



APPENDIX K
APPROVED TASK ACTIVITY REPORT



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VIA HAND DELIVERY

March 23, 2018

Mr. Michael Morris
Pennsylvania Department of Environmental Protection
909 Elmerton Avenue
Harrisburg, Pennsylvania 17110

Re: Halifax Township Act 537 Plan
Task Activity Report (TAR)

Dear Mr. Morris:

Per your direction, Herbert, Rowland & Grubic, Inc. (HRG) is commencing work on completing the Act 537 Plan for Halifax Township, Dauphin County. The Plan Area will include the entire Township.

We anticipate the Plan will be submitted to DEP in December 2018 following the required municipal and public comment periods. Attached are the Plan of Study and Preliminary Cost Worksheet for Act 537 Plan (TAR).

Please review the attached information at your earliest convenience. If you have any questions, please call me. Thank you for your timely consideration of this matter.

Very truly yours,

Herbert, Rowland & Grubic, Inc.

Cory J. Salmon, E.I.T.

CJS/rb

002838.0426

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Enclosure

c: Halifax Township Board of Supervisors (w/Encl.)
File (w/Encl.)



Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

AN EMPLOYEE-OWNED COMPANY

**369 East Park Drive
Harrisburg, PA 17111
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MARCH 2018

**PLAN OF STUDY & TASK ACTIVITY REPORT
ACT 537 SEWAGE FACILITY PLAN**

**HALIFAX TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA**

HRG Project No. 002838.0426

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- Appendix B: Act 537 Plan Content and Environmental Assessment Checklist
- Appendix C: Preliminary Cost Worksheet for Act 537 Plan Update

INTRODUCTION AND PROJECT SCHEDULE

A. Introduction

Halifax Township (Township) wishes to update and submit its Act 537 Sewage Facilities Plan (Plan). The original Act 537 Planning for the Township was prepared in Draft form in 2008 by Kurowski & Wilson, LLC, but was never formally adopted by the Township or submitted to the Pennsylvania Department of Environmental Protection (PADEP). Herbert, Rowland & Grubic, Inc. (HRG) is commencing work to update and complete the Township's Act 537 Plan. The planning area for the proposed Act 537 Plan is Halifax Township in its entirety.

There is an abundance of residences within the Township that utilize on-lot disposal systems (OLDS) for sewage disposal. Approximately 1,002 residences within the Township utilize OLDS for sewage disposal. The Matamoras Area is one area of the Township where the need for new or improved wastewater service is desired to be evaluated the Township. Additionally, the Township desires to identify any other areas which are served by OLDS where new or improved wastewater service should be considered.

The Township currently has five (5) sewerage systems which include: the Halifax Area Water and Sewer Authority's collection and conveyance system and wastewater treatment plant (the wastewater treatment plant is located in Halifax Borough); the Strohecker Mobile Home Park's collection and conveyance system and wastewater treatment plant; the Alex Acres Mobile Home Park's collection and conveyance system and wastewater treatment plant; Camp Hebron's collection and conveyance system and wastewater treatment plant; and the Lenker Estates collection and conveyance system and wastewater treatment plant. The evaluation of alternatives for new or improved wastewater service in these areas of the Township be included in the Plan. The Plan will additionally evaluate the remaining portions of the Township served by OLDS and identify a strategy for OLDS Management.

This plan of study identifies how the Plan will be completed, as well as the projected schedule and cost. The attached Task Activity Report (TAR) is not meant to replace the existing TAR, however it is being submitted as an addition to the existing TAR in order for all planning to remain eligible for reimbursement. The Act 537 Plan will be completed in accordance with *The Pennsylvania Sewage Facilities Act – A Guide for Preparing Act 537 Update Revisions (latest version)*. The *Act 537 Plan Content and Environmental Assessment Checklist* (copy attached) will be utilized during Plan preparation.

B. Project Schedule

Submit Task Activity Report (TAR) to DEP	March 2018
Receive TAR Approval from DEP	April 2018
Begin Work on the Act 537 Plan	April 2018
Submit Draft of Act 537 Plan to Halifax Township	September 2018
Submit Draft of Act 537 Plan to (Municipal and County) Planning Agencies, PHMC and PNDI	October 2018
Advertise for 30-day Public Comment and Conduct Public Hearing	October 2018
Incorporate Comments into Plan/ Revise Document	November 2018
Township Adoption of Plan and Submission to DEP	December 2018

I. PREVIOUS WASTEWATER PLANNING

A. Identify and Analyze Existing Wastewater Planning

The original Act 537 Planning for Halifax Township was prepared in Draft form in 2008 by Kurowski & Wilson, LLC. The documents within the original Draft Plan will be reviewed and incorporated into the Final Halifax Township Act 537 Plan. The contents of this original Draft Plan will be used as much as possible during the completion of this Final Halifax Township Act 537 Plan.

B. Identify and Summarize Planning Documents Adopted Pursuant to the Pennsylvania Municipal Planning Code

The Dauphin County Comprehensive Plan, Halifax Township Subdivision and Land Development Ordinance, Halifax Township Comprehensive Plan, Holding Tank Ordinance, Privy Ordinance, and Sewage Facilities Ordinance will be reviewed during the preparation of the Act 537 Plan and issues relative to wastewater planning will be included in the Plan.

II. PHYSICAL AND DEMOGRAPHIC ANALYSIS

A. Identification of Planning Areas

The Plan will encompass Halifax Township in its entirety. The Plan will include an evaluation of wastewater disposal options for areas identified to have potential needs. The Matamoras Area has been identified by the Township and by PADEP as a potential needs area. The Plan will evaluate Areas of the Township which will receive future sewer service to the Halifax Area Water and Sewer Authority's sewer system. The original Draft Plan will be utilized to assist in the identification and evaluation of other areas identified as potential needs areas.

B. Preparation of Maps

The existing mapping completed as part of the original Draft Plan in 2008 will be utilized as much as possible to create necessary maps for the Plan in accordance with Sections II and III of the *Act 537 Plan Content and Environmental Assessment Checklist*.

III. EXISTING SEWAGE FACILITIES

A. Identify, Map, and Describe Municipal and Non-Municipal, Community, and Individual Systems

The majority of properties in the Township utilize OLDS as the primary method of wastewater treatment. There are five (5) sewerage systems within Halifax Township. The sewerage systems contain collection and conveyance systems as well as wastewater treatment plants for: the Halifax Area Water and Sewer Authority, the Strohecker Mobile Home Park, the Alex Acres Mobile Home Park, Camp Hebron, and the Lenker Estates.

A description of all wastewater facilities within the Township will be included in the Plan. Descriptions will include: ownership, capacity, point of discharge, existing problems, and scheduled or in-progress upgrades or expansions.

The Township does not currently have a formal OLDS Management Program, but the Township does have an existing Holding Tank Ordinance, Privy Ordinance, and Sewage Facilities Ordinance that will be reviewed as part of the preparation of the Plan. The Plan will additionally outline the Township's strategy and proposed schedule for developing and

implementing a formal OLDS Management Program. A draft outline of requirements relative to the Program will be provided as part of the Plan.

B. Determine the Type and Investigate the Condition of Existing OLDS

Sanitary Sewage Surveys and Well Water Surveys were conducted by Kurowski & Wilson, LLC as part of the completion of the original Draft Plan. The results from the Sanitary Sewage Surveys, Well Water Surveys, and SEO reported malfunctions will be reviewed and summarized in context with the Soils and Slopes Maps. The summary will identify properties with confirmed, suspected, potential, and no malfunctions and the locations of these properties will be presented on maps of the Township. HRG will re-evaluate up to 10% of the previously conducted Well Water Surveys and Sanitary Sewage Surveys (approximately 25 each) to verify that the current data is consistent with the data provided in the original Draft Plan.

IV. FUTURE GROWTH AND DEVELOPMENT

The Halifax Township Comprehensive Plan, along with work previously completed during the preparation of the draft Act 537 plan, will be used to identify future land use, projected growth, and development areas, including both residential and commercial/industrial development. Projected population and sewage flows will be estimated and used by the Halifax Area Water and Sewer Authority to examine the feasibility and cost of proposed wastewater treatment alternatives.

V. ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES

The Matamoras Area will be a priority area of focus for evaluated alternatives as part of the Plan preparation. Alternatives to be evaluated during the plan preparation include:

1. No Action.
2. Increased OLDS/Decentralized System Management.
3. Community On-lot Disposal Systems (COLDS).
4. Extension of new public sewers with connection to the Halifax Area Water and Sewer Authority's System.

These alternatives will be evaluated during Plan preparation. Additional alternatives may be identified an evaluated during Plan preparation.

Remaining portions of the Township served outside of the Matamoras Areas will be evaluated based on information provided in the original Draft Plan, historical SEO records, general suitability for OLDS (if applicable), and the Sanitary Sewage Surveys and Well Water Surveys. Alternatives to be evaluated during the plan preparation for these other areas include:

1. No Action.
2. Increased OLDS/Decentralized System Management.
3. Alternative Wastewater Disposal Methods such as Small Flow Treatment Facilities.
4. Community On-lot Disposal Systems (COLDS).
5. Extension of public sewers with connection to the Halifax Area Water and Sewer Authority's System.

These alternatives will be evaluated during Plan preparation. Additional alternatives may be identified an evaluated during Plan preparation.

VI. EVALUATION OF ALTERNATIVES

A. Consistency

Technically feasible alternative(s) will be evaluated for consistency with respect to the following:

1. Applicable plans developed and approved under Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act.
2. Municipal wasteload management plans.
3. Applicable plans developed under Title II of the Clean Water Act or Titles II and VI of the Water Quality Act of 1987.
4. The Halifax Township and Dauphin County Comprehensive Plans.
5. Anti-degradation requirements as contained in PA Code, Title 25, Chapter 93, 95, and 102.

6. State Water Plans.
7. Pennsylvania Prime Agricultural Land Policy.
8. Act 167 Stormwater Management Plans.
9. Wetland protection regulations.
10. Rare, endangered, or threatened plant and animal species protection regulations.
11. Historical and archaeological resource protection requirements.

B. Cost Evaluation

Technically feasible alternative(s) will be evaluated based on cost effectiveness. The 20-year present worth for construction, financing, administration, operation and maintenance of the technically feasible alternative(s) will be calculated and evaluated. An analysis of the funding methods available to finance the proposed alternatives evaluated will be provided in the Plan. The need for phased implementation of each alternative will be analyzed and discussed in the Plan.

C. Coordination

Meetings will be required with the Halifax Township Sewer Committee, Halifax Area Water and Sewer Authority, existing commercial entities, and proposed developers and commercial entities throughout Plan preparation, and specifically during the evaluation of alternatives.

VII. INSTITUTIONAL EVALUATION

During Plan preparation the ordinances, regulations, inter-municipal agreement(s) and other legal and administrative measures necessary to implement the selected technical alternative(s) will be identified. The Halifax Area Water and Sewer Authority will be evaluated for financial and administrative resources necessary to implement and fund the selected alternative(s) identified in the Plan.

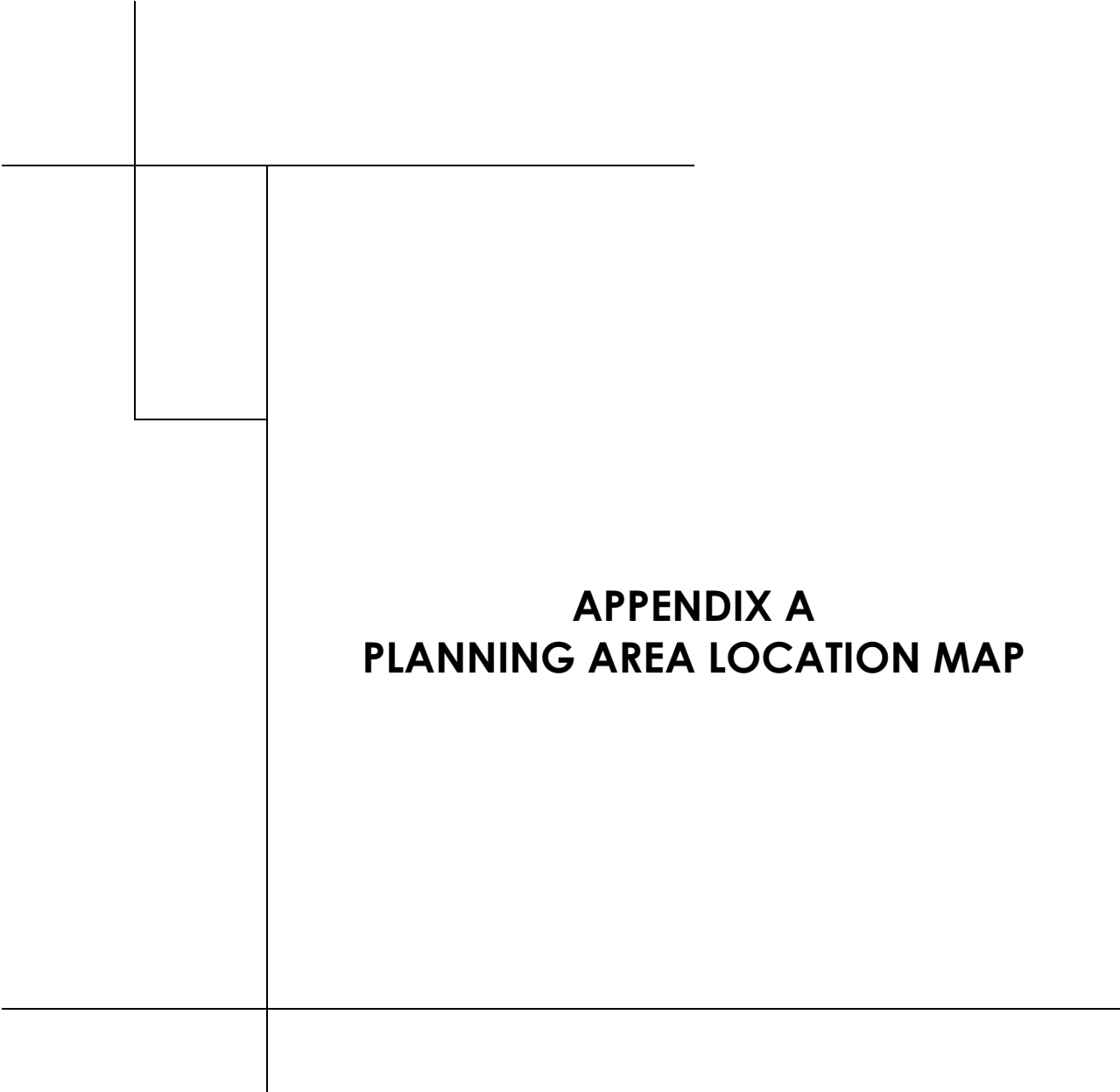
VIII. IMPLEMENTATION SCHEDULE AND JUSTIFICATION
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The most technically and economically feasible alternative(s) will be determined based on existing and future wastewater disposal needs, operation and maintenance, cost-effectiveness, available

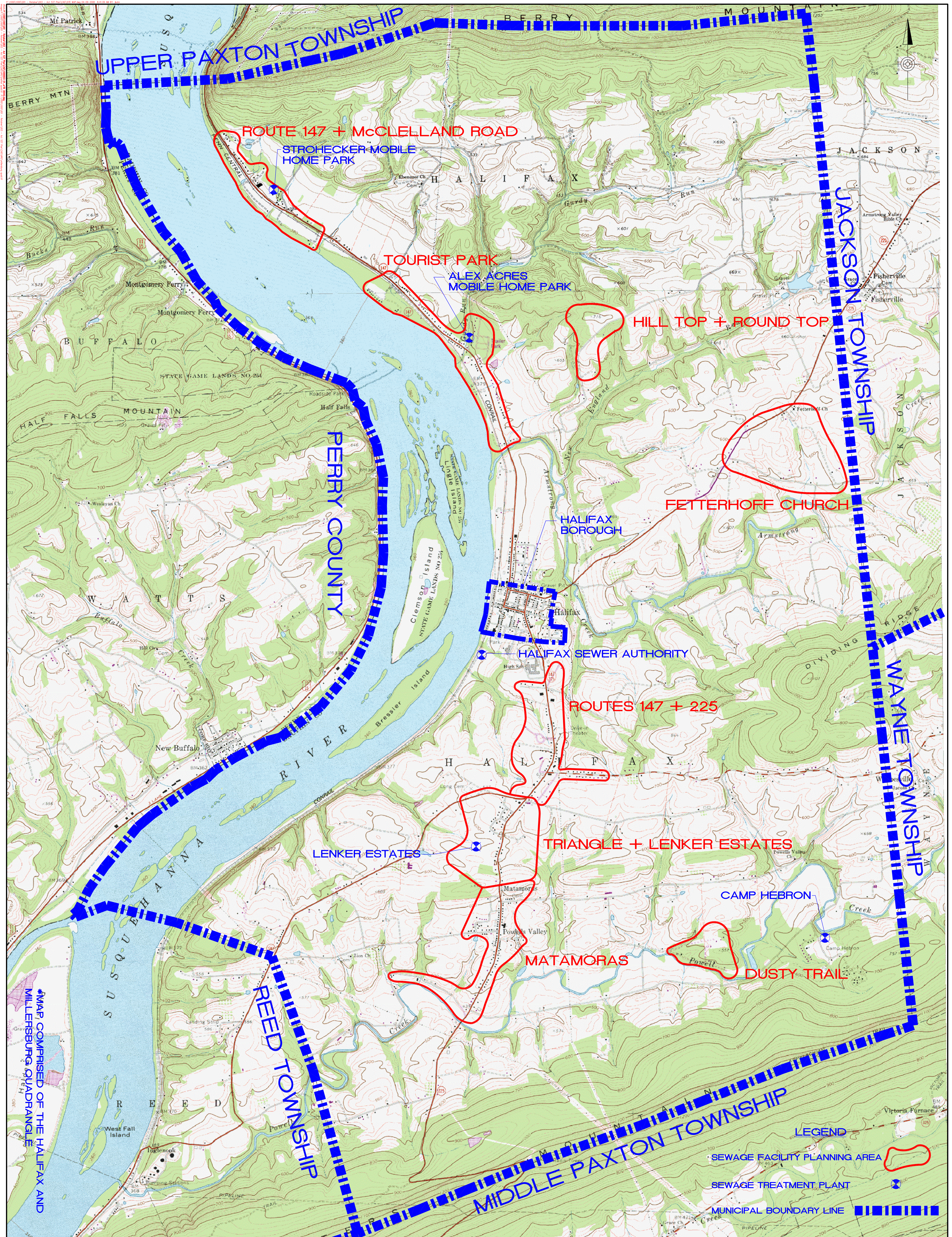
management, available financing, and environmental considerations. A schedule for implementation of the selected alternative(s) will be provided in the Plan.

IX. ENVIRONMENTAL REPORT (ER)

Due to potential PENNVEST funding for selected alternative(s) identified in the Plan, an Environmental Report (ER) generated from the Uniform Environmental Review (UER) process will be prepared as part of the Plan. The ER will be prepared in accordance with *DEP technical guidance 381-5511-111*.



**APPENDIX A
PLANNING AREA LOCATION MAP**



*MAP COMPRISED OF THE HALIFAX AND MILLERSBURG QUADRANGLES

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		

PROFESSIONAL SEAL
 SCALE: AS SHOWN
 DATE: 10/20/2011
 DRAWN BY: JLS
 CHECKED BY: JLS



**APPENDIX B
ACT 537 PLAN CONTENT AND
ENVIRONMENTAL ASSESSMENT CHECKLIST**



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

INSTRUCTIONS FOR COMPLETING ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

Remove and recycle these instructions prior to submission.

CHECKLIST INSTRUCTIONS

These instructions are designed to assist the applicant in completing the *Act 537 Plan Content and Environmental Assessment Checklist*.

This checklist is composed of three parts: one for "General Information," one for "Administrative Completeness," and one for "General Plan Content". A plan must be **administratively complete** in order to be formally reviewed by the Department of Environmental Protection (DEP). The "General Plan Content" portion of the checklist identifies each of the issues that must be addressed in your Act 537 Plan Update based on the pre-planning meeting between you and/or your consultant and DEP.

Use the right-hand column blanks in the checklist to identify the page in the plan on which each planning issue is found or to reference a previously approved update or special study (title and page number).

If you determine a planning issue is not applicable even though it was previously thought to be needed, please explain your decision within the text of the plan (or as a footnote) and indicate the page number where this documentation is found.

When information required as part of an official plan update revision has been developed separately or in a previous update revision, incorporate the information by reference to the planning document and page.

For specific details covering the Act 537 planning requirements, refer to 25 Pa. Code Chapters 71 and 73 of DEP's regulations.

Wastewater projects proposing funding through the following sources must prepare an "Environmental Report" as described in the Uniform Environmental Review (UER) process and include it with the plan submission designated as "Plan-Appendix A". The following funding programs use the UER process.

- The Clean Water State Revolving Loan Fund (PENNVEST, DEP, EPA)
- The RUS Water and Waste Disposal Grant and Loan Program (USDA-RD)
- The Community Development Block Grant Program (DCED, HUG)
- Other Federal Funding Efforts (EPA)

The checklist items or portions of checklist items required in the Act 537 Plan Update revision and that are also included in the UER process are indicated by **shading**. Most of the "Environmental Report" document may be constructed from the Act 537 Official Plan Update revision by using "copy & paste" techniques. The technical guidance document *Guidelines for the Uniform Environmental Review Process in Pennsylvania* (381-5511-111) is available electronically in DEP's eLibrary online at www.dep.pa.gov.

After Municipal Adoption by Resolution, submit 3 copies of the plan, any attachments or addenda and this checklist to DEP.

A copy of this completed checklist must be included with your Act 537 plan. DEP will use the "DEP USE ONLY" column during the completeness evaluation of the plan. This column may also be used by DEP during the pre-planning meeting with the municipality to identify planning elements that are not required to be included in the plan.



ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

PART 1 GENERAL INFORMATION

A. Project Information

1. Project Name Halifax Township Act 537 Sewage Facility Plan
2. Brief Project Description Study of sewage facility needs within the Township.

B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
Halifax Township	Dauphin	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Bechtel	Ken			Chairman, Township Board of Supervisors
Additional Individual Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1 102 Fisher Street	Mailing Address Line 2	
Address Last Line -- City Halifax	State ZIP+4 PA 17032	
Phone + Ext. 717-896-3035	FAX (optional) 717-896-2904	Email (optional) halifaxtownship@comcast.net

C. Site Information

Site (or Project) Name Halifax Township	(Municipal Name) Act 537 Plan
Site Location Line 1	Site Location Line 2

D. Project Consultant Information

Last Name Salmon	First Name Cory	MI J	Suffix E.I.T.
Title Water and Wastewater Staff Professional	Consulting Firm Name Herbert Rowland & Grubic, Inc.		
Mailing Address Line 1 369 East Park Drive	Mailing Address Line 2		
Address Last Line -- City Harrisburg	State PA	ZIP+4 17111	Country USA
Email csalmon@hrg-inc.com	Phone + Ext. 717-564-1121	FAX 717-564-1158	

PART 2 ADMINISTRATIVE COMPLETENESS CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	In addition to the main body of the plan, the plan must include items one through eight listed below to be accepted for formal review by DEP. Incomplete plans may be denied unless the municipality is clearly requesting an advisory review.
_____	_____	1. Table of Contents
_____	_____	2. Plan Summary
_____	_____	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - 25 Pa. Code §71.21(a)(7)(i)).
_____	_____	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference - 25 Pa. Code §71.21(a)(7)(ii)).
_____	_____	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference - 25 Pa. Code §71.21(a)(7)(ii)).
_____	_____	D. Identify the municipal commitments necessary to implement the Plan. (Reference - 25 Pa. Code §71.21(a)(7)(iii)).
_____	_____	E. Provide a schedule of implementation for the project that identifies the major milestones with dates necessary to accomplish the project to the point of operational status. (Reference - 25 Pa. Code §71.21(a)(7)(iv)).
_____	_____	3. Municipal Adoption: <i>Original</i> , signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference - 25 Pa. Code §71.31(f)) Section V.F. of the Planning Guide.
_____	_____	4. Planning Commission / County Health Department Comments: Evidence that the municipality has requested, reviewed and considered comments by appropriate official planning agencies of the municipality, planning agencies of the county, planning agencies with area wide jurisdiction (where applicable), and any existing county or joint county departments of health. (Reference - 25 Pa. Code §71.31(b)) Section V.E.1 of the Planning Guide.
_____	_____	5. Publication: Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30-day comment period. (Reference - 25 Pa. Code §71.31(c)) Section V.E.2 of the Planning Guide.
_____	_____	6. Comments and Responses: Copies of <i>all</i> written comments received and municipal response to <i>each</i> comment in relation to the proposed plan. (Reference - 25 Pa. Code §71.31(c)) Section V.E.2 of the Planning Guide.
_____	_____	7. Implementation Schedule: A complete project implementation schedule with milestone dates specific for each existing and future area of need. Other activities in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference - 25 Pa. Code §71.31(d)) Section V.F. of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference - 25 Pa. Code §71.21(c)).
_____	_____	8. Consistency Documentation: Documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 25 Pa. Code §71.21.(a)(5)(i-iii). (Reference - 25 Pa. Code §71.31(e)). Appendix B of the Planning Guide.

PART 3 GENERAL PLAN CONTENT CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	Item Required
_____	_____	I. Previous Wastewater Planning
_____	_____	A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
_____	_____	1. Previously undertaken under the Pennsylvania Sewage Facilities Act (Act). (Reference - Act 537, 35 P.S. §750.5(d)(1)).
_____	_____	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A-D)). Section V.F of the Planning Guide.
_____	_____	3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A&B)). Section V.D. of the Planning Guide.
_____	_____	4. Through planning modules for new land development, planning “exemptions” and addenda. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A)).
_____	_____	II. Physical and Demographic Analysis utilizing written description and mapping (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
_____	_____	A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference – 25 Pa. Code §71.21(a)(1)(i)).
_____	_____	B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference - 25 Pa. Code §71.21(a)(1)(ii)).
_____	_____	C. Soils - Analysis with description by soil type and soils mapping for areas not presently served by sanitary sewer service. Show areas suitable for in-ground onlot systems, elevated sand mounds, individual residential spray irrigation systems (IRSIS), and areas unsuitable for soil dependent systems. (Reference - 25 Pa. Code §71.21(a)(1)(iii)). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference - 25 Pa. Code §71.21(a)(1)(iii)).
_____	_____	D. Geologic Features - (1) Identification through analysis, (2) mapping and (3) their relation to existing or potential nitrate-nitrogen pollution and drinking water sources. Include areas where existing nitrate-nitrogen levels are in excess of 5 mg/L. (Reference - 25 Pa. Code §71.21(a)(1)(iii)).
_____	_____	E. Topography - Depict areas with slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for onlot systems. (Reference - 25 Pa. Code §71.21(a)(1)(ii)).
_____	_____	F. Potable Water Supplies - Identification through mapping, description and analysis. Include public water supply service areas and available public water supply capacity and aquifer yield for groundwater supplies. (Reference - 25 Pa. Code §71.21(a)(1)(vi)). Section V.C. of the Planning Guide.
_____	_____	G. Wetlands-Identify wetlands as defined in 25 Pa. Code Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per the United States Department of Agricultural (USDA) Natural Resources Conservation Service (NRCS) mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference - 25 Pa. Code §71.21(a)(1)(v)). Appendix B, Section II.I of the Planning Guide.

_____ III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs

_____ A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:

- _____ 1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference - 25 Pa. Code §71.21(a)(2)(i)(A)).
- _____ 2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's National Pollutant Discharge Elimination System (NPDES) permitted capacity, and the Clean Streams Law permit number. (Reference - 25 Pa. Code §71.21(a)(2)(i)(A)).
- _____ 3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under 25 Pa. Code Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference - 25 Pa. Code §71.21(a)(2)(i)(B)).
- _____ 4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(i & ii)).
- _____ 5. A detailed description of the municipality's operation and maintenance (O & M) requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs (SMPs). (Reference - 25 Pa. Code §71.21(a)(2)(i)(C)).
- _____ 6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference - 25 Pa. Code §71.21(a)(4)(i & ii)).

_____ B. Using DEP's publication titled *Act 537 Sewage Disposal Needs Identification* (3800-BK-DEP1949), identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:

- _____ 1. The types of onlot systems in use. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(A)).
- _____ 2. A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Act, the Clean Stream Law or regulations promulgated thereunder. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(B)).
- _____ 3. A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and 25 Pa. Code Chapter 73 (relating to standards for sewage disposal facilities). (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)).
- _____ 4. An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's *Act 537 Sewage Disposal Needs Identification* publication. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(B)).

- _____ 5. Detailed description of O & M requirements of the municipality for individual and small volume community onlot systems, including the status of past and present compliance with these requirements and any other requirements relating to SMPs. (Reference - 25 Pa. Code §71.21(a)(2)(i)(C)).
- _____ C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:
 - _____ 1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference – 25 Pa. Code §71.71).
 - _____ 2. Quantities of the types of sludges or septage generated. (Reference - 25 Pa. Code §71.71).
 - _____ 3. Present disposal methods, locations, capacities and transportation methods. (Reference - 25 Pa. Code §71.71).

_____ **IV. Future Growth and Land Development**

- _____ A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
 - _____ 1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference - 25 Pa. Code §71.21(a)(3)(iv)).
 - _____ 2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference – 25 Pa. Code §71.21(a)(3)(iv)).
 - _____ 3. All limitations and plans related to floodplain and stormwater management and special protection (25 Pa. Code Chapter 93) areas. (Reference - 25 Pa. Code §71.21(a)(3)(iv)) Appendix B, Section II.F of the Planning Guide.
- _____ B. Delineate and describe the following through map, text and analysis.
 - _____ 1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of equivalent dwelling units (EDUs) in development, total number of EDUs currently developed and total number of EDUs remaining to be developed (include time schedule for EDUs remaining to be developed). (Reference - 25 Pa. Code §71.21(a)(3)(i)).
 - _____ 2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas. (Reference - 25 Pa. Code §71.21(a)(3)(ii)). Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference - 25 Pa. Code §71.21(a)(3)(iv)).
 - _____ 3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference - 25 Pa. Code §71.21(a)(1)(iv) and (a)(3)(iii)).
 - _____ 4. Zoning, and/or subdivision regulations; local, county or regional comprehensive plans; and existing plans of any other agency relating to the development, use and protection of land and water resources with special attention to: (Reference - 25 Pa. Code §71.21(a)(3)(iv)).
 - public ground/surface water supplies
 - recreational water use areas
 - groundwater recharge areas
 - industrial water use
 - wetlands

- _____
- _____
5. Sewage planning necessary to provide adequate wastewater treatment for 5 and 10-year future planning periods based on projected growth of existing and proposed wastewater collection and treatment facilities. (Reference - 25 Pa. Code §71.21(a)(3)(v)).

V. Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities

A. Conventional collection, conveyance, treatment and discharge alternatives including:

- _____
- _____
- _____
- _____
1. The potential for regional wastewater treatment. (Reference - 25 Pa. Code §71.21(a)(4)).
 2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference - 25 Pa. Code §71.21(a)(4)(i)).
 3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference - 25 Pa. Code §71.21(a)(4)(ii)).
 - a. Repair. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(A)).
 - b. Upgrading. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(B)).
 - c. Reduction of hydraulic or organic loading to existing facilities. (Reference - 25 Pa. Code §71.71).
 - d. Improved O & M. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(C)).
 - e. Other applicable actions that will resolve or abate the identified problems. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(D)).
 4. Repair or replacement of existing collection and conveyance system components. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(A)).
 5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(iii)).
 6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(B)).

B. The use of individual sewage disposal systems including IRSIS systems based on:

- _____
- _____
- _____
- _____
- _____
1. Soil and slope suitability. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)).
 2. Preliminary hydrogeologic evaluation. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)).
 3. The establishment of a SMP. (Reference - 25 Pa. Code §71.21(a)(4)(iv)). See also Part "F" below.
 4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference - 25 Pa. Code §71.21(a)(4)).
 - a. Existing technology and sizing requirements of 25 Pa. Code Chapter 73. (Reference - 25 Pa. Code §73.31-§73.72).
 - b. Use of expanded absorption areas or alternating absorption areas. (Reference - 25 Pa. Code §73.16).
 - c. Use of water conservation devices. (Reference - 25 Pa. Code §71.73(b)(2)(iii)).

C. The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes with consideration of: (Reference - 25 Pa. Code §71.64(d)).

1. Treatment and discharge requirements. (Reference - 25 Pa. Code §71.64(d)).
2. Soil suitability. (Reference - 25 Pa. Code §71.64(c)(1)).
3. Preliminary hydrogeologic evaluation. (Reference - 25 Pa. Code §71.64(c)(2)).
4. Municipal, Local Agency or other controls over O & M requirements through a SMP. (Reference - 25 Pa. Code §71.64(d)). See Part "F" below.

D. The use of community land disposal alternatives including:

1. Soil and site suitability. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)).
2. Preliminary hydrogeologic evaluation. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)).
3. Municipality, Local Agency or other controls over O & M requirements through a SMP. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)). See Part "F" below.
4. The rehabilitation or replacement of existing malfunctioning community land disposal systems. (See Part "V", B, 4, a, b, c above). See also Part "F" below.

E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference - 25 Pa. Code §71.21(a)(4)).

1. Commercial, residential and industrial use. (Reference - 25 Pa. Code §71.63(e)).
2. Designated conveyance facilities (pumper trucks). (Reference - 25 Pa. Code §71.63(b)(2)).
3. Designated treatment facilities or disposal site. (Reference - 25 Pa. Code §71.63(b)(2)).
4. Implementation of a retaining tank ordinance by the municipality. (Reference - 25 Pa. Code §71.63(c)(3)). See Part "F" below.
5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference - 25 Pa. Code §71.63(c)(2)).

F. SMPs to assure the future O & M of existing and proposed sewage facilities through:

1. Municipal ownership or control over the O & M of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(iv)).
2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference - 25 Pa. Code §71.73(b)(1)).
3. Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule established by the municipality. (Reference - 25 Pa. Code §71.73(b)(2)).
4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference - 25 Pa. Code §71.21(a)(4)(iv) and §71.73(b)(5)) through:
 - a. Aggressive pro-active enforcement of ordinances that require O & M and prohibit malfunctioning systems. (Reference - 25 Pa. Code §71.73(b)(5)).
 - b. Public education programs to encourage proper O & M and repair of sewage disposal systems.
5. Establishment of joint municipal SMPs. (Reference - 25 Pa. Code

§71.73(b)(8)).

6. Requirements for bonding, escrow accounts, management agencies or associations to assure O & M for non-municipal facilities. (Reference - 25 Pa. Code §71.71).

G. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference - 25 Pa. Code §71.21(a)(4)).

1. Modification of existing comprehensive plans involving:

a. Land use designations. (Reference - 25 Pa. Code §71.21(a)(4)).

b. Densities. (Reference - 25 Pa. Code §71.21(a)(4)).

c. Municipal ordinances and regulations. (Reference - 25 Pa. Code §71.21(a)(4)).

d. Improved enforcement. (Reference - 25 Pa. Code §71.21(a)(4)).

e. Protection of drinking water sources. (Reference - 25 Pa. Code §71.21(a)(4)).

2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference - 25 Pa. Code §71.21(a)(4)).

3. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal that consider lot sizes and protection of replacement areas. (Reference - 25 Pa. Code §71.21(a)(4)).

4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference - 25 Pa. Code §71.21(a)(4)).

H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference - 25 Pa. Code §71.21(a)(4)).

1. Water quality/public health. (Reference - 25 Pa. Code §71.21(a)(4)).

2. Growth potential (residential, commercial, industrial). (Reference - 25 Pa. Code §71.21(a)(4)).

3. Community economic conditions. (Reference - 25 Pa. Code §71.21(a)(4)).

4. Recreational opportunities. (Reference - 25 Pa. Code §71.21(a)(4)).

5. Drinking water sources. (Reference - 25 Pa. Code §71.21(a)(4)).

6. Other environmental concerns. (Reference - 25 Pa. Code §71.21(a)(4)).

VI. Evaluation of Alternatives

A. Technically feasible alternatives identified in Section V of this checklist must be evaluated for consistency with respect to the following: (Reference - 25 Pa. Code §71.21(a)(5)(i)).

1. Applicable plans developed and approved under **Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act** (33 U.S.C.A. 1288). (Reference - 25 Pa. Code §71.21(a)(5)(i)(A)). Appendix B, Section II.A of the Planning Guide.

2. Municipal wasteload management **Corrective Action Plans or Annual Reports** developed under 25 Pa. Code Chapter 94. (Reference - 25 Pa. Code §71.21(a)(5)(i)(B)). The municipality's recent Wasteload Management (25 Pa. Code Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. Appendix B, Section II.B of the Planning Guide.

3. Plans developed under **Title II of the Clean Water Act** (33 U.S.C.A.

1281-1299) or **Titles II and VI of the Water Quality Act of 1987** (33 U.S.C.A 1251-1376). (Reference - 25 Pa. Code §71.21(a)(5)(i)(C)). Appendix B, Section II.E of the Planning Guide.

_____ _____
4. **Comprehensive plans** developed under the Pennsylvania Municipalities Planning Code. (Reference - 25 Pa. Code §71.21(a)(5)(i)(D)). The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II.D of the Planning Guide.

_____ _____
5. **Antidegradation requirements** as contained in 25 Pa. Code Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference - 25 Pa. Code §71.21(a)(5)(i)(E)). Appendix B, Section II.F of the Planning Guide.

_____ _____
6. **State Water Plans** developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference - 25 Pa. Code §71.21(a)(5)(i)(F)). Appendix B, Section II.C of the Planning Guide.

_____ _____
7. **Pennsylvania Prime Agricultural Land Policy** contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide narrative on local municipal policy and an overlay map on prime agricultural soils. (Reference - 25 Pa. Code §71.21(a)(5)(i)(G)). Appendix B, Section II.G of the Planning Guide.

_____ _____
8. **County Stormwater Management Plans** approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference - 25 Pa. Code §71.21(a)(5)(i)(H)). Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H of the Planning Guide.

_____ _____
9. **Wetland Protection.** Using wetland mapping developed under Checklist Section II.G, identify and discuss mitigative measures including the need to obtain permits for any encroachments on wetlands from the construction or operation of any proposed wastewater facilities. (Reference - 25 Pa. Code §71.21(a)(5)(i)(I)) Appendix B, Section II.I of the Planning Guide.

_____ _____
10. **Protection of rare, endangered or threatened plant and animal species** as identified by the Pennsylvania Natural Diversity Inventory (PNDI). (Reference - 25 Pa. Code §71.21(a)(5)(i)(J)). Provide DEP with a copy of the completed *PNDI Manual Project Submission Form*. Also provide a copy of the response letters from the 4 jurisdictional agencies regarding the findings of the PNDI search. Appendix B, Section II.J of the Planning Guide.

_____ _____
11. **Historical and archaeological resource protection** under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission (PHMC). (Reference - 25 Pa. Code §71.21(a)(5)(i)(K)). Provide DEP with a completed copy of a *Cultural Resource Notice* and a return receipt for its submission to PHMC. Provide a copy of the response letter or review stamp from the Bureau of Historic Preservation (BHP) indicating the project will have no effect on, or that there may be potential impacts on, known archaeological and historical sites and any avoidance and mitigation measures required. Appendix B, Section II.K of the Planning Guide.

- B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference - 25 Pa. Code §71.21(a)(5)(ii). Appendix B of the Planning Guide.
- C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference - 25 Pa. Code §71.21(a)(5)(iii)).
- D. Provide cost estimates using present worth analysis for construction, financing, ongoing administration, O & M and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of plan submission. (Reference - 25 Pa. Code §71.21(a)(5)(iv)).
- E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of the plan submission. (Reference - 25 Pa. Code §71.21(a)(5)(v)).
- F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference - 25 Pa. Code §71.21(a)(5)(vi)).
1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of SMPs. (Reference - 25 Pa. Code §71.21(a)(5)(vi)(A)).
 2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a SMP justifying time schedules for each phase. (Reference - 25 Pa. Code §71.21(a)(5)(vi)(B)).
- G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - 25 Pa. Code §71.21(a)(5)(vi)(D)).

VII. Institutional Evaluation

- A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
1. Financial and debt status. (Reference - 25 Pa. Code §71.61(d)(2)).
 2. Available staff and administrative resources. (Reference - 25 Pa. Code §71.61(d)(2))
 3. Existing legal authority to:
 - a. Implement wastewater planning recommendations. (Reference - 25 Pa. Code §71.61(d)(2)).
 - b. Implement system-wide O & M activities. (Reference - 25 Pa. Code §71.61(d)(2)).
 - c. Set user fees and take purchasing actions. (Reference - 25 Pa. Code §71.61(d)(2)).
 - d. Take enforcement actions against ordinance violators. (Reference - 25 Pa. Code §71.61(d)(2)).
 - e. Negotiate agreements with other parties. (Reference - 25 Pa. Code §71.61(d)(2)).

- _____ f. Raise capital for construction and O & M of facilities. (Reference - 25 Pa. Code §71.61(d)(2)).
- _____ B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:
 - _____ 1. Need for new municipal departments or municipal authorities. (Reference - 25 Pa. Code §71.61(d)(2)).
 - _____ 2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference - 25 Pa. Code §71.61(d)(2)).
 - _____ 3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference - 25 Pa. Code §71.61(d)(2)).
- _____ C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
 - _____ 1. Incorporation of authorities or agencies. (Reference - 25 Pa. Code §71.61(d)(2)).
 - _____ 2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference - 25 Pa. Code §71.61(d)(2)).
 - _____ 3. Description of activities to provide rights-of-way, easements and land transfers. (Reference - 25 Pa. Code §71.61(d)(2)).
 - _____ 4. Adoption of other municipal sewage facilities plans. (Reference - 25 Pa. Code §71.61(d)(2)).
 - _____ 5. Any other legal documents. (Reference - 25 Pa. Code §71.61(d)(2)).
 - _____ 6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
- _____ D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference - 25 Pa. Code §71.61(d)(2)).

VIII. Implementation Schedule and Justification for Selected Technical & Institutional Alternatives

- _____ A. Identify the technical wastewater disposal alternative which best meets the wastewater treatment needs of each study area of the municipality. Justify the choice by providing documentation which shows that it is the best alternative based on:
 - _____ 1. Existing wastewater disposal needs. (Reference - 25 Pa. Code §71.21(a)(6)).
 - _____ 2. Future wastewater disposal needs. (5 and 10 year growth areas). (Reference - 25 Pa. Code §71.21(a)(6)).
 - _____ 3. O & M considerations. (Reference - 25 Pa. Code §71.21(a)(6)).
 - _____ 4. Cost-effectiveness. (Reference - 25 Pa. Code §71.21(a)(6)).
 - _____ 5. Available management and administrative systems. (Reference - 25 Pa. Code §71.21(a)(6)).
 - _____ 6. Available financing methods. (Reference - 25 Pa. Code §71.21(a)(6)).
 - _____ 7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference - 25 Pa. Code §71.21(a)(6)).

- B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference - 25 Pa. Code §71.21(a)(6))
- C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a SMP. (Reference – 25 Pa. Code §71.31(d))

IX. Environmental Report (ER) generated from the UER Process

- A. Complete an ER as required by the UER process and as described in the DEP Technical Guidance (381-5511-111). Include this document as “Appendix A” to the Act 537 Plan Update Revision. **Note: An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.**

ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS

Municipalities that propose to implement their official sewage facilities plan updates with PENNVEST funds must meet 6 additional requirements to be eligible for such funds. See *A Guide for Preparing Act 537 Update Revisions* (362-0300-003), Appendix N for greater detail or contact the DEP regional office serving your county listed in Appendix J of the same publication.

DEP Use Only	Indicate Page #(s) in Plan	Item Required
_____	_____	1. Environmental Impact Assessment. (Planning Phase) The UER replaces the Environmental Impact Assessment that was a previous requirement for PENNVEST projects.
_____	_____	2. Cost Effectiveness (Planning Phase) The cost-effectiveness analysis should be a present-worth (or equivalent uniform annual) cost evaluation of the principle alternatives using the interest rate that is published annually by the Water Resources Council. Normally, for PENNVEST projects the applicant should select the most cost-effective alternative based upon the above analysis. Once the alternative has been selected the user fee estimates should be developed based upon interest rates and loan terms of the selected funding method.
_____		3. Second Opinion Project Review. (Design Phase)
_____		4. Minority Business Enterprise/Women's Business Enterprise (Construction Phase)
_____		5. Civil Rights. (Construction Phase)
_____		6. Initiation of Operation/Performance Certification. (Post-construction Phase)

I/A TECHNOLOGIES

PARTIAL LISTING OF INNOVATIVE AND ALTERNATIVE TECHNOLOGIES

TREATMENT TECHNOLOGIES

Aquaculture
Aquifer Recharge
Biological Aerated Filters
Constructed Wetlands
Direct Reuse (NON-POTABLE)
Horticulture
Overland Flow
Rapid Infiltration
Silviculture
Microscreens
Controlled Release Lagoons
Swirl Concentrator

SLUDGE TREATMENT TECHNOLOGIES

Aerated Static Pile Composting
Enclosed Mechanical Composting (In vessel)
Revegetation of Disturbed Land
Aerated Windrow Composting

ENERGY RECOVERY TECHNOLOGIES

Anaerobic Digestion with more than 90 percent
Methane Recovery
Cogeneration of Electricity
Self-Sustaining Incineration

INDIVIDUAL & SYSTEM-WIDE COLLECTION TECHNOLOGIES

Cluster Systems
Septage Treatment
Small Diameter Gravity Sewers
Step Pressure Sewers
Vacuum Sewers
Variable Grade Sewers
Septic Tank Effluent Pump with
Pressure Sewers



**APPENDIX C
PRELIMINARY COST WORKSHEET FOR ACT
537 PLAN**

PRELIMINARY COST WORKSHEET FOR ACT 537 PLAN

Halifax Township
Municipality

Dauphin
County

Halifax Township (Entire)
Proposed Planning Area

3/23/2018
Date of Report

Date Completed Plan will be submitted to DEP

12/31/2018

Estimated Cost of Plan

\$38,500

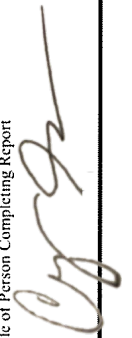
Task Activity Number From Appendix I	Senior Professional		Staff Professional		Senior Technician		Technician		Clerical		HRG Subtotal	
	Rate/Hour	Cost	Rate/Hour	Cost	Rate/Hour	Cost	Rate/Hour	Cost	Rate/Hour	Cost	Hours	Cost
	Hours		Hours		Hours		Hours		Hours			
I. Previous Wastewater Planning	2.00	\$310.00	18.00	\$1,944.00	2.00	\$216.00			1.50	\$97.50	23.50	\$2,567.50
II. Physical and Demographic Analysis	2.00	\$310.00	6.00	\$648.00					1.00	\$65.00	9.00	\$1,023.00
III. Existing Sewage Facilities	2.00	\$310.00	18.00	\$1,944.00	10.00	\$1,080.00	64.00	\$6,272.00	5.00	\$325.00	99.00	\$9,931.00
IV. Future Growth and Development	4.00	\$620.00	31.00	\$3,348.00					2.50	\$162.50	37.50	\$4,130.50
V. Alternatives to Provide New/Improved Wastewater Disposal	4.00	\$620.00	27.00	\$2,916.00	6.00	\$648.00					37.00	\$4,184.00
VI. Evaluation of Alternatives	3.00	\$465.00	31.00	\$3,348.00					2.00	\$130.00	36.00	\$3,943.00
VII. Institutional Evaluation	3.00	\$465.00	33.00	\$3,564.00					1.00	\$65.00	37.00	\$4,094.00
VIII. Implementation Schedule & Justification	3.00	\$465.00	39.00	\$4,212.00					3.00	\$195.00	45.00	\$4,872.00
IX. Environmental Report (ER)	2.00	\$310.00	6.00	\$648.00					1.00	\$65.00	9.00	\$1,023.00
Totals	25.00	\$3,875.00	209.00	\$22,572.00	18.00	\$1,944.00	64.00	\$6,272.00	17.00	\$1,105.00	333.00	\$35,768.00

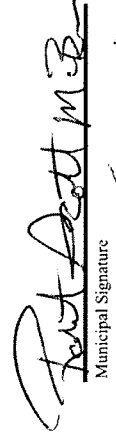
SUMMARY

Engineering Fees	\$35,768.00
Engineering Expenses	\$2,237.00
ENGINEERING TOTAL	\$38,000
Administrative Fees	\$500.00
FINAL TOTAL	\$38,500.00

Cory J. Salmon, E.I.T., Staff Professional

Name and Title of Person Completing Report


Signature


Municipal Signature

Supervisor