CXL, as amended; and d) grant conditional final plan approval contingent upon the comments contained in the letter dated October 14, 1998 from RAV Associates being satisfied and a letter from PP&L being submitted stating there is an easement permitting the service line for lot #1 to cross over lot #2. Fred E. Kurtz seconded the motion, with Gerald S. Hossler, Fred E. Kurtz, Daniel D. Lamb, and Robert E. Miller voting in favor of the motion and Mark H. Diffenderfer abstaining from voting on the motion.

12. Dorothy Heistand; MJTPC File #FSDP-98-15:

Jeffrey S. Burkhardt of D. C. Gohn Associates, Inc. and Dorothy Heistand, power of attorney for the Emery Wolgemuth estate, were in attendance to request waivers and conditional final plan approval. The waivers requested were discussed. Mr. Burkhardt stated that the conditions in the letter dated October 14, 1998 from RAV Associates would be satisfied. Mr. Burkhardt stated that a note will be added to the plan as recommended in the letter dated September 29, 1998 from Morgan, Hallgren, Crosswell & Kane.

A motion was made by Daniel D. Lamb to a) grant waivers of the provisions contained in/at Chapter 119, Article III, §119-10 (preliminary review process); Article IV, §119-19.C.(1) (existing contours), and Article VI, §119-30.J.(3) (improvement of existing streets), §119-31.B.(1) (sidewalks) and §119-31.C (curbs) of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended; b) make a recommendation to the Mount Joy Township Board of Supervisors to grant a waiver of the provisions contained in/at Chapter 116, Article III, §116-24.A (pavements widening and curbs) of the Mount Joy Township Road Ordinance, i.e. Ordinance CXL, as amended; and c) grant conditional final plan approval contingent upon the conditions contained in the letter dated October 14, 1998 from RAV Associates being satisfied. Gerald S. Hossler seconded the motion, with all members voting in favor of the motion.

13. Paul J. Fittery; MJTPC File #FSDP-98-16:

Michael Lapp of Diehm & Sons was in attendance to request waivers and a postponement of conditional final plan approval. Mr. Lapp stated that the plan has also been submitted to South Londonderry Township for approval and is currently awaiting Mount Joy Township Zoning Hearing Board approval for the proposed flag lot. The waivers requested were discussed. Mr. Lapp also requested a recommendation to the Board of Supervisors for a waiver of pavement widening and curbs along Church Road. Chairman Lamb requested that the additional waiver request be submitted in writing to the Township. Township Engineer John Roche stated that the comments in the letter

13. Paul J. Fittery; MJTPC File #FSDP-98-16 (Con't):

dated October 14, 1998 from RAV Associates are limited to Mount Joy Township and do not include South Londonderry Township requirements.

A motion was made by Daniel D. Lamb to a) grant waivers of the provisions contained in/at Chapter 119, Article III, §119-10 (preliminary review process); Article IV, §119-19.A (plan scale), and Article VI, §119-30.J.(3) (improvement of existing streets), §119-31.B.(1) (sidewalks) and §119-31.C (curbs) of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended; contingent upon the conditions contained in the letter dated October 14, 1998 from RAV Associates being satisfied; b) make a recommendation to the Mount Joy Township Board of Supervisors to grant a waiver of the provisions contained in/at Chapter 116, Article III, §116-24.A (pavement widening and curbs) of the Mount Joy Township Road Ordinance, i.e. Ordinance CXL, as amended; contingent upon the applicant submitting a request for the waiver in writing; and c) postpone conditional final plan approval. Robert E. Miller seconded the motion, with all members voting in favor of the motion.

14. Correspondence:

The following correspondence was received and reviewed by the Planning Commission.

a) Mount Joy Township Act 537 Waste Water Management Plan.

Township Manager Jack Hadge stated that review and recommendation to the Board of Supervisors of the Act 537 Waste Water Management Plan would be on the November Planning Commission agenda.

b) Building permits issued from 9/1/98 through 9/30/98.

15. Other Business:

The following mylars were signed prior to tonight's meeting by the appropriate members of the Planning Commission:

Deerfield Phase II; MJTPC File #FSDP-97-17

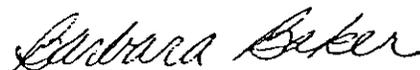
Greiner Industries, Inc.; MJTPC File #FLDP-96-20(A)

Dennis R. Hackman; MJTPC File #FSDP-98-10

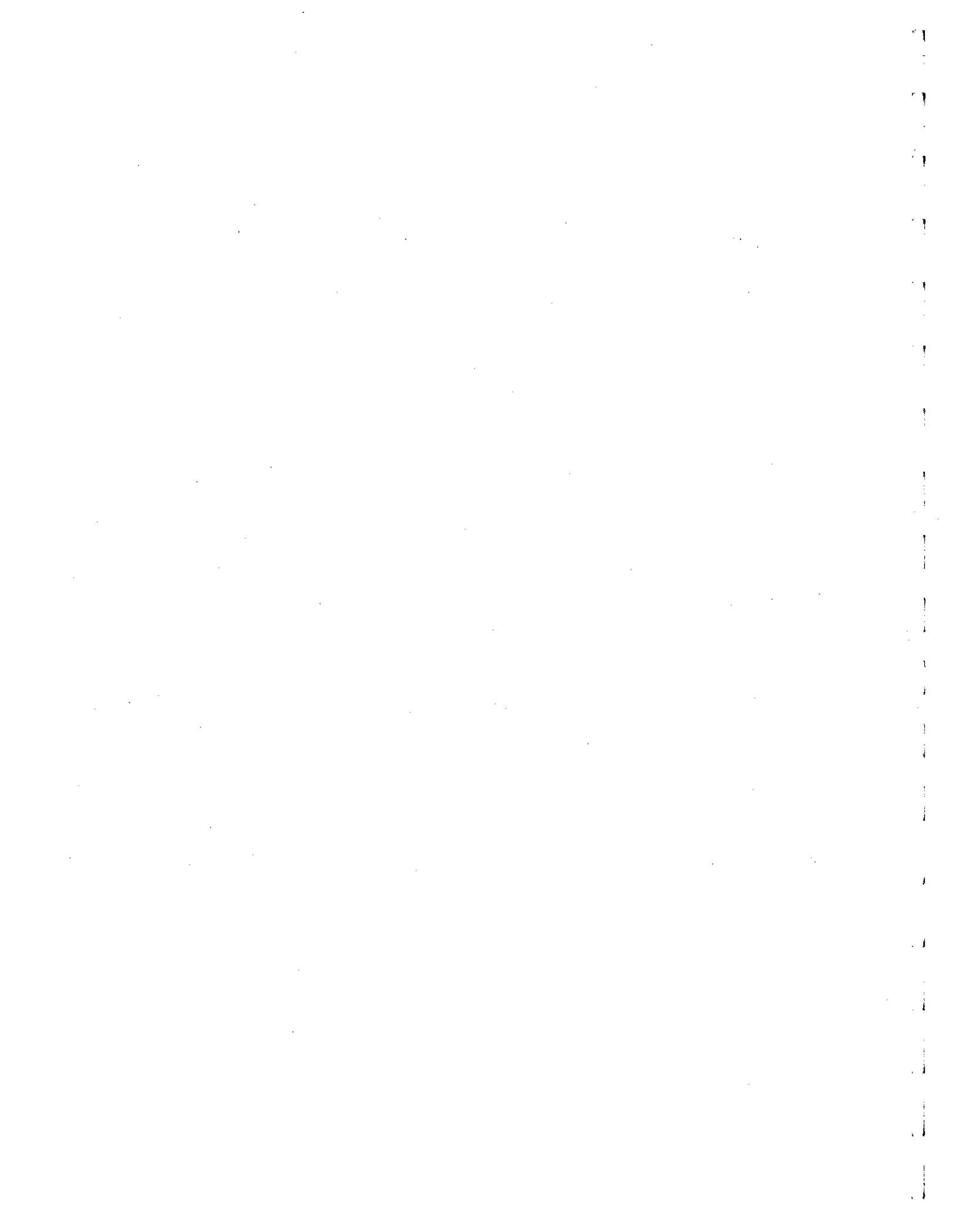
16. The next regularly scheduled meeting of the Mount Joy Township Planning Commission will be held on Monday, November 23, 1998 beginning at 7:30 PM.

17. A motion was made by Daniel D. Lamb to adjourn the meeting at 8:45 PM. Robert E. Miller seconded the motion, with all members voting in favor of the motion.

Respectfully Submitted,



Barbara Baker
Assistant Secretary



HANDOVER ENGINEERING

ASSOCIATES, INC.

20 C Snyder Lane
Ephrata, PA 17522-9101
(717) 721-7444
FAX (717) 721-7447

October 23, 1998

Mr. Jack Hadge, Manager
Mount Joy Township
159 Mertz Drive
Elizabethtown, PA 17022

RE: Mount Joy Township 537 Plan
Planning Commission Review
Project No: LLA -1003

Dear Jack:

We are enclosing a copy of the Draft 537 Plan for review by the Township Planning Commission. As per your request, we have also prepared a two page summary of the 537 Plan recommendations for distribution to the Commission at their meeting on the 26th. This will provide the Commission members with an opportunity to review the report prior to their next meeting in November. I will be available to attend the November meeting if requested to provide any additional information on the plan and respond to any questions.

The 537 Plan approval process requires that the submittal to the Department of Environmental Protection (DEP) include documentation that the Township Planning Commission have an opportunity to review the Plan and provide comment. It is our intent to document this requirement with a copy of the Planning Commission's minutes, which would include an approved motion recommending Township approval of the 537 Plan dated November 1998.

We will be required to submit the 537 Plan to the Borough of Elizabethtown, West Donegal Township and Mount Joy Borough for their comment since the Plan involves regional cooperation with these municipalities. DEP will also require that the Lancaster County Planning Commission have an opportunity to review and comment on the Plan. Following these reviews, the Township will need to advertise in the newspaper, the availability of the 537 Plan for public comment 30 days prior to taking any action at a meeting of the supervisors.

We would appreciate the Planning Commission's consideration of this report. Please let me know if there are any questions that I can answer from the October meeting or if any member would want additional copies of the plan to review in more detail.

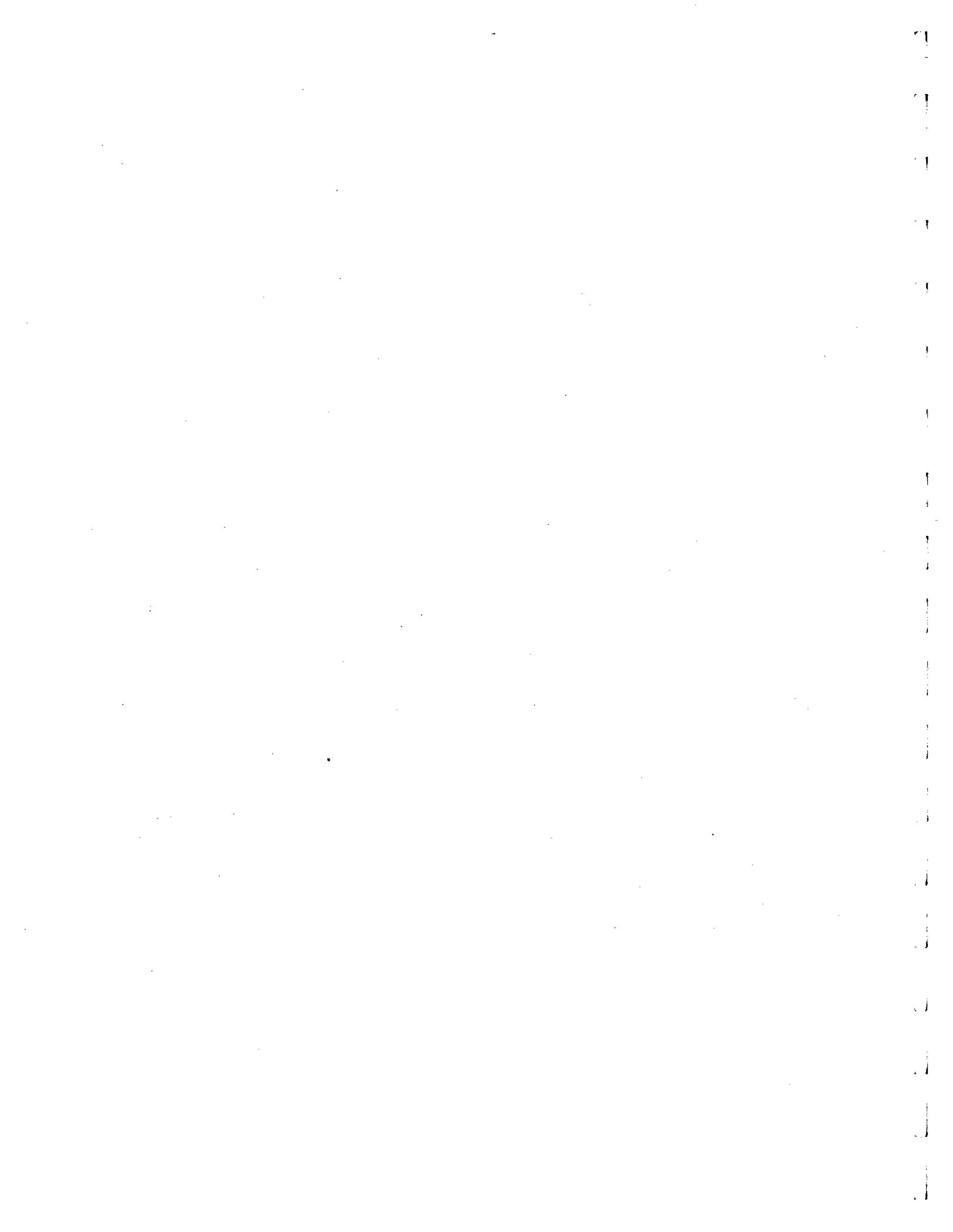
Sincerely,



Michael S. Moulds, PE
Chief Engineer

Attachment

copy: Bruce Hamer, MJTA



MOUNT JOY TOWNSHIP ACT 537 WASTEWATER MANAGEMENT PLAN SUMMARY OF RECOMMENDATIONS

In compliance with the Pennsylvania Sewage Facilities Act and the regulations of the Department of Environmental Protection (DEP), Mount Joy Township (Township) has prepared this document for adoption as its official sewage facilities plan. The 537 Plan is intended to address wastewater management of existing and new discharges of wastewater in the Township in order to prevent groundwater contamination caused by inadequately treated sewage. The Plan of Study was approved by DEP on July 11, 1990 and modifications approved on May 20, 1993.

Final Plan Recommendation

This 537 Plan has developed recommendations for future wastewater management planning in the Township through the year 2020. The scope included the entire Township and included provisions for public sewer service within the Township as well as wastewater flow contributions to the Elizabethtown Borough, West Donegal Township and Mount Joy Borough sewer systems. Projections were developed for growth areas as developed by recent comprehensive planning and zoning revisions by the Township. The Plan is based on the goal of providing future growth with the availability of public sewer capacity. Flow estimates were developed to provide for sewer conveyance and treatment capacity for growth in the defined urban growth areas delineated by the comprehensive plan and commercial and industrial zoned areas of the Township. In addition, the plan allows for sizing of critical conveyance, treatment and pumping facilities to provide capacity for long-term growth of the area beyond the 2020 planning period. Based on existing needs, planned and proposed development and estimates of future development in areas zoned for residential, commercial and industrial development, the plan recommends a total design capacity of 1,297,100 gallons per day.

Seven alternatives were evaluated for conveyance and treatment of the projected flows from the different drainage areas of the Township. Alternatives included conveyance to the Elizabethtown treatment plant by alternative routes using expanded capacity in the Elizabethtown and West Donegal interceptors. Alternatives also considered the construction of Township treatment sites as an alternative to the cost of conveyance and expansion of the Elizabethtown plant and outfall.

The alternatives addressed an expansion of conveyance capacity in the existing MJTA system. There are no MJTA provisions to construct extensions or collection sewers. Further extension of the sewer system into areas designated for public sewer will be constructed and financed by development.

There were no existing needs warranted for public sewer as a result of a review of on-lot disposal system (OLDS) data, well testing and soils information on the Township. Historically, system repairs have been evenly distributed throughout the areas of the Township and have been generally associated with older systems. The 537 Plan evaluated the possibility of public sewer service to scattered development around the Milton Grove area. However, high costs and lack of a justified need did not warrant a recommendation for sewer in this area. Agricultural zoning limitations and recommendations for non-structural alternatives are expected to address adequate wastewater management with the continued use of OLDS in this area.

A recommendation is being made on selecting sewage management programs that do not directly involve construction of sewers or collection systems. Specifically, the selected non-structural alternatives for areas where on-lot systems will be utilized are:

1. OLDS Education.

2. Hydrogeologic Evaluations - Due to widespread conditions that include hazardous soils and limestone geology, no Component I modules will be allowed and the Township will require preliminary hydrogeological analyses for subdivisions proposing OLDS in high nitrate areas. Designates areas for special groundwater protection in high nitrate areas of the Township identified in the well sampling portion of the Plan.
3. Non-Building Planning Module Waiver. Simplifies planning process to document future planning requirements for subdivisions proposed for non-building use (ie. farming and conservation or lot add-on)
4. Dispersion Plume Easements. To provide for suitable land area to contain the nitrate groundwater plume originating from an OLDS in high nitrate areas.

Implementation

The selected alternative will be the primary activity to address growth in the Township and prevent potential future groundwater contamination.

The selected alternative identified in the plan as Elizabethtown Alternative 2 will provide for conveyance and treatment capacity for a total of 5,501 equivalent dwelling units (EDU's). With one exception, wastewater treatment will be provided at the Elizabethtown treatment facility by way of a plant expansion to a capacity of 4.5 million gallons per day to address the regional needs of Mount Joy Township, West Donegal Township and Elizabethtown Borough. The proposed sewer service area and 5- and 10-year estimated growth areas are illustrated on Map 13. Improvements to the MJTA system are presented on Map 16.

The only other treatment site utilized is the Mount Joy Borough sewer system. By prior agreement in December 1995, MJTA turned over its collection system tributary to the Mount Joy Borough system. Estimated growth in this small area of the Township totaling 524 EDU's will be served by Mount Joy Borough.

MJTA will need to modify its current intermunicipal agreements for capacity with Elizabethtown Borough and West Donegal Township. Through coordination of current planning and adoption of joint cooperative resolutions, all three municipalities will adopt revised 537 Plans.

Estimated project costs for conveyance system improvements to the MJTA system including contributions to Elizabethtown Borough and West Donegal Township Authority for conveyance and treatment capacity total \$11,423,000. Estimated operation and maintenance costs for the proposed improvements and capacity are \$535,000 per year.

Funding for the project is anticipated to be provided by available MJTA funds in addition to capital financing income from proposed developer agreements to provide annual tapping fee income in support of a 5-year capital improvements program. Tapping fees are estimated to be in the \$3,500 to \$4,500 per EDU range. Project costs will be financed over an estimated 30-year term with a public bond issue. Additional revenue will come from an increase in annual user fees to cover increased debt service and operating costs. Estimated initial user fees will be in the \$400 to \$475 per year range.

MJTA would continue to be the owner and operator of the sewer collection and conveyance system. MJTA will be responsible for implementation of the capital improvement plan. The Township would administer the OLDS education plan and coordinate planning module planning requirements with land development planning ordinances and the services of the Township sewage enforcement officer.

MJTA

RECEIVED
OCT 29 1998

MOUNT JOY TOWNSHIP AUTHORITY
HANOVER ENGINEERING

157 MERTS DRIVE
ELIZABETHTOWN, PA 17022
717-367-0749 PHONE • 717-367-0204 FAX

October 28, 1998

Mr. Peter Whipple, Manager
Elizabethtown Borough
600 South Hanover Street
Elizabethtown, PA 17022

HAND DELIVERED

Dear Pete:

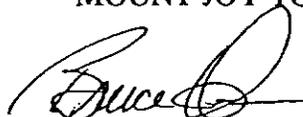
I am including, for your examination and comment, a draft copy of the Act 537 Plan for Mount Joy Township. I am requesting that any written comments you or other Borough officials may have on this proposed Plan be provided to me by Monday, November 30, 1998.

Our intent remains to submit this Plan to the Pennsylvania Department of Environmental Protection in accordance with the Action Plan Schedule adopted by Elizabethtown, Mount Joy and West Donegal at the joint meeting of August 27, 1998.

Please contact me with any questions you may have regarding this matter.

Sincerely,

MOUNT JOY TOWNSHIP AUTHORITY



Bruce Hamer
Administrator

pc: Mount Joy Township Authority Board
Mike Moulds, Hanover Engineering ✓
Jack Hadge, Mount Joy Township

MJTA

MOUNT JOY TOWNSHIP AUTHORITY

157 MERTS DRIVE
ELIZABETHTOWN, PA 17022
717-367-0749 PHONE • 717-367-0204 FAX

October 28, 1998

Mr. Paul Klinger, Manager
West Donegal Township
1 Municipal Drive
Elizabethtown, PA 17022

HAND DELIVERED

Dear Paul:

I am including, for your examination and comment, a draft copy of the Act 537 Plan for Mount Joy Township. I am requesting that any written comments you or other Township officials may have on this proposed Plan be provided to me by Monday, November 30, 1998.

Our intent remains to submit this Plan to the Pennsylvania Department of Environmental Protection in accordance with the Action Plan Schedule adopted by Elizabethtown, Mount Joy and West Donegal at the joint meeting of August 27, 1998.

Please contact me with any questions you may have regarding this matter.

Sincerely,

MOUNT JOY TOWNSHIP AUTHORITY



Bruce Hamer
Administrator

pc: Mount Joy Township Authority Board
Mike Moulds, Hanover Engineering ✓
Jack Hadge, Mount Joy Township

MJTA

MOUNT JOY TOWNSHIP AUTHORITY

157 MERTS DRIVE
ELIZABETHTOWN, PA 17022
717-367-0749 PHONE • 717-367-0204 FAX

October 28, 1998

Mr. Ray D'Agostino, Manager
Mount Joy Borough
21 East Main Street
Mount Joy, PA 17552

HAND DELIVERED

Dear Ray:

I am including, for your examination and comment, a draft copy of the Act 537 Plan for Mount Joy Township. I am requesting that any written comments you or other Borough officials may have on this proposed Plan be provided to me by Monday, November 30, 1998.

Our intent remains to submit this Plan to the Pennsylvania Department of Environmental Protection in accordance with the Action Plan Schedule adopted by Elizabethtown, Mount Joy and West Donegal at the joint meeting of August 27, 1998.

Please contact me with any questions you may have regarding this matter.

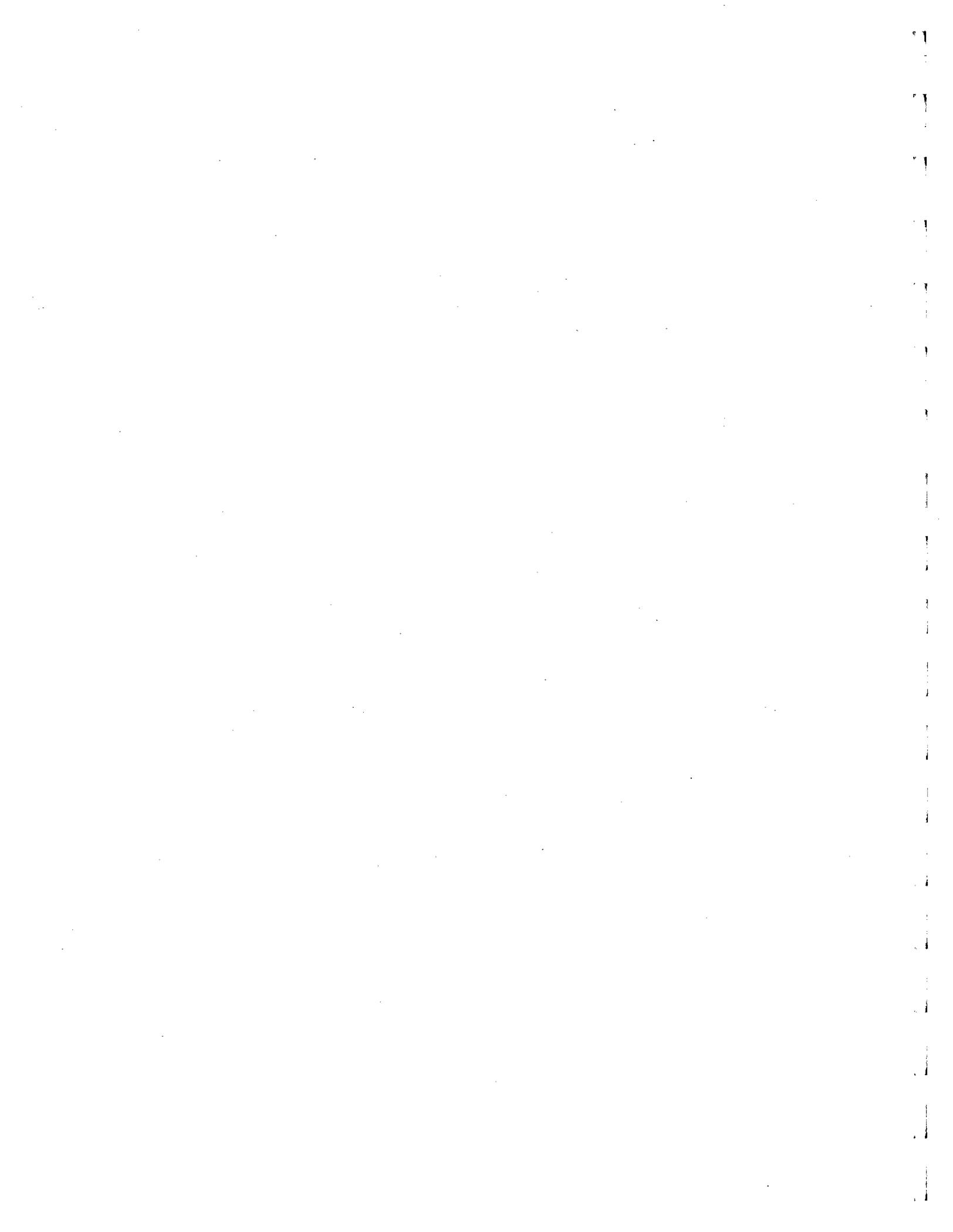
Sincerely,

MOUNT JOY TOWNSHIP AUTHORITY



Bruce Hamer
Administrator

pc: Mount Joy Township Authority Board
Mike Moulds, Hanover Engineering ✓
Jack Hadge, Mount Joy Township



MOUNT JOY TOWNSHIP

159 MERTS DRIVE
ELIZABETHTOWN, PA 17022
717/367-8917 ■ 717/653-4959

FAX 717/367-9208

Minutes of the Regular Meeting of the Mount Joy Township Planning Commission Held on November 23, 1998

1. The meeting was called to order by Daniel D. Lamb at 7:30 PM.
2. Rollcall of the Planning Commission members.
Present: Mark H. Diffenderfer, Gerald S. Hossler, Fred E. Kurtz, Daniel D. Lamb, and Robert E. Miller
3. Consent Calendar:
 - a. Approve and ratify the minutes of the October 26, 1998 meeting.
 - b. Accept the minutes of the Board of Supervisors meeting held on October 19, 1998; the draft minutes of the Sewer and Water Authority meetings held on October 27, 1998; and notice of the Zoning Hearings to be held on December 2, 1998.
 - c. Mount Joy Career & Technology Center; MJTPC File #FLDP-98-2: Grant a 90-day extension of time to record the final plan.
 - d. Northbrooke Phase II; MJTPC File #FSDP-94-8(C): Accept a 92-day extension of time to review the final plan.
 - e. Jiffy Lube; MJTPC File #FLDP-98-12: 1) Accept a 120-day extension of time to review the final plan; and 2) Postpone conditional final plan approval.

A motion was made by Gerald S. Hossler to approve the consent calendar as written. Robert E. Miller seconded the motion, with all members voting in favor of the motion.

4. Dennis L. Umbrell:

A motion was made by Daniel D. Lamb to grant waivers of the provisions contained in/at a) Chapter 119, Article III of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended; and b) Chapter 113, Article III, §113-12.B of the Stormwater Management Ordinance of the Township of Mount Joy, i.e. Ordinance LXXXVIII, as amended, such that the applicant will not be required to prepare, submit and gain approval of a land development plan or major earth disturbance permit application for the construction of a pole barn (42'x48') with a feed storage addition (10'x16') on the property located along Milton Grove Road South (SR 4025/LR 36004). Fred E. Kurtz seconded the motion, with all members voting in favor of the motion.

5. Curtis J. Martin:

A motion was made by Fred E. Kurtz to grant waivers of the provisions contained in/at a) Chapter 119, Article III of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended; and b) Chapter 113, Article III, §113-12.B of the Stormwater

■ SUPERVISORS
■ SEWER ENFORCEMENT OFFICE

■ AUTHORITY
■ ZONING OFFICER

■ PLANNING COMMISSION
■ ZONING HEARING BOARD

5. Curtis J. Martin (Con't):

Management Ordinance of the Township of Mount Joy, i.e. Ordinance LXXXVIII, as amended, such that the applicant will not be required to prepare, submit and gain approval of a land development plan or major earth disturbance permit application for the construction of an addition (14'x30') onto the existing barn on the property located along Milton Grove Road (SR 4014/LR 36069). Robert E. Miller seconded the motion, with all members voting in favor of the motion.

6. Paul J. Fittery: MJTPC File #FSDP-98-16:

Mr. and Mrs. Paul J. Fittery were in attendance to request conditional final plan approval. The letter dated November 12, 1998 from RAV Associates was reviewed. Zoning Officer Richard Forry recommended that the Planning Commission grant a waiver of the requirement to provide the specific location of the initial and/or replacement on-lot sewage disposal for lot #1 because the existing system is in good working order and this has not been required in the past. Mrs. Fittery stated that the existing dirt lane will not be abandoned. Township Engineer John Roche recommended that an access easement be obtained to use the dirt lane as a driveway with a note of abandonment upon the sale of either lot placed on the plan. Mrs. Fittery then stated that the Lebanon County Conservation District is reviewing the Erosion and Sedimentation Control Plan and a copy of the letter granting unconditional approval will be forwarded to the Township.

A motion was made by Daniel D. Lamb to a) grant a waiver of the provisions contained in/at Chapter 119, Article VI, §119-38.C.(3).(b) (location of on-lot sewage disposal system) of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended; and b) grant conditional final plan approval contingent upon the comments A.12 (note of abandonment upon sale of either lot) and B.1 (Lebanon County Conservation District) contained in the letter dated November 11, 1998 being amended and satisfied and the remainder of the comments of the letter being satisfied. Gerald S. Hossler seconded the motion, with all members voting in favor of the motion.

7. Heckman/Olweiler Apartments: MJTPC File #FSDP-98-9:

Joseph M. Gurney of D. C. Gohn Associates, Inc. and J. Philip Olweiler were in attendance for discussion and further review of the design plan. Mr. Gurney stated that a revised plan was recently submitted to the Township for review based upon comments from the August Planning Commission meeting. Mr. Gurney then stated that the revisions include moving the macadam and single car garages to the rear of the one apartment building to permit basement access. He stated that the other apartment building has been shortened and the garages are now attached to the end of the building.

Township Engineer Robert Visniski recommended that the Planning Commission first consider granting a waiver of the requirement of having to pay re-submittal fees for significant changes to a plan that is still in the review process. Zoning Officer Richard Forry stated that the Township submission fee of \$130.00 has already been paid and he did not foresee additional Township costs beyond the engineering fees which are paid by the applicant.

A motion was made by Daniel D. Lamb to grant a waiver of the provisions contained in/at Chapter 119, Article III, §119-10.D (submission of plan revisions) of the Mount Joy Township Subdivision and Land Development Ordinance, i.e. Ordinance CX, as amended. Fred E. Kurtz seconded the motion, with Mark H. Diffenderfer, Gerald S. Hossler, Fred E. Kurtz, and Daniel D. Lamb voting in favor of the motion, and Robert E. Miller voting against the motion.

7. Heckman/Olweiler Apartments; MJTPC File #FSDP-98-9 (Con't):

Fred Kurtz asked if buffer plantings would be along the adjoining residential property line. Mr. Gurney responded that some trees would be removed but a grouping of trees would remain and additional trees would be planted. Richard Forry stated that the outstanding zoning issue is to improve the entrance to T. J. Rockwell's. Mr. Olweiler stated that when the water line is installed, the entrance will be improved. Mr. Forry also stated that he would need to review the newly submitted revised plans for any other zoning issues. Robert Miller asked if leaves would accumulate and subsequently clog the underground stormwater pipes. Mr. Gurney responded that the landowner is responsible for maintaining the stormwater facilities. Mr. Visniski recommended that the sediment basin required during construction be expanded and graded to be an above ground detention basin instead of building the underground stormwater facilities. Mr. Gurney responded that early research indicated that the removal of rocks would make an above ground basin more costly.

A motion was made by Daniel D. Lamb to accept the landscaping plan as presented. Robert E. Miller seconded the motion, with all members voting in favor of the motion.

8. Mount Joy Township Act 537 Waste Water Management Plan:

Sewer and Water Authority Administrator Bruce Hamer was in attendance to answer questions regarding the Act 537 Plan. Mr. Hamer explained that the proposed Act 537 Plan is the first official plan to be considered for adoption by the Township. He stated that the Act 537 Plan is a long-term plan to the year 2020 which includes plans for the waste water treatment facility and also conveyance plans.

A motion was made by Daniel D. Lamb to recommend to the Board of Supervisors the adoption of the Mount Joy Township Act 537 Waste Water Management Plan dated November, 1998 as the official sewage facilities plan for Mount Joy Township. Fred E. Kurtz seconded the motion, with Mark H. Diffenderfer, Gerald S. Hossler, Fred E. Kurtz, and Daniel D. Lamb voting in favor of the motion, and Robert E. Miller voting against the motion.

9. Initial View:

Kinsey's Archery Products, Inc.; MJTPC File #FLDP-94-5(A). - 24,000 sq. ft. retail building

10. Correspondence:

The following correspondence was received and reviewed by the Planning Commission.

- a. Letter dated November 12, 1998 from RAV Associates; re: Keener Tract, Third Review.
- b. Letter dated November 12, 1998 from RAV Associates; re: Grandview Meadows, Second Review.
- c. Building permits issued from 10/1/98 through 10/31/98.

11. Other Business:

Township Engineer Robert Visniski stated that during the DEP imposed restriction on new hook-ups to the sewage treatment facility, the Township would be reviewing its ordinances to eliminate the need to grant some of the waivers which consistently are requested by the applicants and granted by the Board of Supervisors and Planning Commission. Mark Diffenderfer commended Mr. Visniski on the plans to revise the ordinances.

11. Other Business Con't:

The following mylar was signed prior to tonight's meeting by the appropriate members of the Planning Commission:

Keener Tract; MJTPC File #FSDP-98-11.

12. The next regularly scheduled meeting of the Mount Joy Township Planning Commission will be held on Monday, December 21, 1998 beginning at 7:30 PM.
13. A motion was made by Daniel D. Lamb to adjourn the meeting at 8:24 PM. Gerald S. Hossler seconded the motion, with all members voting in favor of the motion.

Respectfully Submitted,



Barbara A. Baker
Assistant Secretary

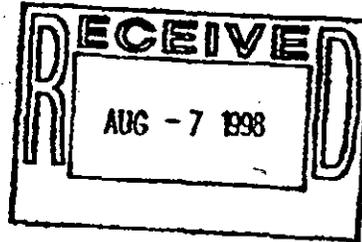


Pennsylvania Department of Environmental Protection

909 Elmerton Avenue
Harrisburg, PA 17110-8200
August 4, 1998

Southcentral Regional Office

Mr. Peter J. Whipple, Manager
Borough of Elizabethtown
600 South Hanover Street
Elizabethtown, PA 17022



717-705-4707
FAX-717-705-4760

Re: Sewage
1997 Wasteload Management Report
Elizabethtown Borough, Lancaster County

Dear Mr. Whipple:

A review of your 1997 Annual Municipal Wasteload Management Report submitted pursuant to Chapter 94 of the Department's rules and regulations has been completed. Further, on May 28, 1998 the Department conducted a regional planning consultation with representatives from Elizabethtown Borough, Mt. Joy Township, West Donegal Township and their engineers to discuss surcharging at the wastewater treatment facility and various capacity issues in the collection system. Our discussion also included your increase in average daily flow over the past year and the most recent violations on March 9, 10, 21, 22 and May 11, 12 and 13, 1998 to verify an existing hydraulic overload. It will be necessary for Elizabethtown Borough, as the permittee, to comply with Section 94.21 of Chapter 94. This section requires that Elizabethtown Borough:

1. Submit to the Southcentral Regional Office, within ninety (90) days of receipt of this letter, a written plan setting forth the actions to be taken to reduce the overload and provide the needed capacity to achieve compliance. The plan must also include a program for a limitation on and control of new connections to the overloaded sewage facilities and a schedule showing the completion date of each step toward compliance. No building permit may be issued which will result in a connection to the overloaded sewerage facilities until the plan for limited connections is approved by the Department.
2. Restrict new connections to the sewer system tributary to the overloaded sewage facilities to only those connections which fall within the exceptions stated in Sections 94.55, 94.56, and 94.57 of Chapter 94 until the requested plan and schedule is approved by the Department. A copy of Chapter 94 is enclosed for your use. Section 7 of the Sewage Facilities Act as amended by Act 149 does not provide for planning exemptions when sewage facilities have an existing hydraulic or organic overload or projected five-year overload.

For your use in the preparation of the above requested plan and schedule, attached is a copy of the Department's "Guidelines for Preparation of Corrective Action Plan and Schedule". Also attached for use by tributary municipalities is a copy of our "Sewer System Plan and Schedule Guidance" to be used in the preparation of a required inflow and infiltration remediation program.



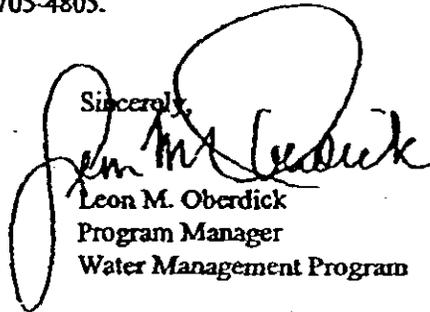
Mr. Whipple

- 2 -

August 4, 1998

We would like to meet with you to discuss the adequacy and implementation of the plan and schedule you develop. As discussed at our meeting, the Department supports your efforts to accelerate your construction completion schedule to the fall of 2000. When you have developed a corrective plan and schedule which you are satisfied is adequate for your wastewater treatment facility and all tributary collection systems, please contact Mr. Edward J. Corriveau, P.E., Chief, Planning and Finance Section and arrange a meeting. If you have any problems or questions during the development of your plan and schedule, please call Mr. Corriveau at (717) 705-4805.

Sincerely,



Leon M. Oberdick
Program Manager
Water Management Program

cc: Mr. Russell McNair, Project Engineer, Camp, Dresser & McKee, Inc.
Mr. Bruce Hamer, Administrator, Mt. Joy Township Authority
Mr. Paul Klinger, Township Manager, West Donegal Township Authority
Mr. Robert Schaffer, Project Engineer, Gannett Fleming, Inc.
Mt. Joy Township
West Donegal Township



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Post Office Box 1026
Harrisburg, Pennsylvania 17108-1026

October 8, 1998

RECEIVED
OCT 16 1998

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

HANOVER ENGINEERING

Michael S. Moulds, PE
Hanover Engineering Associates, Inc.
20 C Snyder Lane
Ephrata, PA 17522-9101

Re: File No. ER 98-2615-071-A
PV, Mount Joy Township Act 537 Plan
Official Sewage Facilities Plan, Lancaster
County

Dear Mr. Moulds:

The Bureau for Historic Preservation (the State Historic Preservation Office) has reviewed the above named project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation. These requirements include consideration of the project's potential effect upon both historic and archaeological resources.

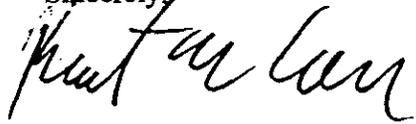
Based on an evaluation by our staff, there is a high probability that significant archaeological sites are located in this project area and could be adversely affected by project activities. Although there are no recorded archaeological sites within the project boundaries, the soil type, topographic 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 is required to locate potentially significant archaeological resources. Guidelines and information for survey are available from our office upon request.

There may be resources in or adjacent to the project area which are eligible for the National Register of Historic Places. Unless structures over 50 years of age will be demolished or altered in any way, the activity described in your proposal will have no effect on such resources and your responsibility for consultation with this office is complete. If buildings over 50 years of age will be affected physically or visually by project activities, you must submit current photographs of the buildings, keyed to a map, and a description of the project's effect on the buildings.

Page 2
October 8, 1998
Michael S. Moulds

If you need further information in this matter please consult Andrew Wyatt at (717) 772-0923. If you need a **status only** of the reviewed project please call Tina Webber at (717) 705-4036.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kurt W. Carr".

Kurt W. Carr, Chief
Division of Archaeology &
Protection

KWC/tmw

HANOVER ENGINEERING

ASSOCIATES, INC.

20 C Snyder Lane
Ephrata, PA 17522-9101
(717) 721-7444
FAX (717) 721-7447

September 2, 1998

Mr. Edward T. Dix
Bureau of Forestry, F.A.S.
Box 8552
Harrisburg, PA 17105-8552

RE: Mount Joy Township Act 537 Plan
Endangered Plant or Animal Impact
Project Number LLA-1003

Dear Mr. Dix:

Hanover Engineering Associates, Inc. is currently in the process of developing an Official Sewage Facilities Plan (Act 537 Plan) for Mount Joy Township, Lancaster County. As part of the plan the Department of Environmental Protection is requiring a review by your department of the impact of the proposed sewer lines, pump stations, etc, on any rare or endangered species.

We have included a USGS map and sewer facilities plan for your convenience. The USGS map was copied from the Elizabethtown Quad. The facilities plan is color coded for easy reference; blue represents facilities to be placed in state or township road beds, and yellow indicates areas where facilities will be placed in other areas. The plan also notes that the Radio Road pump station is a new facility while the Hershey Road and Schwanger Road pump stations are to be upgraded. The pump stations are shown in pink.

I sincerely appreciate your review of this project, and remain available should you need additional information or have questions or concerns.

Sincerely,



Michael S. Moulds, PE
Chief Engineer

Enclosures

MJTA

MOUNT JOY TOWNSHIP AUTHORITY

157 MERTS DRIVE
ELIZABETHTOWN, PA 17022
717-367-0749 PHONE • 717-367-0204 FAX

October 1, 1998

RECEIVED
OCT 03 1998

HANOVER ENGINEERING

Mr. Peter Whipple, Manager
Elizabethtown Borough
600 South Hanover Street
Elizabethtown, PA 17022

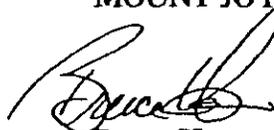
Dear Pete:

The Final Flow Projection for Mount Joy Township in the planned expansion/upgrade of the Elizabethtown Wastewater Treatment Plant is 1,297,100 gallons per day average daily flow (ADF). This figure, which includes the present capacity allocation of 404,000 gallons per day, is being used in finalizing the Mount Joy Township Act 537 Plan.

This information is being provided in compliance with the Action Plan Schedule adopted August 27, 1998.

Sincerely,

MOUNT JOY TOWNSHIP AUTHORITY



Bruce Hamer
Administrator

pc: Mount Joy Township Authority Board
Mike Moulds, Hanover Engineering ✓
Russ McNair, Camp, Dresser & McKee
Paul Klinger, West Donegal Township
Jack Hadge, Mount Joy Township



Pennsylvania Department of Conservation and Natural Resources

Rachel Carson State Office Building
P.O. Box 8552
Harrisburg, PA 17105-8552
September 17, 1998

RECEIVED
SEP 21 1998

HANOVER ENGINEERING

fax 717-783-5109
717-787-3444

Bureau of Forestry

Michael Moulds
Hanover Engineering Associates, Inc.
20C Snyder Lane
Ephrata, PA 17522-9101

RE: PNDI Review of Mount Joy Township Act 537 Plan, Lancaster County, PA.
PER NO: 006891

Dear Mr. Moulds:

In response to your request on September 2, 1998 the Pennsylvania Natural Diversity Inventory (PNDI) information system was used to gather information regarding the presence of resources of special concern within the referenced site. PNDI records indicate a potential impact to a confirmed occurrence of one species of special concern in the vicinity of the project.

Aplectrum hyemale, Puttyroot, is a Pennsylvania rare plant. It was last observed in 1993 in Helt's Woods. Its habitat is moist, rich wooded slopes.

Based on the information we have received regarding the project our office recommends that a site survey be conducted by a qualified botanist before the onset of any earth disturbance associated with the project, in order to confirm or deny the presence of this species in the project area. Please contact the office with the results of the survey and to set up a field visit to discuss measures necessary to protect the species.

This response represents the most up-to-date summary of the PNDI data files and is applicable for one year. 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. Should project plans change or additional information on listed or proposed species become available this determination may be reconsidered.

Stewardship

Partnership

Service

Michael Moulds

September 17, 1998

PNDI is a site specific information system that 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 Conservation and Natural Resources, The Nature Conservancy and the Western Pennsylvania Conservancy.

Please phone this office if you have questions concerning this response or the PNDI system.

Sincerely,

A handwritten signature in cursive script that reads "Jeanne Brennan".

Jeanne Brennan
Environmental Review Specialist
Pennsylvania Natural Diversity Inventory

HANOVER ENGINEERING

ASSOCIATES, INC.

20 C Snyder Lane
Ephrata, PA 17522-9101
(717) 721-7444
FAX (717) 721-7447

September 2, 1998

Mr. Kurt W. Carr
Pennsylvania Historical and Museum Commission
Box 1026
Harrisburg, PA 17108-1026

RE: Mount Joy Township Act 537 Plan
Historical or Archaeological Impact
Project Number LLA1003

Dear Mr. Dix:

Hanover Engineering Associates, Inc. is currently in the process of developing an Official Sewage Facilities Plan (Act 537 Plan) for Mount Joy Township, Lancaster County. As part of the plan the Department of Environmental Protection is requiring a review by your department of the impact of the proposed sewer lines, pump stations, etc, on any archaeological or historic resources.

We have included a USGS map and sewer facilities plan for your convenience. The USGS map was copied from the Elizabethtown Quad. The facilities plan is color coded for easy reference; blue represents facilities to be placed in state or township road beds/shoulders, and yellow indicates areas where facilities will be placed in other areas. The plan also notes that the Radio Road pump station is a new facility, while the Hershey Road and Schwanger Road pump stations are to be upgraded. The pump stations are shown in pink.

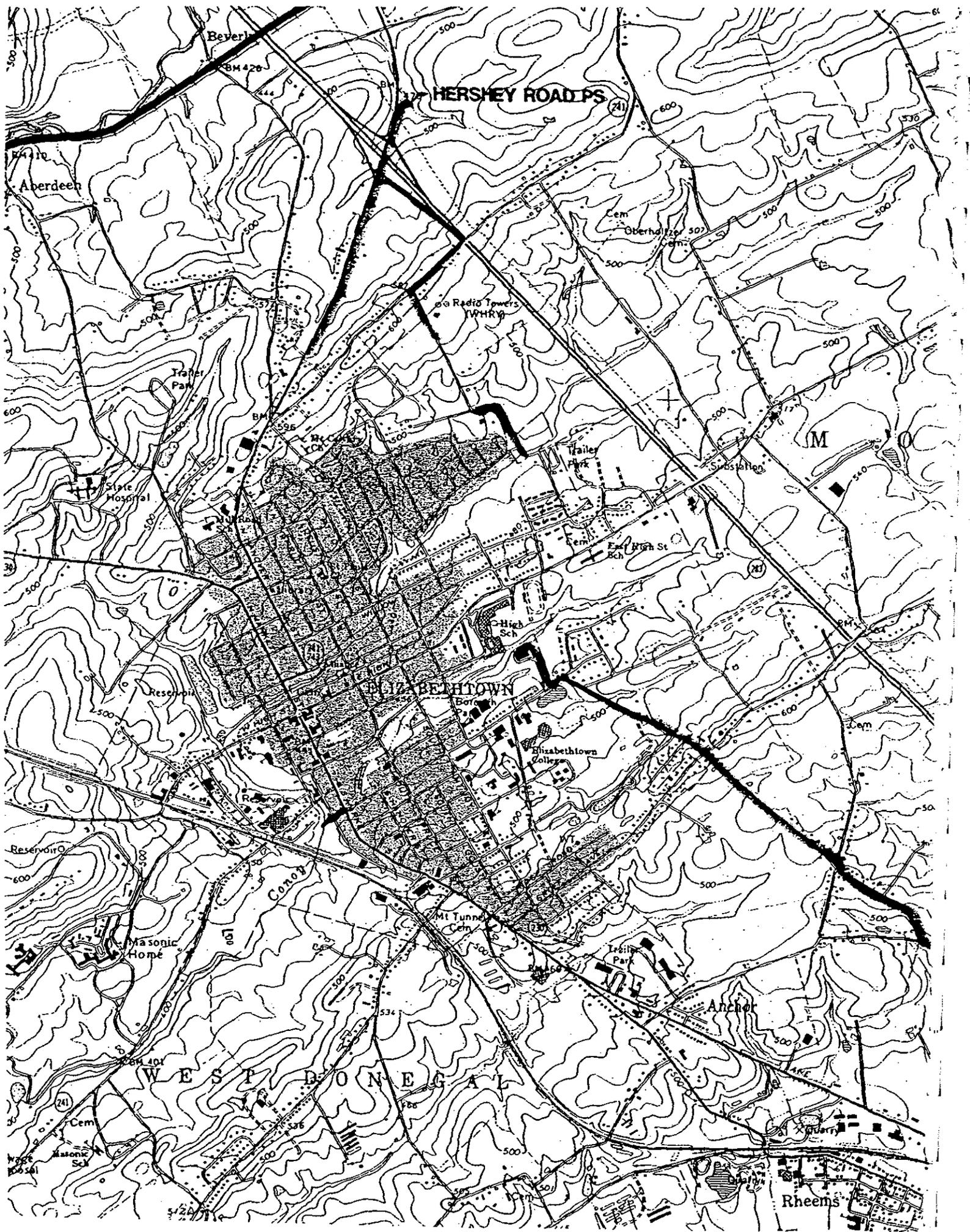
I sincerely appreciate your review of this project, and remain available should you need additional information or have questions or concerns.

Sincerely,



Michael S. Moulds, PE
Chief Engineer

Enclosures



ELIZABETHTOWN BOROUGH

600 SOUTH HANOVER STREET
ELIZABETHTOWN, PA 17022

BOROUGH OFFICE
(717) 367-1700
FAX (717) 367-6800

MEADE G. DIERLY
Council President

RECEIVED

FEB 21 1996

RETTEW ASSO., INC.

MEMORANDUM

TO: Mount Joy Township Authority
West Donegal Township Authority

FROM: Peter Whipple 

DATE: February 20, 1996

RE: Expansion/Upgrade Report

I am writing to inform you that the Elizabethtown Borough Council adopted the Wastewater Treatment Plant Expansion/Upgrade Report at its public meeting on February 15, 1996. This action follows a presentation made by Russ MacNair of Camp, Dresser & McKee at our work session in January. The Borough views this plan as a blueprint for the discussions and engineering design that will be necessary upon completion of the Act 537 Plan.

If you have any questions regarding this matter, please feel free to contact me at this office.

cc: Mount Joy Township Supervisors
West Donegal Township Supervisors
Russ MacNair
Mike Moulds ✓



MJTA

MOUNT JOY TOWNSHIP AUTHORITY

December 18, 1995

Barry Garman, Chairman
West Donegal Township Supervisors
7 West Ridge Road
Elizabethtown, PA 17022

157 MERTS DRIVE
ELIZABETHTOWN, PA 17022
717-367-0749
717-367-9208 (FAX)
Gary Roeder, Chairman
West Donegal Township Authority
7 West Ridge Road
Elizabethtown, PA 17022

RE: Act 537 Plan

Dear Barry and Gary:

On behalf of the Mount Joy Township Supervisors and Authority we are writing regarding the position of the West Donegal Township Board of Supervisors and Authority relative to the Act 537 planning process. We have all invested a considerable amount of time and money to plan for the future wastewater treatment needs of our municipalities. Unfortunately, as a group we are proceeding slowly with the decision making process.

As you are aware, Mount Joy Township has recently made a major investment in our new public water system and are in need of additional wastewater treatment capacity to be granted along with the newly developed water capacity. Mount Joy Township and Elizabethtown Borough are prepared to move forward with a decision relative to the treatment options for the joint Act 537 Plan.

We need your assistance to advise us when the West Donegal Township Boards will be prepared to act on this matter. Please forward a letter as soon as you have had an opportunity to review this communication with your Boards. We thank you for your continued cooperation and look forward to proceeding with this joint project.

Sincerely,

MOUNT JOY TOWNSHIP SUPERVISORS

MOUNT JOY TOWNSHIP AUTHORITY

Harvey E. Nauss, Jr.
Chairman

Charles G. Bailey, Jr.
Chairman

RETTEW

Associates, Inc.

3020 Columbia Avenue, Lancaster, PA 17603 • (717) 394-3721 • FAX (717) 394-1063

January 4, 1995

Mr. James Miller
Pennsylvania Department of Environmental Resources
Bureau of Water Quality Management
One Ararat Boulevard
Harrisburg, PA 17110

RE: Act 537 Plan
Mount Joy Township, Lancaster County
Project No. 901268-02

Dear Mr. Miller:

On behalf of Mount Joy Township, we are requesting preliminary stream discharge criteria for an alternative municipal wastewater effluent discharge into the Conewago Creek as a part of the 537 Plan alternatives analysis for Mount Joy Township. The treatment alternative is being evaluated to potentially treat flows from the adjacent municipalities of West Donegal Township, and Elizabethtown Borough, Lancaster County, and Londonderry and Conewago Townships in Dauphin County. In addition, it is anticipated that the existing treatment facility discharge from the Conewago Industrial Park (NPDES # PA 0080055) would be incorporated into this facility. The alternative discharge point is located on the upstream side of the Zeager Road bridge crossing of the Conewago Creek (LAT 40° 9' 35" LONG 76° 39' 52") as shown on the enclosed section of the Middletown USGS Map. Note that the discharge point is located downstream from the Elizabethtown Water System intake.

We are requesting preliminary discharge criteria for discharge flows of 0.5, 0.75 and 1.0 Million Gallons per Day to reflect a three stage expansion of the treatment facility to accommodate future growth in the area.

Should you have any questions, please do not hesitate to call.

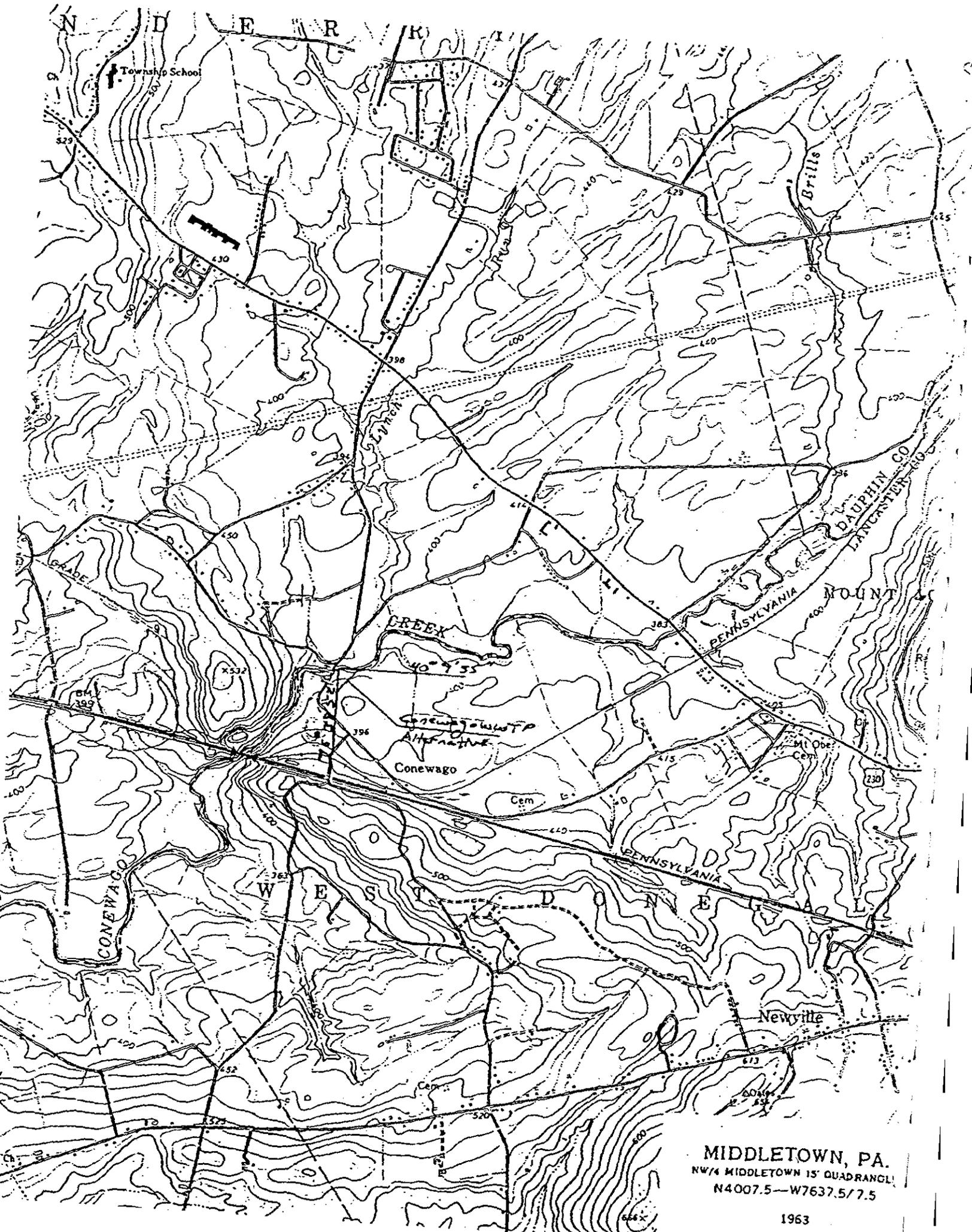
Sincerely,

Michael S. Moulds, PE
Project Manager

Enclosure

copy: Teresa Rismiller, Mount Joy Township Authority

eng\90126802.104\pzh



Township School

CREEK

Conewago

Newville

MIDDLETOWN, PA.
NW 1/4 MIDDLETOWN 15' QUADRANGLE
N4007.5-W7637.5/7.5

1963

1:62,500 NW CORNER V831



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
SOUTHCENTRAL REGION - FIELD OPERATIONS
Water Management Program
One Ararat Boulevard
Harrisburg, Pennsylvania 17110
(717) 657-4590
May 20, 1993

RECEIVED

MAY 24 1993

RETTEW ASSO., INC.

Mr. Michael S. Moulds, P.E.
Rettew Associates, Inc.
3020 Columbia Avenue
Lancaster, PA 17603

Re: Act 537 Planning (36002)
Plan of Study (Task/Activity Report)
Elizabethtown Area Regional
Elizabethtown Borough, Lancaster County

Dear Mr. Moulds:

We received a modified Plan of Study and Task Activity Report for preparation of an Act 537 Plan, submitted by Rettew Associates, Inc. under a cover letter dated February 16, 1993. The purpose of the modification is to incorporate a regional approach to Act 537 planning for Elizabethtown Borough, West Donegal and Mount Joy Townships.

Your Plan of Study has been approved by the Department for a total cost of \$102,724 beyond the previous approvals for Mount Joy and West Donegal Townships.

The resulting Act 537 Official Plans must be consistent with Act 537, Chapter 71, Sections 71.21 and 71.31 of DER Regulations, and with information contained in the DER Guide for Preparing Act 537 Update Revisions (November 1992). The guide contains a comprehensive Plan Content and Environmental Assessment Checklist detailing information required for a successful Act 537 Plan submission in Appendix I. This checklist is extremely important. Strict adherence to its contents minimizes the possibility of submitting an incomplete plan to the Department and incurring untimely project delay. A copy of this guide has been included with this letter. Additional copies of this document can be obtained from the Department.

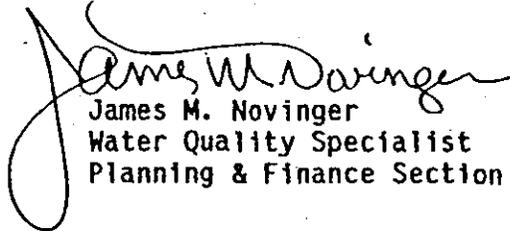


Mr. Michael S. Moulds, P.E.
May 20, 1993
Page 2

The Department administers post plan approval grants for up to 50% of the cost to municipalities for preparing Act 537 update revisions. Costs for completion of any planning activities outside the scope of the originally proposed plan, or costs in excess of those previously approved, are not automatically eligible for a 50% reimbursement. These additional costs must be submitted as Task/Activity Reports, receive Departmental approval, and must be within the scope of Act 537. Following adoption and Departmental approval of your completed Act 537 Plan, you will find, as part of the grant application, that you must submit cost invoices clearly identifying the task in the approved Task/Activity Report to which they apply.

If you have any questions, please contact me at the above address.

Sincerely,



James M. Novinger
Water Quality Specialist
Planning & Finance Section

JMN:v1b

cc: Russell MacNair, P.E., Camp, Dresser & McKee, Inc.
Dennis Michael, Camp, Dresser & McKee, Inc.
William T. Sprague, P.E.
Elizabethtown Borough
Mount Joy Township Supervisors
Mount Joy Township Sewer Authority
West Donegal Township
West Donegal Township Authority

RETTEW

Associates, Inc.

3020 Columbia Avenue, Lancaster, PA 17603 • (717) 394-3721 • FAX (717) 394-1063

February 16, 1993

Mr. Ed Corriveau, PE
Department of Environmental Resources
One Ararat Boulevard
Harrisburg, PA 17110

RE: Elizabethtown Area Regional
Act 537 Planning
Project No. 901268-01

Dear Ed:

As you are probably aware, both Mount Joy Township and West Donegal Township, Lancaster County are in the process of preparing Act 537 Plans. To date, these efforts have been ongoing independently.

Due to the concern with area growth and the fact that both municipalities rely on the facilities of Elizabethtown Borough for wastewater treatment, it has become apparent that there is a need to jointly work with Elizabethtown Borough to evaluate alternatives for regional expansion. A joint effort would allow a more accurate evaluation of regional alternatives and consider the advantages of sharing the cost of capitol improvements to meet the needs of each municipality.

As a result of several meetings between municipal officials from Elizabethtown Borough, Mount Joy Township, West Donegal Township and the municipal authorities of Mount Joy and West Donegal Townships, they are proposing the preparation of an Elizabethtown Area Regional Sewer Study. The purpose of this study is to identify and evaluate regional alternatives for addressing wastewater management needs in accordance with 537 planning.

The intent is to jointly participate in preparing a study that realistically evaluates regional alternatives to meet the needs of each municipality. The recommendations of the study will then be incorporated into each municipality's individual 537 Plan by references and/or appendix as a part of the overall alternatives evaluation required by Department of Environmental Resources (DER) for 537 planning.

Implementation of the regional planning effort has begun by the formation of a technical committee and regional steering committee. The technical committee is composed of representatives of the engineering consultant's for each of the participating municipalities. The technical committee membership is as follows:

Engineering Consultant

Representation

Michael Moulds, P.E. RETTEW Associates, Inc.

Mount Joy Township
Mount Joy Township
Authority

Russell MacNair, P.E. Camp Dresser & McKee Inc.

West Donegal Township
Authority

Dennis Michael, Camp Dresser & McKee Inc. Elizabethtown Borough

William T. Sprague, P.E.

West Donegal
Township

The technical committee will prepare and present information for review by the regional steering committee and subsequent consideration by each municipality.

A scope of work, time schedule and cost estimate has been prepared and reviewed with each municipality. The cost estimates have been broken down between work task and joint or individual municipal effort for each firm. Each municipality has demonstrated its support of the planning effort by adopting the attached letter of intent.

Critical to the implementation of the regional study and continuation of the 537 planning, is the support of DER to recognize this effort as an integral part of the 537 planning and agree to 50 percent funding reimbursement following individual municipal 537 plan approval.

In support of the funding request, we have attached a copy of the scope of work, time schedule and estimated cost breakdown. The cost estimate summary includes the estimated cost share for each municipality to fund the regional study effort and complete the 537 planning effort.

In consideration of this request by Elizabethtown Borough, West Donegal Township, and Mount Joy Township for funding approval, we would appreciate the opportunity to meet with you if necessary to discuss this unique approach in more detail.

As noted in the attached time schedule, we would like to begin work on the first phase of work as soon as possible. The municipalities are hesitant to commit to continuing the study

Page 3 of 3
Department of Environmental Resources
February 16, 1993
Project No. 901268-01

We would, therefore, appreciate your consideration of this request and look forward to hearing from you.

Sincerely,

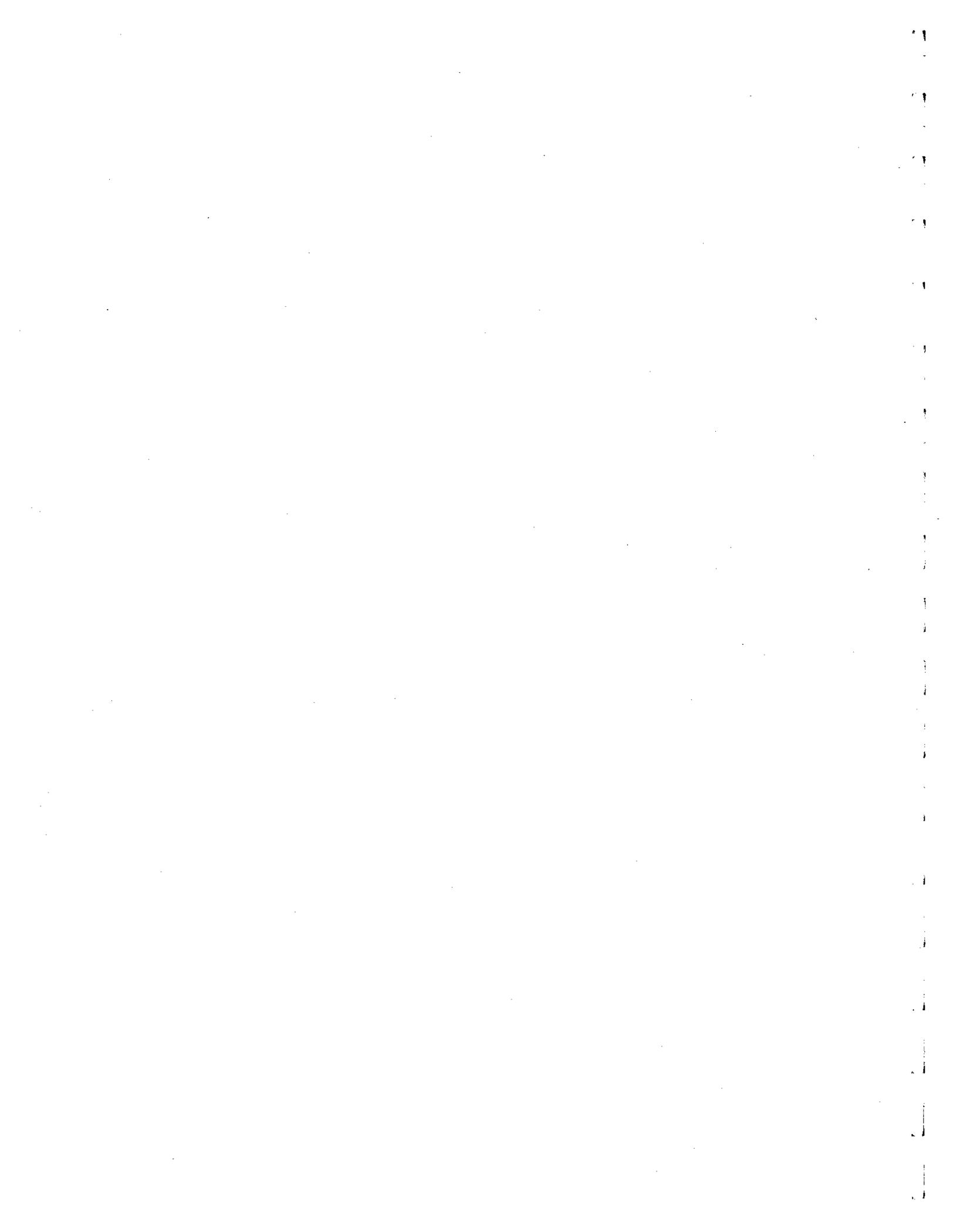


Michael S. Moulds, PE
Project Manager

ENG/wjk

copy: Elizabethtown Borough
Mount Joy Township
West Donegal Township
Russ MacNair/Dennis Michael, CDM
Bill Sprague

Attachments



**LETTER OF UNDERSTANDING
REGARDING
COOPERATION IN PRODUCTION OF
A REGIONAL ACT 537 PLAN**

WHEREAS, The Borough of Elizabethtown ("Borough") presently operates Elizabethtown Sewage Treatment Plant ("ESTP") which treats sewage flows from the Borough, Township of Mount Joy ("Mount Joy"), and the Township of West Donegal ("West Donegal"), hereinafter collectively referred to as "Municipalities"; and

WHEREAS, The Borough, Mount Joy, and West Donegal are each in the process of preparing Official Sewage Facilities Plans ("Act 537 Plans") for disposal of sewage generated within their corporate limits as required by the Pennsylvania Sewage Facilities Act ("Act") and regulations of the Pennsylvania Department of Environmental Resources ("PaDER"); and

WHEREAS, Because all three Municipalities discharge all or part of the sanitary sewage flows to the ESTP, the Municipalities desire to include a regional component within each of their Act 537 Plans to address matters relating to the ESTP and to the sewerage systems which collect and convey sewage flows from the Municipalities to the ESTP for treatment.

NOW, THEREFORE, the Borough, Mount Joy, and West Donegal agree as follows:

1. The Borough, Mount Joy, and West Donegal recognize the need for cooperation in development of the Act 537 Plans for the collection conveyance and disposal of sanitary sewage in all three Municipalities and, in particular, in use, and if necessary, expansion, of the sewerage system and the ESTP.
2. The Borough, Mount Joy, and West Donegal shall jointly prepare a regional Act 537 Plan component for inclusion with the submission of each Municipality's Act 537 to PaDER which shall address issues regarding to the ESTP and related sewerage systems.
3. The Borough, Mount Joy, and West Donegal shall allocate the necessary funding for preparation of the regional Act 537 Plan.
4. The Borough, Mount Joy and, West Donegal commit to the payment of the cost of preparation of the regional component of the Act 537 Plan in accordance with the cost estimate and work plan prepared by Camp, Dresser, & McKee, Inc., which is attached hereto as Appendix 'A' and incorporated herein. Each Municipality shall pay one-third of the costs associated with the work identified as "Estimated Costs (Joint)" on Appendix 'A' with the exception of the work entitled "Evaluate Conveyance System Capacity", of which one-half shall be paid by the Borough and one-half paid for by Mount Joy. The Borough, Mount Joy, and West Donegal shall enter into an agreement for the payment of such costs.
5. The Borough, Mount Joy, and West Donegal recognize that the preparation of a regional component to their Act 537 Plans is contingent upon the eligibility for reimbursement of the costs of the preparation of the regional component by PaDER. If PaDER determines that the preparation of a regional component of the Act 537 Plan is not eligible for the fifty (50%) percent cost reimbursement, the Municipalities shall have no obligations under this Letter of Understanding.

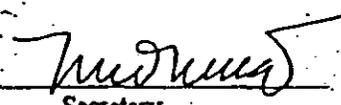
6. The Borough, Mount Joy, and West Donegal agree to proceed in good faith in preparation of the regional component of their Act 537 Plans, estimation of costs of preparation of the regional component, and negotiation of the required agreements.

IN WITNESS WHEREOF, the parties agree to this Letter of Understanding

This 1st day of February, 1993

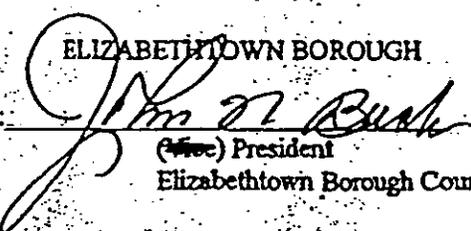
(SEAL)

Attest:


Secretary

By:

ELIZABETHTOWN BOROUGH


(Vice) President
Elizabethtown Borough Council

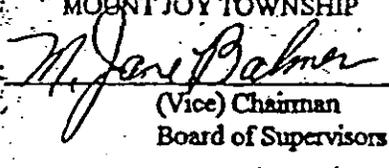
(SEAL)

Attest:


Secretary

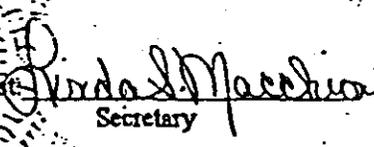
By:

MOUNT JOY TOWNSHIP


(Vice) Chairman
Board of Supervisors

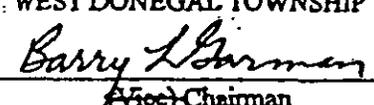
(SEAL)

Attest:


Secretary

By:

WEST DONEGAL TOWNSHIP


(Vice) Chairman
Board of Supervisors

ELIZABETHTOWN AREA

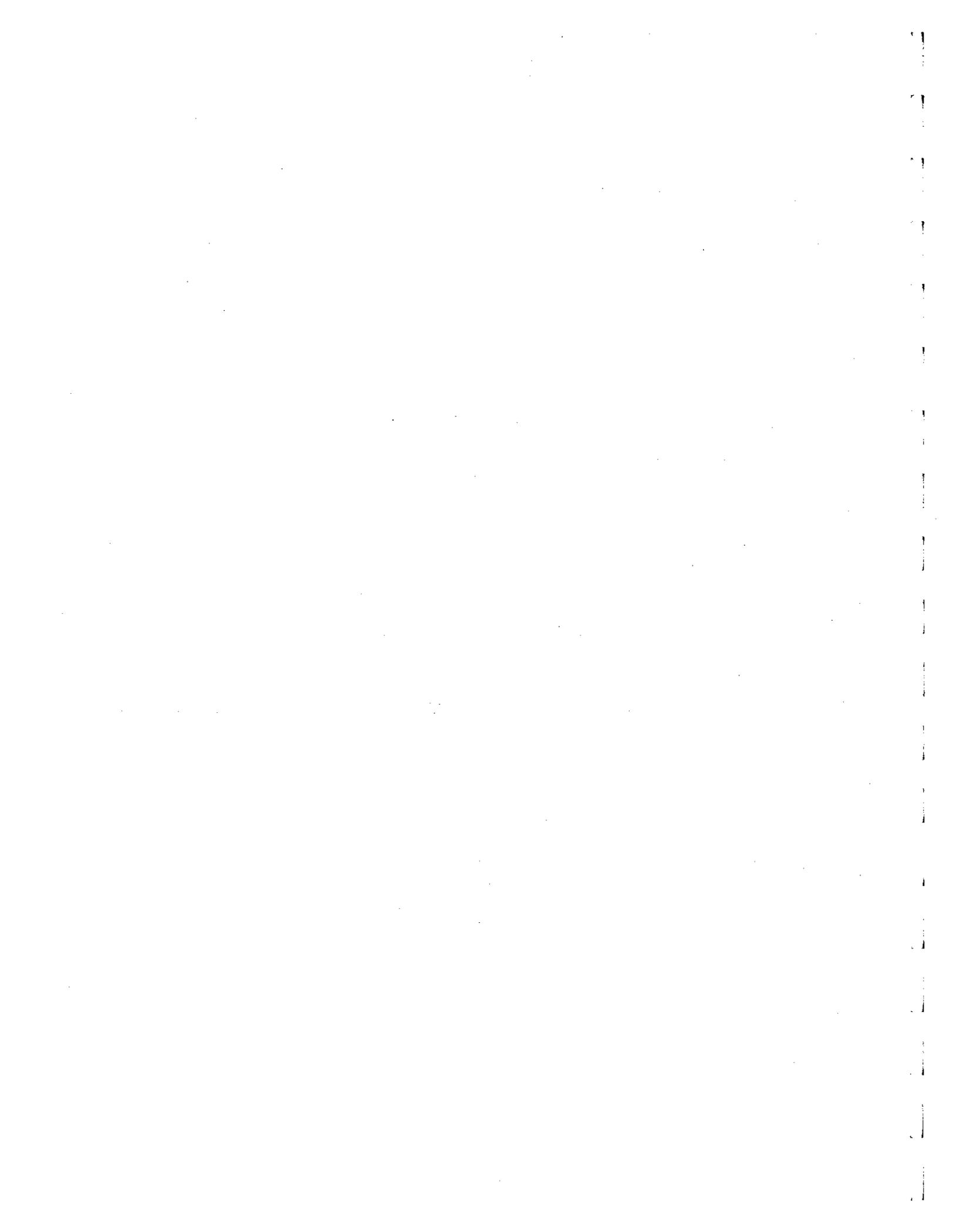
WORK PLAN FOR TECHNICAL COMMITTEE

1. Develop a scope of work for the activities to be performed by the Technical Committee. The scope should focus on future sewage treatment requirements of the Elizabethtown regional area.
2. Prepare a timetable for the work to be performed by the Technical Committee. Identify key milestone points and associated dates for completion.
3. Prepare a projected cost estimate for the work to be performed by the Technical Committee. The cost estimate should identify specific tasks to be performed jointly by the consultants and tasks to be performed solely by individual consultants for their respective municipalities.
4. Draft Letters of Intent to be executed by each of the municipalities outlining their willingness to be a participant in the regional planning effort.
5. Communicate with representatives of PADER to obtain approval of the scope of work and investigate potential funding options for the regional planning study.
6. Develop individual Township requests for additional interim sewage treatment capacity at the Elizabethtown Sewage Treatment Plant.
7. Evaluate the feasibility of granting the Township's requests for additional interim capacity to meet projected shortfalls during the planning period.
8. Review previous planning studies performed for the municipalities to extract useful background information and identify additional work to be performed.
9. Review population projections for the Elizabethtown Area service area to insure compatibility between the three municipalities.

10. Develop individual municipal requirements for long-term sewage treatment capacity.
11. Evaluate the specific requests for additional long-term sewage treatment capacity as presented by the Townships and establish the total sewage treatment requirements for the Elizabethtown area.
12. Review the hydraulic capacity of existing conveyance facilities to evaluate their capability of handling existing and projected flows. Evaluate the impact of infiltration/inflow on the remaining hydraulic capacity.
13. Evaluate the existing conditions at the Elizabethtown Sewage Treatment Facility and identify viable options for plant upgrading and/or expansion.
14. Identify alternatives for meeting future capacity needs for the Elizabethtown Area. Alternatives to include expansion/modification/re-permitting of the existing Elizabethtown Sewage Treatment Plant and construction of a satellite sewage treatment facility.
15. Communicate with representatives of PADER to solicit input on permitting requirements.
16. Perform an analysis of the alternatives including costs/benefits, staffing requirements, State and Federal regulations, financing options, and administration.
17. Consider potential regional administrative options for operation of the Elizabethtown Sewage Treatment Facility.
18. Provide assistance to the municipalities in the development of intermunicipal service agreements for implementation of the regional plan.
19. Develop a schedule for implementation of the regional plan recommendations.
20. Prepare the regional planning study final report.

21. Complete individual municipal Act 537 planning requirements.
22. Assist public officials in the development and implementation of a public relations plan.
23. Attend meetings of the Technical Committee throughout the study period.
24. Meet with the Steering Committee on a regular basis to relate status of the planning activities and obtain feedback.

5341/01/S.WORKPLAN.112



ELIZABETHTOWN AREA

REGIONAL SEWAGE FACILITIES PLANNING STUDY

PROJECT MILESTONES

<u>Activity</u>	<u>Date</u>
1. Final Draft of Work Plan, Schedule, and Cost Estimate by Tech. Committee	November, 1992
2. Steering Committee approval of Work Plan, Schedule, and Cost Estimate	December, 1992
3. Execution of Municipal Letters of Intent	January, 1993
4. Development of Interim Capacity Requests	February, 1993
5. Approval of Work Plan and Planning Assistance Grant by PADER	March, 1993
6. Borough Action on Interim Capacity Requests	April, 1993
7. Complete Background Planning including Population and Sewage Flow Projections	April, 1993
8. Municipal Approval of Background Planning	May, 1993
9. Complete Review and Analysis of Existing Treatment and Conveyance Facilities	June, 1993
10. Identification and Evaluation of Alternatives	August, 1993
11. Recommendation of Final Alternative(s)	September, 1993
12. Municipal Meetings for Presentation of Alternatives	October, 1993
13. Complete Draft of Act 537 Plan Addendum	December, 1993

14. Steering Committee Approval of Plan Addendum January, 1994
15. Complete Municipal Act 537 Plans February, 1994
16. Public Hearings on Municipal Act 537 Plans April, 1994
17. Municipal Adoption of Act 537 Plans and Submission to PADER June, 1994

5341/01/S.SCHEDULE.102

**PROJECT TIME LINE
ELIZABETHTOWN AREA REGIONAL
SEWAGE FACILITIES PLANNING STUDY**



ELIMINATION AREA

REGIONAL PLANNING STUDY

WOLF P.M. ROSENBERG

62-900-92

Task	Task	Primary Responsibility	Secondary Responsibility	Estimated Cost (Dollars)				Estimated Cost (Inflations)					
				E-106	W. Jay K. Bengel	Salari	E-106	W. Jay K. Bengel	E-106	W. Jay K. Bengel			
1. Develop Scope of Work		Joint		887	887	887	12,000	10	10	10	887	887	887
2. Prepare Memorandum		Joint		477	477	477	1,100	1	1	1	477	477	477
3. Prepare Cost Estimate		Joint		412	412	412	1,200	0	0	0	412	412	412
4. Draft Letters of Intent		Support	Letter, CR	0	0	0	0	300	100	120	300	100	120
5. Communications with PDDB		Letter	Support, CR	100	100	100	1,100	1	0	0	100	100	100
6. Develop Interstate Capacity Requests		Letter, Support		0	0	0	0	0	100	120	0	100	120
7. Analyze Interstate Capacity Requests		CR		107	107	107	1,220	0	0	0	107	107	107
8. Review Planning Studies		Support	Letter, CR	0	0	0	0	110	120	120	110	120	120
9. Review Population Projections		Support	Letter, CR	517	517	517	1,700	0	100	120	517	1,107	1,107
10. Develop long-Term Capacity Needs		Joint		0	0	0	0	2,220	1,210	1,300	2,220	1,210	1,300
11. Evaluate long-Term Capacity Needs		CR	Letter, Support	170	170	170	2,510	0	0	0	170	170	170
12. Evaluate Converter Station Capacity		CR		17,500	17,500	0	35,200	0	1,100	0	17,500	18,600	0
13. Evaluate E-Flow STB Response Options		CR		2,412	2,412	0	10,120	0	0	0	2,412	2,412	2,412
14. Identify Future Capacity Alternatives		CR	Letter	4,527	4,527	4,527	13,340	0	0	0	4,527	4,527	4,527
15. Solicit PDDB Input on Permitting		CR	Letter	524	524	524	1,572	0	0	0	524	524	524
16. Perform Analysis of Alternatives		CR		4,354	4,354	4,354	12,173	0	1,575	1,510	4,354	5,829	5,829
17. Coordinate Regional Ideas, Options		Joint		719	719	719	2,247	0	0	0	719	719	719
18. Analyze with Regional Agencies		Joint		0	0	0	0	2,220	250	200	2,220	250	200
19. Develop Implementation Schedule		Joint		323	323	323	959	0	1	0	323	323	323
20. Prepare Regional Planning Study		Joint		2,114	2,114	2,114	6,133	0	345	361	2,114	2,459	2,459
21. Complete del STB Planning Documents		Joint		0	0	0	0	1,700	5,590	6,290	1,700	8,990	8,990
22. Analyze with Public Involvement Plan		Joint		2,550	2,550	2,550	7,600	0	0	0	2,550	2,550	2,550
23. Attend Technical Committee Meetings		Joint		0	0	0	0	7,410	3,500	2,428	1,670	3,500	2,428
24. Attend Steering Committee Meetings		Joint		0	0	0	0	5,320	2,000	1,661	3,320	2,000	1,661
				110,100	110,100	323,500	1,010,724	123,510	322,250	319,201	355,410	322,250	341,212

1,010,724



RECEIVED
FEB 11 1990
RETTEW ASSO. INC.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT
Harrisburg Regional Office
One Ararat Boulevard
Harrisburg, Pennsylvania 17110
(717) 657-4590
July 11, 1990

COPY

Mount Joy Township
159 Merts Drive
Elizabethtown, PA 17022

Re: 537 Planning
Mount Joy Township, Lancaster County

Gentlemen:

The Department of Environmental Resources has reviewed the Plan of Study which you submitted and has found that it generally follows the "Guide for Municipal Officials in Preparing Official Sewage Plans" (Guide) and Chapter 71 of the Rules and Regulations of the Department of Environmental Resources. When reviewing your Plan, the Department will expect the Guide to be more thoroughly utilized.

The completion of your Act 537 Plan and its approval by the Department entitles you, under Section 6 of the Act, to a reimbursement of 50% of the costs of the Plan's preparation.

If you have any questions concerning this letter, please contact me at this office.

Sincerely,

Robert S. Edwards
Sanitarian Sewage Specialist
Harrisburg Regional Office

RSE:tlb

