

# **ACT 537 SEWAGE FACILITIES PLAN**

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**EAST HANOVER TOWNSHIP, DAUPHIN COUNTY  
PENNSYLVANIA**

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Prepared for:

**East Hanover Township  
Board of Supervisors  
8848 Jonestown Road  
Grantville, PA 17028  
717-469-0833**

**ADOPTED – OCTOBER 19, 2010**

**APPROVED BY PADEP – SEPTEMBER 1, 2011**

Prepared by:



LTL PN 0507-0803









# **LTL CONSULTANTS, LTD. • ENGINEERS & CODE OFFICIALS**

PO BOX 241 • ONE TOWN CENTRE DRIVE • OLEY, PA 19547  
(610) 987-9290 • FAX: (610) 987-9288

October 7, 2011

Re: East Hanover Township Act 537 Plan  
Addendum Summary

To the reader of this plan,

This addendum presents communications with the Pennsylvania Department of Environmental Protection (PADEP) from January 25, 2011, to its approval on September 1, 2011. As this section contains vital information for continuity, it is highly recommended that this section be reviewed prior to use.

A chronological summary of the communications is as follows:

- January 24, 2011 – First Comments Letter from PADEP.
- February 9, 2011 – Telephone Conference Memo LTL to PADEP. This memo clarifies items included in the data book on compact disk, attached to the end of this Plan.
- June 9, 2011 – Official Response to PADEP January 24 Comments (including attachments).
- September 1, 2011 – PADEP Approval Letter (Superseded Letter of August 29, with a minor contextual amendment).

As is set forth in Pennsylvania Act 537, these communications have become a permanent part of this plan and shall be included with all subsequent copies and printings.

Final Note on Contextual Changes to this Plan - It should also be noted that all revised maps, schedules, tables, and other content discussed and presented in these communications are incorporated in the appropriate portions of the plan.

Sincerely,

Leo R Scott  
Community Planner  
LTL Consultants, Ltd.









# pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

WATER MANAGEMENT PROGRAM

September 1, 2011



East Hanover Township  
c/o Township Secretary  
8848 Jonestown Road  
Grantville PA 17028

Re: Act 537 Plan Update  
APS ID No. 501635  
DEP Code No. C2-22913-ACT  
East Hanover Township, Dauphin County

Ladies and Gentlemen:

This letter amends and supercedes our previous letter dated August 29, 2011.

We have reviewed your October 2010 Act 537 Plan, submitted on November 2, 2010 and resubmitted on June 13, 2011. The plan was prepared by LTL Consultants, LTD, and entitled Act 537 Sewage Facilities Plan. The submission is consistent with the planning requirements given in Chapter 71 of the rules and regulations of the Department. The plan provides for extension of sewers, including new pump stations and force mains, to specifically identified areas of the township to serve approximately 180 existing properties.

The plan is approved with the following conditions:

1. Elevated nitrate-nitrogen levels have been detected through well sampling throughout the township. All proposed subdivisions and land development projects proposing on-lot sewage disposal systems within ¼ mile of a well that tested greater than 5 mg/L nitrate-nitrogen will be required to complete a Component 2 Planning Module with a preliminary hydrogeologic evaluation. In these areas, neither Component 1 Planning Modules nor on-lot planning exemption requests will be approved.
2. Please be advised that all proposed subdivisions and land development projects proposing on-lot sewage disposal systems in areas identified as "Ohl – Limestone of Hamburg sequence" on Map 3.3 of your plan do not qualify for the planning exemption under Chapter 71, Section 71.51(b).
3. The Plan proposes an ordinance to govern the use of Small Flow Treatment Facilities in the Township. Upon adoption, a copy of this ordinance must be provided to the Department.



4. Completion of a Uniform Environmental Review (UER) is required in order to be eligible for PENNVEST funding consideration. If East Hanover Township intends to apply for PENNVEST funding, a full Act 537 Plan Revision including a UER must be completed by East Hanover Township and submitted to the Department for review and approval prior to applying for PENNVEST funding.
5. Also, if PENNVEST funding is to be applied for, then an in-depth evaluation and consideration of nutrient trading options would be required as part of the UER/Act 537 Plan Revision as outlined in Condition No. 4 above. Detailed information concerning nutrient trading options is available on the DEP website.
6. As a Phase 4 facility under the Chesapeake Bay Tributary Strategy, the East Hanover Township Wastewater Treatment Facility will receive new effluent limitations in the next NPDES Permit renewal. If the new limits require expansion in addition to upgrades, an Act 537 Plan Revision will be required.
7. The approved project will require a Water Management Part II Permit for the construction and operation of the proposed sewage facilities. 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.
8. 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 Permitting and Technical Services Section, Watershed Management Program at the letterhead address or telephone 717.705.4802.

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

Since the Department has approved your Plan, you are now eligible to receive a 50 percent planning cost reimbursement as provided under Section 6 of the Sewage Facilities Act (Act 537). A copy of the reimbursement application is enclosed. You are reminded that reimbursement applications must show detailed cost breakdowns of tasks completed or you will place your reimbursement in jeopardy.

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 WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please call Michael McNulty at 717.705.4758.

Sincerely,



Lee A. McDonnell, P.E.  
Program Manager  
Water Management Program

Enclosure

cc: LTL Consultants  
Lebanon County Planning Department









**LTL CONSULTANTS, LTD. • ENGINEERS & CODE OFFICIALS**

PO BOX 241 • ONE TOWN CENTRE DRIVE • OLEY, PA 19547  
(610) 987-9290 • FAX: (610) 987-9288

June 9, 2011

Mr. Michael C. McNulty  
Pennsylvania Department of Environmental Protection  
Water Management Program  
Southcentral Regional Office  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200

Re: East Hanover Township Act 537: Response to  
Letter of January 24, 2011

Mr. McNulty,

This letter is to serve as our response to your letter of January 24<sup>th</sup>, 2011. The responses are in italics below each comment transcribed from your original.

1. The Resolution of Adoption provided in the plan does not have the municipal seal as required.

*See attached, signed and sealed copy.*

2. The plan fails to adequately document that sewage needs in the planning area were identified in accordance with the publication, "Act 537 Sewage Disposal Needs Identification". Sewage needs mail survey forms were not provided. Documentation of field verifications likewise was not provided.

*Reference to the "Act 537 Sewage Disposal Needs Identification" (or "Needs Book as indicated in the Plan) was made in section III.B.2 (pp. 10, 13). The citation is made regarding the implementation of the Tier 1 Sanitary Needs Survey as well as descriptions of malfunctions provided for Table 3.4. Direct insertion of language from the "Needs Book" was omitted for reasons of format and readability. Other reference to the same was made in Section III.B.4 (p. 14) regarding sampling size for Individual Water Supplies.*

*Reference to the "Needs Book" was made on page 3 of the Response to Public Comments. Further, the URL for the PA DEP Library online version is also provided in this section.*

*It should be noted that communications with PA DEP staff also modified methods involved in the Needs Survey and Water Sampling Projects. Full disclosures of these communications are attached. Discussion with PA DEP regarded required sampling size based on exclusion of results from the special study of the Partridge Hills and*



***Englewood land developments. As this research led to a sewer construction project approved under a Component 3M, it was to be left out of this Plan. The table found in Appendix 2.4 summarizes the results as defined by the “Needs Book” and modified by the above mentioned conversations. The table goes further by identifying the number of surveys used, field verified, and well water samples taken.***

***Regarding examples of sewage needs survey sheets; an example form is located in Appendix 2.3. This was deemed sufficient to identify all questions that were asked in the form. The responses were also recorded in the database used to map malfunctions and well water sampling.***

***Regarding documentation of field verification; Appendix 2.5 consists of a spreadsheet including dates of well water sampling and field verifications of survey forms. Actual field verifications (including the date, the signature of the inspector, and redline markup of items) were done on the actual survey forms. The originals remain in the Engineers Records in hardcopy format. Enclosed with this letter are three (3) hardcopies of the survey forms (including field verified) and laboratory results.***

3. The lack of sanitary survey and water sampling information suggests that sewage needs have not been clearly and sufficiently analyzed. Such analysis is necessary to support the conclusions drawn regarding, which areas of the township present with the most critical public health hazards.

***See response to Comment #2 above.***

4. There appear to be confirmed malfunctions along Crooked Hill Road in the identified problem area designated 4.B on Map 3.13. The Plan fails to propose any methods for abating these malfunctions.

***Initial design of Alternative 4.F locates the potential pumping station site adjacent to the northernmost of the three mentioned confirmed malfunctions on Crooked Hill Road (See Appendix 4.1). The location of this pumping station was determined to serve the most densely clustered area of malfunctions north of the site.***

***Since the submission of the Plan, discussions have been made with a significant interested third party. These ongoing discussions regard providing potential conveyance and treatment for problem areas in Study Sector 4. A conveyance scenario would include the connection of the above-mentioned malfunctions. It is assumed that a minor revision to the Plan would be required if an agreement would be made. This has been discussed with PA DEP staff and remains tentative pending further discussion with the third party.***

5. Previous wastewater planning identified the Ridge Road area as a needs area. The Plan fails to justify why Alternative 1.A.1, providing for sewer service to this area has not been selected for implementation.



*The magnitude of need addressed by alternative 4.F takes priority over all other alternatives due to the number of properties served and problems to be addressed. Alternative 2.A and portions of alternative 2.E have been accepted as additions to the extension of sewer currently underway. Extension of service to Ridge Road requires significant investment to serve too few residences, no confirmed malfunctions, and well contamination that can be addressed by individual treatment and requirements under Ordinance 98-6 (Appendix 1.2 of the Plan).*

*In the attached response to the Township's request for information regarding potential additional capacity, representatives of Penn National Raceway and Hollywood Casino indicated that in order to meet future development goals and discharge limitations that there will be no additional capacity available for service to users outside of this private system.*

*The Plan indicates that Alternative 1.A.1 would only be feasible with funding from a third party contributor (p. 35). It is for this reason that the Ridge Road Area was included in Map 3.18 but not identified as a selected alternative. At this point, there have been several inquiries by landowners and developers along Bow Creek Road for future connection to the system. The Commercial Recreational nature of this area has shown to be a great force for attracting development, potentially leading to the funding of the sewer extension in the near future.*

6. The Plan fails to identify on-lot system repairs that were accomplished using Best Technical Guidance.

*The Township SEO provided copies of permit applications (PA DEP form 3800-FM-WSFR 0290) for the OLDS Needs Analysis section of the Plan. Review of these records showed that no BTG repairs were performed. All SEO Documented malfunctions are considered Confirmed regardless of their nature (Section I.A.1.a of the Act 537 Sewage Disposal Needs Identification Book).*

7. The Plan fails to delineate the area using the Penn National sewage collection conveyance and treatment system. The plan must address how sewage needs related to future growth and development in that area will be met.

*As stated above, no additional treatment capacity will be available from the Penn National Raceway and Hollywood Casino System. Additionally, Penn National's NPDES Permit has granted them unique autonomy from connection to the East Hanover Township System.*

*Please find the attached revision to Map 3.18 now showing the properties currently served by Penn National's system. However, it is imperative that these areas are not to be interpreted as future sewer service areas due to the closed status of the system. Secondly, as mentioned in our response to question #5, any technical alternative to service problem areas and growth in Study Sector 1 will be dependent on the contribution from future land development.*



8. The Plan fails to provide water sampling data keyed to a map of sufficient scale to be useful as a planning tool. For subdivisions and land development proposing the use of on-lot sewage disposal systems, the Plan must clearly identify areas where Component 1 planning modules and Requests for Planning Exemption are inappropriate, and require Component 2 planning modules with Preliminary Hydrogeologic Evaluations in accordance with Chapter 71, Section 71.61(c)(2)(I-iv).

***Please find attached the revised version of map 3.10 at a revised scale of 1:12,000. In addition, the notes section states the following.***

***“Proposed subdivisions and land developments in Nitrate Buffer Areas will be subject to the requirements for Plan Revision Modules for Land Development and Hydrogeologic Studies as set forth in the East Hanover Township Subdivision and Land Development Ordinance, Section 620 and PA Code Title 25, Chapter 71, Section 71.62 ”***

***The referenced section of East Hanover Township Subdivision and Land Development Ordinance, Section 620 (see attached excerpt), is also referenced on page 20 of the Plan.***

9. The Plan proposes an ordinance to govern the use of Small Flow Treatment Facilities. A copy of this ordinance must be included in the Plan for review. Further, the Plan must clearly state the conditions under which the use of Small Flow Treatment Facilities will be allowed.

***At this time, no official small flow treatment facility ordinance has been drafted. Drafting for this ordinance will begin shortly after the approval of this Plan by PA DEP. Completion and adoption of the ordinance has been scheduled for six months after plan approval (see Plan Summary p. X). At the completion of the Ordinance, a copy will be submitted to PA DEP.***

10. The Plan alludes to the need for PENNVEST funding to implement Alternative 4.F. The plan lacks necessary information to be considered for PENNVEST funding, including a Uniform Environmental Review, documentation that the most cost effective alternate has been chosen based on a present worth cost analysis, and documentation that other alternatives have been considered for the provision of adequate sewage disposal for the areas of need being considered.

***Although PENNVEST financing is an option, the timeframe for completion of Alternative 4F does not lend to more intensive analysis. The Act 537 Plan Content and Environmental Assessment Checklist, Sections VI.D & E states the cost estimates/funding analysis “shall be limited to areas identified in the Plan as needing improved sewage facilities within five years from the date of Plan submission.” As the project is an estimated 7 years away from implementation a current cost effectiveness analysis and drafting of a UER appears to be premature. However, and although not***



*required per Sections VI.D & E, specific, detailed cost estimates (for a number of alternatives) and the affect on sewer rates were provided in Section VI of the Plan. Details of the other alternatives considered are found in the table on page 39, and in Appendix 4 of the Plan.*

*Drafting of the UER is not a specific requirement of the Plan, as PENNVEST funding has not been selected as an absolute alternative. As is discussed in our response to question #4 the Township is currently in preliminary discussion with outside parties for potential cost sharing in the construction of Alternative 4F. If discussions bear fruit, the cost and scope of the project may be significantly modified. It is the Township's intention to pursue PENNVEST or other funding only after discussions with outside parties have reached their conclusion.*

11. The Plan fails to address how East Hanover Township's wastewater treatment plant will comply with the requirements of the Chesapeake Bay Tributary Strategy as a Phase 4 facility.

*The Plan does recognize that more stringent limitations will be placed in the next NPDES Permit renewal. How the Township intends to comply with the Chesapeake Bay requirements is not discussed in the Plan because the Township was focused on submission of the Plan itself. A timetable given to PA DEP called for submittal of the Plan by November 2010. Many of the other studies and plans under development were placed on hold until the Plan was submitted to PA DEP. These included a Wastewater Treatment Facility & Bow Creek Analysis. This study takes three separate studies (Flood Study, WWTF Capacity Study & Aquatic Biological Study) and determines the suitability of the WWTF and Bow Creek to absorb larger flows while discharge criteria are made more stringent. Future challenges and alternatives to meet those challenges are discussed in that report. A copy of the WWTF and Bow Creek Study is enclosed for your review.*

It is our hope that the responses provided have sufficiently answered the Department's questions regarding the Plan. Please be sure to contact us if any additional information is needed for your review.

Sincerely,



Leo R Scott  
Community Planner / Wastewater Specialist  
LTL Consultants, Ltd.

Attachments:

1. Signed Sealed Copy of East Hanover Township Resolution #2010-10 (1p)
2. Communications with PADEP on Sanitary Survey and Well Water Sampling (5p)



3. Penn National Response to Inquiry about Capacity (3p)
4. Revision to Map 3.18 (1p)
5. Revision to Map 3.10 (1p)
6. Excerpt from East Hanover Township SALDO Section 620 (1p)

Enclosures

1. Act 537 Plan Revision Data Book (3 bound)
2. Dairy Lane WWTF and Bow Creek Analysis (bound)

Cc: Chris Hannum

Lisa Sweigert

Scott Wyland, Esq.

East Hanover Township Board of Supervisors

File: M:\Engineering\East Hanover Township - 07\0507-1101 Act 537 Respond to PADEP  
Comments\Correspondence\Response to DEPs 012411 Letter 060911.doc



**A RESOLUTION OF  
EAST HANOVER TOWNSHIP,  
DAUPHIN COUNTY, PENNSYLVANIA**

**RESOLUTION NO. 2010-10**

**RESOLUTION FOR PLAN REVISION**

RESOLUTION OF THE SUPERVISORS OF EAST HANOVER TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted hereunder, Chapter 71 of Title 25 of the **Pennsylvania Code**, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, LTL Consultants, Ltd. has prepared a plan which provides for sewage facilities in portions of East Hanover Township, and the alternative of choice to be implemented is extension of municipal sewer service to properties along Pheasant Road (Alt. 2.E); Dairy Lane (Alt. 2.A); Hunter Lane, Mill Rd, Red Fox Lane, Campbell Court, Circle Drive, Sycamore Lane, Chestnut Place, Carlson Road, Ulrich Court, Steeple Chase Lane, and Crooked Hill Road (Alt. 4.F). The key implementation activities/dates include connection of properties along Dairy Lane (Alt. 2.A) within three (3) months after plan approval, creation of a Small Flow Sewage Treatment Facilities Ordinance within six (6) months from plan approval, establishment of the East Hanover Township Municipal Authority within eighteen (18) months of plan approval, complete construction of the Pheasant Road Sewer Extension (Alt. 2.E) within twenty-eight (28) months of plan approval, and complete construction of the Alternative 4.F Sewer Extension within ten (10) years from plan approval.

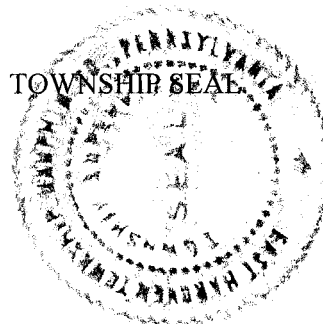
WHEREAS, The Township finds that the Facility Plan described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Supervisors of the Township of East Hanover hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, *Sharon A. Casey*, Secretary, East Hanover Township Board of Supervisors, hereby certify that the foregoing is a true copy of the Township's Resolution No. 2010-10 adopted October 19, 2010.

AUTHORIZED SIGNATURE

*Mark Upchurch*









# **LTL CONSULTANTS, Ltd.**

One Town Centre ♦ P.O. Box 241  
Oley, Pennsylvania 19547  
Tel. (610) 987-9290 / Fax (610) 987-9288

Component 3M 0507-0802

File EHT-537 Plan  
Project Number 0507-0803

## **TELEPHONE AND CONFERENCE MEMORANDUM**

By Lisa Sweigert  
Person(s)/ Organization(s) Involved  
Ed Corriveau - DEP

Date 9/18/08  
Time 2:15 pm (left message)  
Phone Number 717 705 4805

return call 9/19/08  
9:15 am

Subject Act 537 Sampling

① Can the new E-Coli Test be used in place of the Total/Fecal Coliform test for 537 well samples?

[The safe thing to do is follow the "Gold Book" Ed will check with others.]

② Does DEP have a specific sampling protocol to follow for 537 Plan well sampling programs? (i.e. - how to take sample, bottle prep, sample preservation etc.) [Anything that would be in writing is in the "Gold Book." There is nothing more detailed <sup>well</sup> than that. DEP will not review a sampling plan.]

③ Would design type, age, or quality of construction exclude any individual or group of wells from being sampled for either Tier I or Tier II well water surveys?

[It is engineering judgement whether to use a well for sampling. We can sample any well, but note the type of well and land use near it (ie farms). If we only sample drilled wells it would be okay as long as it is documented.]

④ Component 3M - [due to legal issues, he cannot discuss. There will be something coming to the Township in future. I told him that I thought the Township may submit the sewer option for E+PH. He said that would be good.]  
Copies Christ Hansen

Signed (Author) Lisa Sweigert







# LTL CONSULTANTS, Ltd.

One Town Centre ♦ P.O. Box 241  
Oley, Pennsylvania 19547  
Tel. (610) 987-9290 / Fax (610) 987-9288

File EHT-Act 537 Plan Update  
Project Number 0507-0803

## **TELEPHONE AND CONFERENCE MEMORANDUM**

By Lisa Sweigert  
Person(s)/ Organization(s) Involved Tim Wagner - DEP-SCRO

Date 3/10/09  
Time 2:45  
Phone Number 717-705-4794

Subject Sampling question

1. % of returned surveys subjected to field verification must be reported; How many of those subject to verification must be from those not requesting a sample?

3/11/09  
David  
Gates info  
in red

ANS. Referred to David Gates; left message 705-4783

15% of returned surveys need to be verified, regardless of whether or not a sample is requested; must be random.

2. can the E.Coli analysis be used instead of Total Coliform + Fecal Coliform? This test can take the place of TC + FC and produces the same results with less sample bottles and less cost.

ANS. Yes - it has been used. If E.Coli produces results for TC + FC, it can be used. If the test produces results for E.Coli only, it cannot be used.

- 3/11/09 3. who to contact for a list of certified labs?

ANS. - found list of labs before Dave called back

Signed (Author) Lisa Sweigert

Copies







# **LTL CONSULTANTS, Ltd.**

One Town Centre ♦ P.O. Box 241  
Oley, Pennsylvania 19547  
Tel. (610) 987-9290 / Fax (610) 987-9288

File EHT- ACT 537 PLAN  
Project Number 0507-0803

## **TELEPHONE AND CONFERENCE MEMORANDUM**

By Lisa Sweigert  
Person(s)/ Organization(s) Involved David Gates - DEP-SCRO

Date 3/18/09  
Time 9:30  
Phone Number 717 705-4783

Subject mock sample results sheet

I requested that Dave review the mock sample report to verify that this is okay w/ DEP.

• Dave's answer: yes, he'll review it  
email address: dagates@state.pa.us

• Dave needed to change his response from our 3/11/09 conversation about %age of surveys needing to be verified  
Instead of 15% of returned surveys, it is 15% of all OLDS in study area, in this case the entire Township, (minus E + PH, and mobile home parks.)

This means 239 <sup>(survey)</sup> OLDS need to be verified.

Signed (Author) Lisa A. Sweigert

Copies







## Lisa Sweigert

---

**From:** Gates, David [dagates@state.pa.us]  
**Sent:** Wednesday, March 18, 2009 1:08 PM  
**To:** 'Lisa A. Sweigert'  
**Cc:** Mary Anne McCarthy  
**Subject:** RE: mock sample results sheet

Lisa,

The sampling and proposed sample results sheets appear to be acceptable for the groundwater survey portion of an Act 537 Plan.

Any other questions do not hesitate to call or email.

**Dave Gates** | Sewage Planning Specialist II  
Department of Environmental Protection  
Southcentral Regional Office  
909 Elmerton Avenue | Harrisburg, PA 17110-8200  
Phone: 717.705.4783 | Fax: 717.705.4760  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

-----Original Message-----

**From:** Lisa A. Sweigert [mailto:lasweigert@ltlconsultants.com]  
**Sent:** Wednesday, March 18, 2009 9:36 AM  
**To:** Gates, David  
**Cc:** Mary Anne McCarthy  
**Subject:** mock sample results sheet

Attached is the results sheet as discussed earlier. Please email me if this is acceptable.  
Thanks,

**Lisa**

Lisa A. Sweigert  
Municipal Engineer  
LTL Consultants, Ltd.  
610-987-9290

3/18/2009





## Laboratory Result Summary

Page 1 of 5

Laboratory Project ID:

Client Name  
Sampler Name  
Street Name  
Suite Number  
City, State Zip Code

Contact:  
**Project Name:** Anywhere Twp. Act 537  
**Project Number:** NBTP00604  
**Purchase Order Number:** N/A  
**Sampled By:** Individual Site Sampler  
**Date Received:** January 7, 2008  
**Time Received:** 9:15 AM

### Analytical Testing Parameters

Client Sample ID: **228 765 Crag** Rd.  
Lab Sample ID: **0801063-01**

Collection Date: **1/6/2008**  
Collection Time: **12:50 PM**

#### Microbiological Analysis

Parameter	Results	Units	PQL	Method	Test Date	Test Time	Analyst
E. coli Bacteria	<1	MPN/100 ml	1	SM 9223B	1/7/2008	3:05 PM	KDB
Total Coliform Bacteria	5	MPN/100 ml	1	SM 9223B	1/7/2008	3:05 PM	KDB

#### General Chemistry Analysis

Parameter	Results	Units	PQL	Method	Test Date	Test Time	Analyst
Nitrate as N	6.0	mg/L	1.0	EPA 300.0	1/7/2008	11:07 AM	KDB

### Analytical Testing Parameters

Client Sample ID: **229 710 Crag** Rd.  
Lab Sample ID: **0801063-02**

Collection Date: **1/6/2008**  
Collection Time: **1:10 PM**

#### Microbiological Analysis

Parameter	Results	Units	PQL	Method	Test Date	Test Time	Analyst
E. coli Bacteria	<1	MPN/100 ml	1	SM 9223B	1/7/2008	3:05 PM	KDB
Total Coliform Bacteria	<1	MPN/100 ml	1	SM 9223B	1/7/2008	3:05 PM	KDB

#### General Chemistry Analysis

Parameter	Results	Units	PQL	Method	Test Date	Test Time	Analyst
Nitrate as N	3.6	mg/L	1.0	EPA 300.0	1/7/2008	11:42 AM	KDB

### Analytical Testing Parameters

Client Sample ID: **230 700 Crag** Rd.  
Lab Sample ID: **0801063-03**

Collection Date: **1/6/2008**  
Collection Time: **1:25 PM**

#### Microbiological Analysis

Parameter	Results	Units	PQL	Method	Test Date	Test Time	Analyst
E. coli Bacteria	<1	MPN/100 ml	1	SM 9223B	1/7/2008	3:05 PM	KDB
Total Coliform Bacteria	<1	MPN/100 ml	1	SM 9223B	1/7/2008	3:05 PM	KDB

#### General Chemistry Analysis

Parameter	Results	Units	PQL	Method	Test Date	Test Time	Analyst
Nitrate as N	4.3	mg/L	1.0	EPA 300.0	1/7/2008	12:17 PM	KDB





# McNees

Wallace & Nurick LLC

100 Pine Street • PO Box 1166 • Harrisburg, PA 17108-1166  
Tel: 717.232.8000 • Fax: 717.237.5300

Scott A. Gould  
Direct Dial: 717.237.5304  
Direct Fax: 717.260.1699  
sgould@mwn.com

February 16, 2010

Scott T. Wyland, Esq.  
Hawke McKeon & Sniscak LLC  
100 North 10th Street  
Harrisburg, PA 17101

**VIA E-MAIL AND**  
**FIRST CLASS MAIL**

**RE: Hollywood Casino at Penn National Race Course  
Wastewater Treatment Plant Capacity**

Dear Scott:

This letter is in response to East Hanover Township's request for information regarding available capacity in the sewage treatment plant at the Hollywood Casino at Penn National Race Course facility ("Penn National"). We understand that the Township is making this inquiry as part of a broader Act 537 sewer plan update. In your letter, you indicated that the Township has sewage treatment needs in the area of the Penn National facility, and the Township is inquiring to determine if the Penn National wastewater treatment plant has available capacity to treat additional sewage flows from off site.

As set forth below, the Penn National wastewater treatment plant does not have available capacity to treat additional off-site sewage flows.

The Penn National sewage treatment plant has a permitted design capacity of a monthly average of 230,000 gallons per day (gpd), or 0.230 million gallons per day (mgd). The facility currently serves the Hollywood Casino and racetrack facilities, the Holiday Inn Harrisburg-Hershey Hotel, and Nino's Café Pizza and Restaurant. The Holiday Inn is authorized to discharge 75,000 gpd, and Nino's Café discharges less than 1,000 gpd. The remaining capacity is dedicated to the Penn National facilities. Those facilities currently consist of the Hollywood Casino, associated offices, racing offices, and certain "backside" racing operations (dormitories and certain horse washing stalls). However, as part of Penn National's commitment to renovating the horse racing facilities, and in order to ensure continued compliance with environmental laws, Penn National intends to connect additional horse washing stalls and other racing operation facilities to the wastewater treatment plant. In addition, and as you are aware, Penn National's master plan for the site includes a hotel and conference center. Those additional facilities will account for all of the capacity within the Penn National wastewater treatment plant.

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The original sewage treatment plant was constructed in 1971-1972 when the Penn National race track was first developed, and was replaced in 2006. The treatment plant discharges into a small Unnamed Tributary to Swatara Creek. Prior to 2003, the peak average daily flow to the treatment plant prior to construction of the casino was 0.167 mgd. The Hollywood Casino at Penn National Race Course was constructed on the site in 2007 and opened in early 2008. As part of the Hollywood Casino project, high efficiency fixtures were utilized, an intensive on-site inflow and infiltration corrective action plan was implemented, and a wastewater recycling and reuse system was installed to provide recycled water for racetrack irrigation and conditioning and for sanitary use in the casino. All of those features were implemented not only for purposes of environmental stewardship, but also with the specific goal of creating and preserving sufficient sewage treatment capacity to serve the full build out of the facility, including a hotel/conference center and renovated racing facilities.

Due to the implementation of those water efficiency features, the average flows to the treatment plant after construction of the casino decreased from a peak of 0.167 mgd in 2002 to 0.122 gpd in 2009. A proposed casino expansion project is anticipated to produce an additional 11,100 gpd of sewage to be treated at the existing treatment plant.

While this would appear to create excess wastewater treatment capacity of approximately 97,000 gpd, that treatment capacity will be fully utilized by the anticipated hotel/conference center and racing operation improvements. Based on information from other racing facilities, Penn National anticipates that the horse washing stalls to be constructed over the next several years could add as much as 30,000 gpd of flow to the treatment plant. The planned hotel and conference center would add approximately 45,000 gpd of wastewater to the treatment plant, depending on the ultimate number of rooms and conference facilities constructed. Further, it is important to note that the economic recession has certainly impacted the gaming industry and tourism to central Pennsylvania as a whole during the two years that the casino has operated, and the current peak average flows of 0.122 mgd from the existing facility are likely understated to some degree (although the extent of the impact on the Hollywood Casino cannot be accurately estimated since the recession has persisted from the time the casino opened until the present). Any capacity above the current peak flows and planned hotel/conference center and racing operation improvements will serve as a necessary reserve for increased patronage and miscellaneous facility growth.

It is also important to note that the Pennsylvania Department of Environmental Protection has indicated that increasing the flows from the Penn National wastewater treatment plant into the Unnamed Tributary of Swatara Creek would be difficult. The natural volume of water in the stream is relatively low, and it is listed as "impaired" by nutrient contamination. When the facility was replaced in 2006, Penn National upgraded the treatment plant to ensure compliance with the Chesapeake Bay and local water quality requirements. However, PADEP has indicated that it may not be feasible to increase flows above the permitted design capacity of 0.230 mgd.



Scott T. Wyland, Esq.  
February 16, 2010  
Page 3

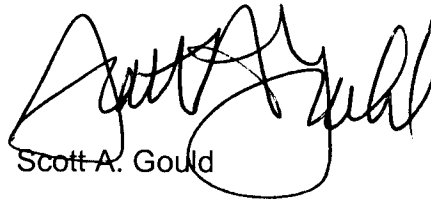
Penn National has expended millions of dollars not only to provide sewage treatment to its facility and a portion of flows from the Township (the Holiday Inn and Nino Café), but also in implementing water efficiency measures and innovative water recycling and reuse in order to create and preserve sufficient capacity for its plans for the facility. Any current capacity in the wastewater treatment plant is reserved for those developments, and is not available to treat off-site sewage flows.

Please call me or Charlie Courtney (717-237-5296) if you have any questions or wish to discuss this matter.

Sincerely,

McNEES WALLACE & NURICK LLC

By



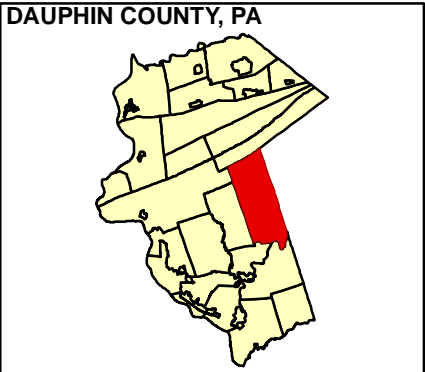
Scott A. Gould

c: Jack Rauen, Penn National Gaming  
Frank Quigley, MTRA  
James C. McCarthy, P.E.  
Charles M. Courtney



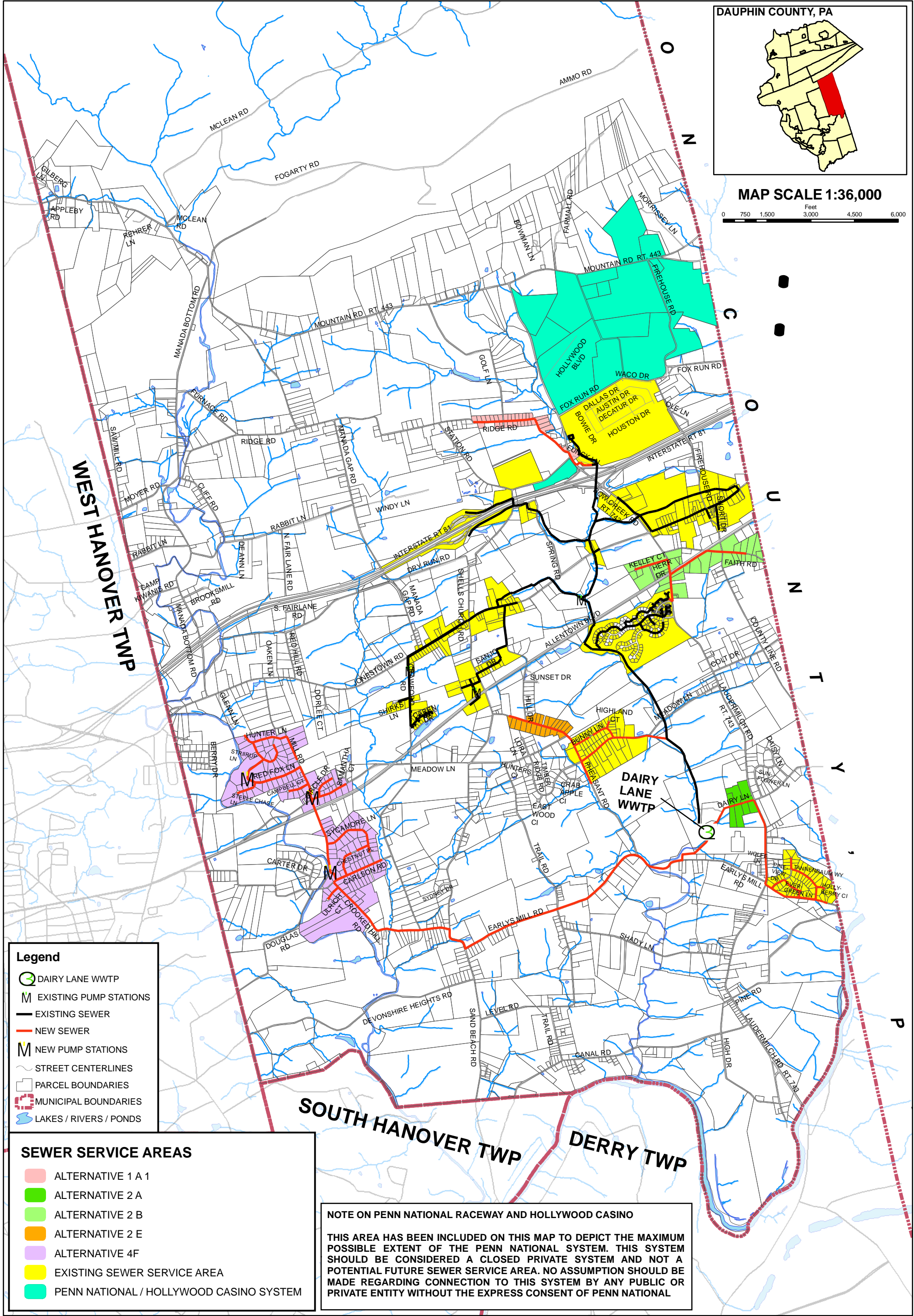






MAP SCALE 1:36,000

0 750 1,500 3,000 4,500 6,000  
Feet



**Legend**

- DAIRY LANE WWTP
- EXISTING PUMP STATIONS
- EXISTING SEWER
- NEW SEWER
- NEW PUMP STATIONS
- STREET CENTERLINES
- PARCEL BOUNDARIES
- MUNICIPAL BOUNDARIES
- LAKES / RIVERS / PONDS

**SEWER SERVICE AREAS**

- ALTERNATIVE 1 A 1
- ALTERNATIVE 2 A
- ALTERNATIVE 2 B
- ALTERNATIVE 2 E
- ALTERNATIVE 4F
- EXISTING SEWER SERVICE AREA
- PENN NATIONAL / HOLLYWOOD CASINO SYSTEM

**NOTE ON PENN NATIONAL RACEWAY AND HOLLYWOOD CASINO**

THIS AREA HAS BEEN INCLUDED ON THIS MAP TO DEPICT THE MAXIMUM POSSIBLE EXTENT OF THE PENN NATIONAL SYSTEM. THIS SYSTEM SHOULD BE CONSIDERED A CLOSED PRIVATE SYSTEM AND NOT A POTENTIAL FUTURE SEWER SERVICE AREA. NO ASSUMPTION SHOULD BE MADE REGARDING CONNECTION TO THIS SYSTEM BY ANY PUBLIC OR PRIVATE ENTITY WITHOUT THE EXPRESS CONSENT OF PENN NATIONAL

**MAP 3.18: FUTURE  
SEWER SERVICE AREAS  
EAST HANOVER TOWNSHIP  
ACT 537 PLAN REVISION**

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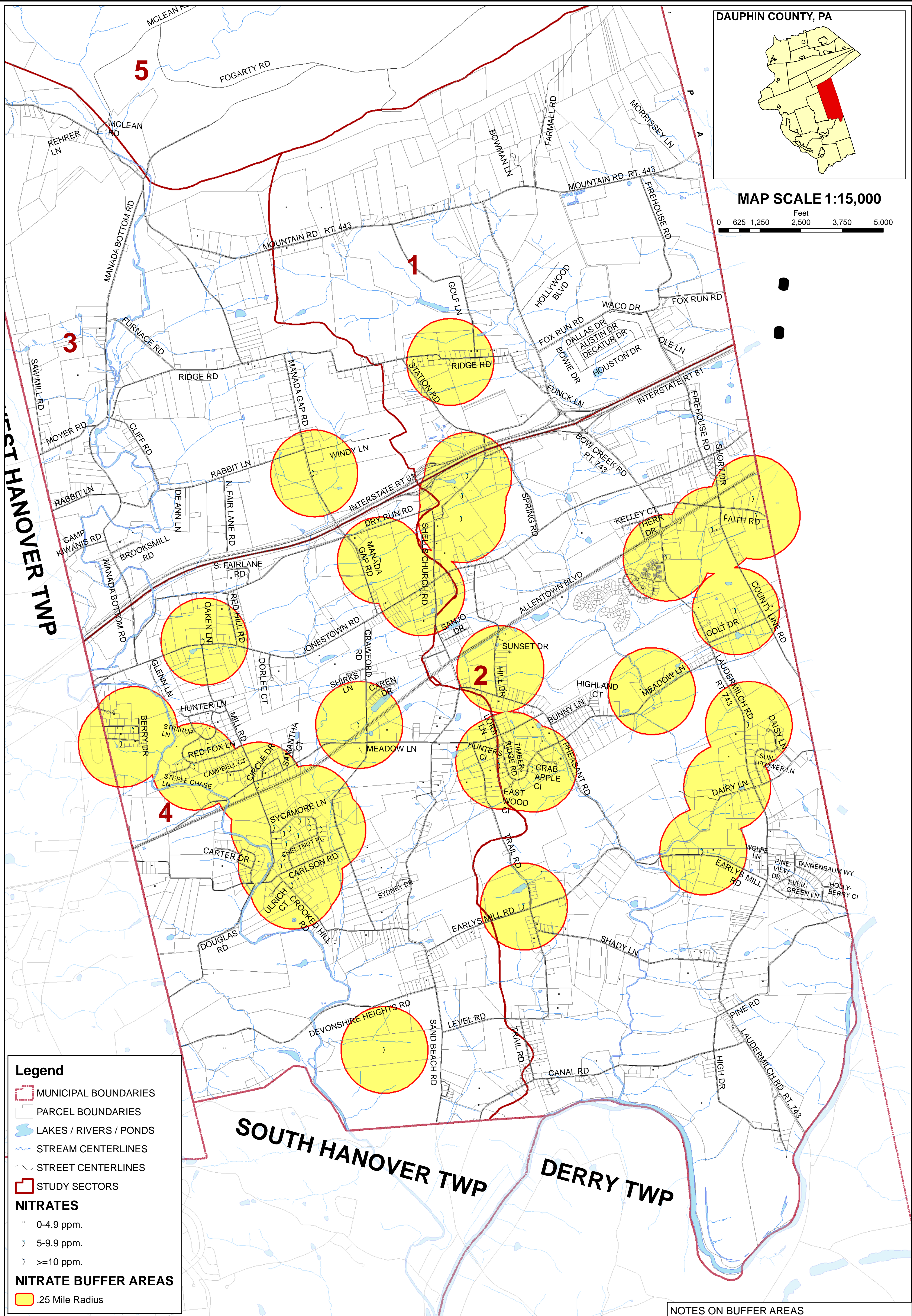
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FAX: (610) 987-9288

DATA SOURCES:  
DATA SOURCE INFORMATION FOR ALL MAPPING  
IS PROVIDED IN SECTION 3.20 OF THE PLAN.  
MAP USE:  
THIS MAP IS FOR REFERENCE USE ONLY, NOT  
INTENDED FOR USES REQUIRING ENGINEERING  
OR SURVEY ACCURACY.









DATA SOURCES:  
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F:\EHT\ACT 537\MAPS\_FINAL\3.10 NITRATES Revised 020311.mxd

# MAP 3.10: WELL WATER SAMPLING NITRATE CONTAMINATION EAST HANOVER TOWNSHIP ACT 537 PLAN REVISION

## NOTES ON BUFFER AREAS

Proposed subdivisions and land developments in Nitrate Buffer Areas will be subject to the requirements for Plan Revision Modules for Land Development and Hydrogeologic Studies as set forth in the East Hanover Township Subdivision and Land Development Ordinance, Section 620 and PA Code Title 25, Chapter 71, Section 71.62







- 619.4.**        **Setback** - No change in existing topography, which results in a slope greater than the pre-development condition, may be located within twenty-five feet (25') of the neighboring property.

## **Section 620        Sanitary Sewage Disposal**

- 620.1.**        When the Pennsylvania Sewage Facilities Act, Act 537 of 1966, as amended, requires a Sewer Facilities Plan Revision (Plan Revision Module for Land Development), or Supplement, approval of the Revision or Supplement shall be submitted with the Preliminary Plan Application and approved prior to Final Plan approval.
- 620.2.**        The applicant shall provide the type of sanitary sewage disposal facility consistent with the East Hanover Township Act 537 Plan.
- 620.3.**        The applicant shall provide a preliminary hydrogeological study for all development areas located within one-quarter mile of an area known to possess nitrate-nitrogen levels exceeding 5 milligrams per liter. Information on the location of these areas is available at the Township Municipal Office.
- 620.4.**        Sanitary sewer systems shall be designed and permitted in accordance with the prevailing rules and regulations of the Pennsylvania Department of Environmental Protection and any applicable bona fide sewer authority, or cooperative association of lot owners.
- 620.5.**        When sanitary sewage disposal is provided by means other than by an individual on-lot system for use by a single unit of occupancy, the Final Plan Application shall include:
- 620.5.1.        Evidence that the supplier is a certificated public utility; a bona fide cooperative association of lot owners; or a municipal corporation, authority, or utility. A copy of a Certificate of Public Convenience from the Pennsylvania Public Utility Commission or an application for such certificate, a cooperative agreement or a commitment or agreement to serve the area in question, whichever is appropriate, shall be acceptable evidence.
- 620.5.2.        Notice of approval of the design, capability to service, method of installation, and possible financial guarantee from the provider.
- 620.5.3.        Appropriate measures, as deemed necessary by the Board of Supervisors, to ensure adequate future maintenance of the system.
- 620.6.**        Where on-lot sewage disposal systems are to be used, each lot shall be specifically tested for and secure one disposal site (field, bed or trench) and replacement (alternate) area. Approval by the Sewage Enforcement Officer shall be attained for both disposal sites. Furthermore, the replacement disposal area shall be perpetually protected from excavation, construction, and other activities that would result in disturbance of the soils' ability to renovate sewage effluent, until such time as the alternate field is activated due to malfunction of the initial disposal site.







# LTL CONSULTANTS, Ltd.

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Oley, Pennsylvania 19547  
Tel. (610) 987-9290 / Fax (610) 987-9288

File  
Project Number

## **TELEPHONE AND CONFERENCE MEMORANDUM**

By Leo R Scott

Person(s)/ Organization(s) Involved \_\_\_\_\_

Mike McDuffy (mm)

Date 2/9/2011

Time @ 1 pm

Phone Number 717-705-4758

Subject PADEP Comments to Submission of EHT Act 537 (#s 2 & 3)

I inquired what specific information DEP would like to see in our response.  
mm stated they want to see all sanitary needs survey forms including  
Field verifications.

I responded that these encompass over 500 returned forms and that we had  
not anticipated including them but can scan & send along.

mm requested they be clipped and sent in in triplicate

I stated that field verifications were redlined on the survey forms - ~~mm~~ mm requested  
that we put a footnote in Directing the reader to this. Also requested an index page.  
mm also stated that the inclusion of any .dbf or .xls etc... would be helpful.

Signed (Author) \_\_\_\_\_

Copies

Lisa Sucigart

File - M:\Engineering\East Hanover Township\0507-1101 Folder



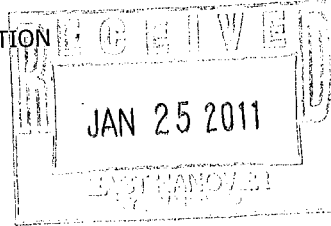






# pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
WATER MANAGEMENT PROGRAM



January 24, 2011

East Hanover Township Supervisors  
c/o Township Secretary  
8848 Jonestown Road  
Grantville, PA 17028

Re: Act 537 Planning  
APS ID No. 501635  
DEP Code No. C1-22913-ACT  
East Hanover Township, Franklin County

Ladies and Gentlemen:

The Department of Environmental Protection (Department) reviewed your East Hanover Township Act 537 Official Plan, received on November 2, 2010, and determined that it is incomplete for the following reasons:

1. The Resolution of Adoption provided in the plan does not have the municipal seal as required.
2. The Plan fails to adequately document that sewage needs in the planning area were identified in accordance with the publication, "Act 537 Sewage Disposal Needs Identification". Sewage needs mail survey forms were not provided. Documentation of field verifications likewise was not provided.
3. The lack of sanitary survey and water sampling information suggests that sewage needs have not been clearly and sufficiently analyzed. Such analysis is necessary to support the conclusions drawn regarding which areas of the township present with the most critical public health hazards.
4. There appear to be confirmed malfunctions along Crooked Hill Road in the identified problem area designated 4.B on Map 3.13. The Plan fails to propose any methods for abating these malfunctions.
5. Previous wastewater planning identified the Ridge Road area as a needs area. The Plan fails to justify why Alternative 1.A.1, providing for sewer service to this area, has not been selected for implementation.
6. The Plan fails to identify on-lot system repairs that were accomplished using Best Technical Guidance.
7. The Plan fails to delineate the area using the Penn National sewage collection, conveyance and treatment system. The plan must address how sewage needs related to future growth and development in that area will be met.

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January 24, 2011

8. The Plan fails to provide water sampling data keyed to a map of sufficient scale to be useful as a planning tool. For subdivisions and land developments proposing the use of on-lot sewage disposal systems, the Plan must clearly identify areas where Component 1 planning modules and Requests for Planning Exemption are inappropriate, and require Component 2 planning modules with Preliminary Hydrogeologic Evaluations in accordance with Chapter 71, Section 71.62 (c)(2)(i-iv).
9. The Plan proposes an ordinance to govern the use of Small Flow Treatment Facilities. A copy of this ordinance must be included in the Plan for review. Further, the Plan must clearly state the conditions under which the use of Small Flow Treatment Facilities will be allowed.
10. The Plan alludes to the need for PENNVEST funding to implement Alternative 4.F. The plan lacks necessary information to be considered for PennVEST funding, including a Uniform Environmental Review, documentation that the most cost effective alternative has been chosen based on a present worth cost analysis, and documentation that other alternatives have been considered for the provision of adequate sewage disposal for the areas of need being considered.
11. The Plan fails to address how East Hanover Township's wastewater treatment plant will comply with the requirements of the Chesapeake Bay Tributary Strategy as a Phase 4 facility.

The deficiencies identified in this letter must be addressed and a plan resubmitted to the Department within 120 days of the date of this letter. Failure to respond during this time frame may result in Departmental action resulting in disapproval of your currently incomplete plan submission.

The 120-day review period for this Plan will not begin until the Department has received a complete plan submission. Please submit 3 complete copies of all plan resubmissions.

If you have any questions concerning this letter, please call me at 717.705.4758.

Sincerely,



Michael C. McNulty  
Sewage Planning Specialist  
Water Management Program

cc: LTL Consultants, LTD



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ADDITIONAL ITEMS:

1. MAP 3.10 FULL SIZE VERSION
2. DATA BOOK (COMPACT DISK)



## **PA DEP CHECKLIST**









COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

## Act 537 Plan Content and Environmental Assessment Checklist

### PART 1 GENERAL INFORMATION

#### A. Project Information

1. Project Name EAST HANOVER TOWNSHIP: ACT 537 PLAN REVISION
2. Brief Project Description COMPLETE UPDATE TO THE EXSITING ACT 537 PLAN OF 1988 AND SUBSEQUENT SUPPLEMENTS (1992,1995,2003)
- 3.

#### B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
EAST HANOVER TOWNSHIP	DAUPHIN	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
ESPENSHADE	KEITH			BOARD OF SUPERVISORS
Additional Individual Last Name	First Name	MI	Suffix	Title
CASEY	DEBORAH			TOWNSHIP SECRETARY
Municipality Mailing Address Line 1		Mailing Address Line 2		
8848 JONESTOWN ROAD				
Address Last Line -- City		State	ZIP+4	
GRANTVILLE		PA	17028	
Phone + Ext.	FAX (optional)	Email (optional)		
717-469-0833				

#### C. Site Information

Site (or Project) Name	(Municipal Name) Act 537 Plan
EAST HANOVER TOWNSHIP	
Site Location Line 1	Site Location Line 2
8848 JONESTOWN RD	

#### D. Project Consultant Information

Last Name	First Name	MI	Suffix
HANNUM	CHRISOPHER	M	PE
Title	Consulting Firm Name		
MANAGER - WATER WASTEWATER DEPARTMENT	LTL CONSULTANTS, LTD		
Mailing Address Line 1	Mailing Address Line 2		
ONE TOWN CENTRE DRIVE	PO BOX 241		
Address Last Line -- City	State	ZIP+4	Country
OLEY	PA	19547	UNITED STATES OF AMERICA
Email	Phone + Ext.	FAX	
channum@ltlconsultants.com	610-987-9290	610-987-9288	



**PART 2 ADMINISTRATIVE COMPLETENESS CHECKLIST**

<b>DEP Use Only</b>	<b>Indicate Page #(s) in Plan</b>	<b>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 the department. Incomplete Plans will be returned unless the municipality is clearly requesting an advisory review.</b>
_____	<u>ii</u>	1. <b>Table of Contents</b>
_____	<u>vii</u>	2. <b>Plan Summary</b>
_____	<u>viii</u>	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - Title 25, §71.21.a.7.i).
_____	<u>ix</u>	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 Title 25 §71.21.a.7.ii).
_____	<u>ix</u>	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference Title 25, §71.21.a.7.ii).
_____	<u>ix</u>	D. Identify the municipal commitments necessary to implement the Plan. (Reference Title 25, §71.21.a.7.iii).
_____	<u>x</u>	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 Title 25, §71.21.a.7.iv).
_____	<u>xi</u>	3. <b>Municipal Adoption:</b> Original, 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 Title 25, §71.31.f) Section V.F. of the Planning Guide.
_____	<u>xii</u>	4. <b>Planning Commission / County Health Department Comments:</b> 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-Title 25, §71.31.b) Section V.E.1 of the Planning Guide.
_____	<u>xiii</u>	5. <b>Publication:</b> Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30 day comment period. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>xix</u>	6. <b>Comments and Responses:</b> Copies of ALL written comments received and municipal response to EACH comment in relation to the proposed plan. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>x</u>	7. <b>Implementation Schedule:</b> 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-Title 25, §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 Title 25, §71.21.c).
_____	<u>xv</u>	8. <b>Consistency Documentation:</b> 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 71.21.(a)(5)(i-iii). (Reference-Title 25, §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
_____	<u>1</u>	<b>I. Previous Wastewater Planning</b>
_____		A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
_____	<u>1</u>	1. Previously undertaken under the Sewage Facilities Act (Act 537). (Reference-Act 537, Section 5 §d.1).
_____	<u>2</u>	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference-Title 25, §71.21.a.5.i.A-D). Section V.F of the Planning Guide.
_____	<u>2</u>	3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference-Title 25, §71.21.a.5.i.A&B). Section V.D. of the Planning Guide.
_____	<u>2</u>	4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference-Title 25, §71.21.a.5.i.A).
_____	<u>3</u>	<b>II. Physical and Demographic Analysis utilizing written description and mapping</b> (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).
_____	<u>3</u>	A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference-Title 25, §71.21.a.1.i).
_____	<u>3</u>	B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference-Title 25, §71.21.a.1.ii).
_____	<u>4</u>	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, and areas unsuitable for soil dependent systems. (Reference-Title 25, §71.21.a.1.iii). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference-Title 25, §71.21.a.1.iii).
_____	<u>6</u>	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-Title 25, §71.21.a.1.iii).
_____	<u>7</u>	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-Title 25, §71.21.a.1.ii).
_____	<u>7</u>	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-Title 25 §71.21.a.1.vi). Section V.C. of the Planning Guide.



_____	<u>8</u>	G. Wetlands-Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per USDA, SCS 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-Title 25, §71.21.a.1.v). Appendix B, Section II.I of the Planning Guide.
_____	<u>9</u>	<b>III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs</b>
_____	<u>9</u>	A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:
_____	<u>9</u>	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-Title 25, §71.21a.2.i.A).
_____	<u>9</u>	2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's NPDES permitted capacity, and the Clean Streams Law permit number. (Reference-Title 25, §71.21.a.2.i.A).
_____	<u>9</u>	3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under Title 25, 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-Title 25, §71.21.a.2.i.B).
_____	<u>9</u>	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-Title 25, §71.21.a.4.i & ii).
_____	<u>9</u>	5. A detailed description of the municipality's operation and maintenance 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. (Reference-Title 25, §71.21.a.2.i.C).
_____	<u>10</u>	6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference-Title 25, §71.21.a.4.i & ii).
_____	<u>10</u>	B. Using DEP's publication titled <i>Sewage Disposal Needs Identification</i> , 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:
_____	<u>10</u>	1. The types of onlot systems in use. (Reference-Title 25, §71.21.a.2.ii.A).
_____	<u>10</u>	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 Sewage Facilities Act, the Clean Stream Law or regulations promulgated thereunder. (Reference-Title 25, §71.21.a.2.ii.B).
_____	<u>12</u>	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 Title 25 Chapter 73 (relating to standards for sewage disposal facilities). (Reference-Title 25, §71.21.a.2.ii.C).



- \_\_\_\_\_ 14 4. An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's *Sewage Disposal Needs Identification* publication. (Reference-Title 25 §71.21.a.2.ii.B).
- \_\_\_\_\_ 18 5. Detailed description of operation and maintenance 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 sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).
- \_\_\_\_\_ 19 C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:
- \_\_\_\_\_ 19 1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference-Title 25 §71.71).
- \_\_\_\_\_ 19 2. Quantities of the types of sludges or septage generated. (Reference-Title 25 §71.71).
- \_\_\_\_\_ 19 3. Present disposal methods, locations, capacities and transportation methods. (Reference-Title 25 §71.71).
- \_\_\_\_\_ 20 **IV. Future Growth and Land Development**
- \_\_\_\_\_ 20 A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
- \_\_\_\_\_ 20 1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference-Title 25, §71.21.a.3.iv).
- \_\_\_\_\_ 20 2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference – Title 25§71.21.a.3.iv).
- \_\_\_\_\_ 21 3. All limitations and plans related to floodplain and stormwater management and special protection (Ch. 93) areas. (Reference-Title 25 §71.21.a.3.iv) Appendix B, Section II.F of the Planning Guide.
- \_\_\_\_\_ 22 B. Delineate and describe the following through map, text and analysis.
- \_\_\_\_\_ 22 1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of EDU's in development, total number of EDU's currently developed and total number of EDU's remaining to be developed (include time schedule for EDU's remaining to be developed). (Reference-Title 25, §71.21.a.3.i).
- \_\_\_\_\_ 23 2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas. (Reference-Title 25,§71.21.a.3.ii). Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference-Title 25, §71.21.a.3.iv).
- \_\_\_\_\_ 23 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-Title 25, §71.21.a.1.iv). (Reference-Title 25, §71.21.a.3.iii).



26

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-Title 25, §71.21.a.3.iv).
  - public ground/surface water supplies
  - recreational water use areas
  - groundwater recharge areas
  - industrial water use
  - wetlands

27

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

28

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

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

29

1. The potential for regional wastewater treatment. (Reference-Title 25, §71.21.a.4).

29

2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference-Title 25, §71.21.a.4.i).

30

3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference-Title 25, §71.21.a.4.ii).

30

- a. Repair. (Reference-Title 25, §71.21.a.4.ii.A).

30

- b. Upgrading. (Reference-Title 25, §71.21.a.4.ii.B).

30

- c. Reduction of hydraulic or organic loading to existing facilities. (Reference-Title 25, §71.21.a.4.ii.C).

30

- d. Improved operation and maintenance. (Reference-Title 25, §71.21.a.4.ii.D).

30

- e. Other applicable actions that will resolve or abate the identified problems. (Reference-Title 25, §71.21.a.4.ii.E).

30

4. Repair or replacement of existing collection and conveyance system components. (Reference-Title 25, §71.21.a.4.iii.A).

30

5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference-Title 25, §71.21.a.4.iii.B).

31

6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.iii.C).

31

### **B. The use of individual sewage disposal systems including individual residential spray irrigation systems based on:**

31

1. Soil and slope suitability. (Reference-Title 25, §71.21.a.2.ii.C).

32

2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.D).

32

3. The establishment of a sewage management program. (Reference-Title 25, §71.21.a.2.ii.E). See also Part "F" below.

32

4. The repair, replacement or upgrading of existing malfunctioning systems in



areas suitable for onlot disposal considering: (Reference-Title 25, §71.21.a.4).

a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference-Title 25, §73.31-73.72).

b. Use of expanded absorption areas or alternating absorption areas. (Reference-Title 25, §73.16).

c. Use of water conservation devices. (Reference-Title 25, §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-Title 25, §71.64.d).

1. Treatment and discharge requirements. (Reference-Title 25, §71.64.d).

2. Soil suitability. (Reference-Title 25, §71.64.c.i).

3. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.64.c.2).

4. Municipal, Local, Agency or other controls over operation and maintenance requirements through a Sewage Management Program. (Reference-Title 25, §71.64.d). See Part "F" below.

D. The use of community land disposal alternatives including:

1. Soil and site suitability. (Reference-Title 25, §71.21.a.2.ii.C).

2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).

3. Municipality, Local Agency or Other Controls over operation and maintenance requirements through a Sewage Management Program (Reference-Title 25, §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-Title 25, §71.21.a.4).

1. Commercial, residential and industrial use. (Reference-Title 25, §71.63.e).

2. Designated conveyance facilities (pumper trucks). (Reference-Title 25, §71.63.b.2).

3. Designated treatment facilities or disposal site. (Reference-Title 25, §71.63.b.2).

4. Implementation of a retaining tank ordinance by the municipality. (Reference-Title 25, §71.63.c.3). See Part "F" below.

5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference-Title 25, §71.63.c.2).

F. Sewage Management Programs to assure the future operation and maintenance of existing and proposed sewage facilities through:

1. Municipal ownership or control over the operation and maintenance of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference-Title 25, §71.21.a.4.iv).

2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference-Title 25, §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-Title 25, §71.73.b.2).

33

4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference-Title 25, §71.21.a.4.iv) and §71.73.b.5 through:

33

- a. Aggressive pro-active enforcement of ordinances that require operation and maintenance and prohibit malfunctioning systems. (Reference-Title 25, §71.73.b.5).

33

- b. Public education programs to encourage proper operation and maintenance and repair of sewage disposal systems.

33

5. Establishment of joint municipal sewage management programs. (Reference-Title 25, §71.73.b.8).

33

6. Requirements for bonding, escrow accounts, management agencies or associations to assure operation and maintenance for non-municipal facilities. (Reference-Title 25, §71.71).

33

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

1. Modification of existing comprehensive plans involving:

33

- a. Land use designations. (Reference-Title 25, §71.21.a.4).

33

- b. Densities. (Reference-Title 25, §71.21.a.4).

33

- c. Municipal ordinances and regulations. (Reference-Title 25, §71.21.a.4).

33

- d. Improved enforcement. (Reference-Title 25, §71.21.a.4).

33

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

33

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

34

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-Title 25, §71.21.a.4).

34

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

34

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

34

1. Water Quality/Public Health. (Reference-Title 25, §71.21.a.4).

34

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

34

3. Community economic conditions. (Reference-Title 25, §71.21.a.4).

34

4. Recreational opportunities. (Reference-Title 25, §71.21.a.4).

34

5. Drinking water sources. (Reference-Title 25, §71.21.a.4).

34

6. Other environmental concerns. (Reference-Title 25, §71.21.a.4).

35

## VI. Evaluation of Alternatives

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

37

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-Title 25, §71.21.a.5.i.A). Appendix B, Section II.A of the



## Planning Guide.

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|---|---|
| <p>_____ <u>37</u></p> <p>_____ <u>37</u></p> <p>_____ <u>37</u></p> <p>_____ <u>37</u></p> <p>_____ <u>37</u></p> <p>_____ <u>37</u></p> <p>_____ <u>38</u></p> <p>_____ <u>38</u></p> <p>_____ <u>38</u></p> <p>_____ <u>38</u></p> | <p>2. <b>Municipal wasteload management Corrective Action Plans or Annual Reports</b> developed under PA Code, Title 25, Chapter 94. (Reference-Title 25, §71.21.a.5.i.B). The municipality's recent Wasteload Management (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.</p> <p>3. Plans developed under <b>Title II of the Clean Water Act</b> (33 U.S.C.A. 1281-1299) or <b>Titles II and VI of the Water Quality Act of 1987</b> (33 U.S.C.A. 1251-1376). (Reference-Title 25, §71.21.a.5.i.C). Appendix B, Section II.E of the Planning Guide.</p> <p>4. <b>Comprehensive plans</b> developed under the Pennsylvania Municipalities Planning Code. (Reference-Title 25, §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.</p> <p>5. <b>Antidegradation requirements</b> as contained in PA Code, Title 25, Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference-Title 25, §71.21.a.5.i.E). Appendix B, Section II.F of the Planning Guide.</p> <p>6. <b>State Water Plans</b> developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference-Title 25, §71.21.a.5.i.F). Appendix B, Section II.C of the Planning Guide.</p> <p>7. <b>Pennsylvania Prime Agricultural Land Policy</b> 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-Title 25, §71.21.a.5.i.G). Appendix B, Section II.G of the Planning Guide.</p> <p>8. <b>County Stormwater Management Plans</b> approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference-Title 25, §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.</p> <p>9. <b>Wetland Protection.</b> 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-Title 25, §71.21.a.5.i.I) Appendix B, Section II.I of the Planning Guide.</p> <p>10. <b>Protection of rare, endangered or threatened plant and animal species</b> as identified by the Pennsylvania Natural Diversity Inventory (PNDI). (Reference-Title 25, §71.21.a.5.i.J). Provide DEP with a copy of the completed Request For PNDI Search document. Also provide a copy of the response letter from the Department of Conservation and Natural Resources' Bureau of Forestry regarding the findings of the PNDI search. Appendix B, Section II.J of the Planning Guide.</p> <p>11. <b>Historical and archaeological resource protection</b> under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission. (Reference-Title 25, §71.21.a.5.i.K). Provide the department with a completed copy of a Cultural Resource Notice</p> |
|---|---|



request of the Bureau of Historic Preservation (BHP) to provide a listing of known historical sites and potential impacts on known archaeological and historical sites. Also provide a copy of the response letter from the BHP. Appendix B, Section II.K of the Planning Guide.

- \_\_\_\_\_ 38 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-Title 25, §71.21.a.5.ii). Appendix B of the Planning Guide.
- \_\_\_\_\_ 38 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-Title 25, §71.21.a.5.iii).
- \_\_\_\_\_ 38 D. Provide cost estimates using present worth analysis for construction, financing, on going administration, operation and maintenance 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 five years from the date of plan submission. (Reference-Title 25, §71.21.a.5.iv).
- \_\_\_\_\_ 39 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 five years from the date of the plan submission. (Reference-Title 25, §71.21.a.5.v).
- \_\_\_\_\_ 40 F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference-Title 25, §71.21.a.5.vi).
- \_\_\_\_\_ 40 1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of sewage management programs. (Reference-Title 25, §71.21.a.5.vi.A).
- \_\_\_\_\_ 40 2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a sewage management program justifying time schedules for each phase. (Reference-Title 25, §71.21.a.5.vi.B).
- \_\_\_\_\_ 40 G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - Title 25, §71.21.a.5.vi.D.).
- \_\_\_\_\_ 41 **VII. Institutional Evaluation**
- \_\_\_\_\_ 41 A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
- \_\_\_\_\_ 41 1. Financial and debt status. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ 41 2. Available staff and administrative resources. (Reference-Title 25, §71.61.d.2)
- \_\_\_\_\_ 41 3. Existing legal authority to:
- \_\_\_\_\_ 41 a. Implement wastewater planning recommendations. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ 41 b. Implement system-wide operation and maintenance activities. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ 41 c. Set user fees and take purchasing actions. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ 41 d. Take enforcement actions against ordinance violators. (Reference-Title 25,



§71.61.d.2).

_____	<u>41</u>	e. Negotiate agreements with other parties. (Reference-Title 25, §71.61.d.2).
_____	<u>41</u>	f. Raise capital for construction and operation and maintenance of facilities. (Reference-Title 25, §71.61.d.2).
_____	<u>41</u>	B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:
_____	<u>41</u>	1. Need for new municipal departments or municipal authorities. (Reference-Title 25, §71.61.d.2).
_____	<u>41</u>	2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference-Title 25, §71.61.d.2).
_____	<u>42</u>	3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference-Title 25, §71.61.d.2).
_____	<u>42</u>	C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
_____	<u>42</u>	1. Incorporation of authorities or agencies. (Reference-Title 25, §71.61.d.2).
_____	<u>42</u>	2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference-Title 25, §71.61.d.2).
_____	<u>42</u>	3. Description of activities to provide rights-of-way, easements and land transfers. (Reference-Title 25, §71.61.d.2).
_____	<u>42</u>	4. Adoption of other municipal sewage facilities plans. (Reference-Title 25, §71.61.d.2).
_____	<u>42</u>	5. Any other legal documents. (Reference-Title 25, §71.61.d.2).
_____	<u>42</u>	6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
_____	<u>42</u>	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-Title 25, §71.61.d.2).
_____	<u>43</u>	<b>VIII. Implementation Schedule and Justification for Selected Technical &amp; Institutional Alternatives</b>
_____	<u>43</u>	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:
_____	<u>43</u>	1. Existing wastewater disposal needs. (Reference-Title 25, §71.21.a.6).
_____	<u>43</u>	2. Future wastewater disposal needs. (five and ten years growth areas). (Reference-Title 25, §71.21.a.6).
_____	<u>43</u>	3. Operation and maintenance considerations. (Reference-Title 25, §71.21.a.6).
_____	<u>43</u>	4. Cost-effectiveness. (Reference-Title 25, §71.21.a.6).
_____	<u>44</u>	5. Available management and administrative systems. (Reference-Title 25, §71.21.a.6).
_____	<u>44</u>	6. Available financing methods. (Reference-Title 25, §71.21.a.6).



_____	<u>44</u>	7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference-Title 25, §71.21.a.6).
_____	<u>44</u>	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-Title 25, §71.21.a.6)
_____	<u>45</u>	C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a Sewage Management Program. (Reference – Title 25 §71.31d)
		<b>IX. Environmental Report (ER) generated from the Uniform Environmental Review Process (UER)</b>
_____	<u>na</u>	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: <i>An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.</i>



### ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS

Municipalities that propose to implement their official sewage facilities plan updates with PENNVEST funds must meet six 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 Uniform Environment Review (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)







## **PLAN SUMMARY**

### **A. PURPOSE**

The purpose and scope of this study is to develop a plan that can be implemented by the East Hanover Township (EHT) Supervisors to correct existing and future wastewater disposal problems in the Township. This study provides an analysis of existing and projected growth in the Township and what effect existing zoning regulations will have on growth patterns, as well as the ultimate effect a population increase would have on the sewage needs of the Township. This report contains short-term and long-term planning, and cost estimates for proposed facilities and methods to obtain the necessary sewer requirements that will promote planned population and economic growth within East Hanover Township.

The goals of the plan include:

- Develop a comprehensive data set on sewer related parameters that can be used as a basis for planning.
- Based on the data, identify service areas that require sewer and remedies for the largest problems.
- Insure that any selected alternative meets the requirements set forth in the Chesapeake Bay Initiative. Specifically, no new source of nutrient loading is created by this plan.
- Dedicate existing reserve capacity at the Dairy Lane Wastewater Treatment Facility (WWTF) to primarily serve existing residents with sewer needs.
- Create an administrative body to oversee the implementation of the plan.
- Identify and install ordinances necessary to further regulate individual sewage facilities.
- Derive a long-term implementation schedule based upon the financial capabilities of the Township and its residents.

### **B. PLANNING AREA DESCRIPTION**

East Hanover Township is a rural municipality located in eastern Dauphin County. The Township has a variety of land uses including: agriculture; industry; both large- and small-lot residential; and commercial, including large-scale commercial recreation near the Interstate 81 interchange with Bow Creek Road. The 2,043 housing units located in the Township equate to approximately 51 homes per square mile.

At the present time, public sewer serves a portion of the Township. The majority of properties uses individual on-lot sewage disposal systems (OLDS) and small flow sewage treatment facilities (SFSTF). The majority of these systems are functioning properly. However, there are a few locations in the Township that consist of older residential and commercial uses on small lots which may have sewage disposal problems, and therefore are of particular concern to the Township. These locations include areas near the Manada Creek and State Route 22, and neighborhoods along Trail Road, Canal Road, Shady Lane, Dairy Lane, Kelly Court, Ridge Road, and Pheasant Road. A delineation of problem areas was performed and an evaluation of site-specific repair and septic system management, versus public sewage alternatives, was conducted.



This Plan studied the entire Township as a Tier-One Sewage Needs Analysis. The Tier-One data was derived from documented malfunctions, well water contaminant sampling, and an OLDS Needs Survey. OLDS replacement suitability limitations were also analyzed using United States Dept. of Agriculture/Natural Resources Conservation Service (USDA/NRCS) soils data and an inventory of potential natural restrictions to development. These factors were considered in the delineation of needs areas.

For the purpose of delineating the Township into sewage management areas five (5) separate sectors were created. The plan utilized the general watersheds of the Bow Creek and the Manada Creek to separate the Township east and west. These two (2) broad districts were further separated on a north-south basis using existing major road arteries (US Route 81). This segregation also generally correlated to zoning districts.

In the case of the most northern sector of the Township (Study Sector 5), it was given its own dedicated district. The needs, lower population, state game lands and military reservation made it unique enough that individual planning was required. Appendix 3.8 is a map of the study sectors.

These areas were studied individually. Based on a Geographic Information Systems (GIS) compilation of the well water sampling, soil, survey and other data, a map depicting the areas of concern was created. The GIS assigned values to individual data points and summed them together. The summation of the points is then depicted through coloration, creating a “hot-zone” map. The results of the mapping are depicted in Appendix 3.13.

The mapping highlighted three (3) areas of concern that were to be given top-priority. These included:

- Hunter Lane, Red Fox Lane, Mill Road, Campbell Court, Circle Drive, Sycamore Lane, Chestnut Place, Carlson Road and Crooked Hill Road. These are located in the southwestern portion of the Township (problem areas 4.A & 4.B);
- Pheasant Road located in the southeastern portion of the Township and in close proximity to the Englewood and Partridge Hills sewer project. (Problem Area 2.E); and
- Dairy Lane located in the southeastern portion of the Township. (Problem Area 2.A).

Using the “hot-zone” map in comparison with existing infrastructure several alternatives were reviewed for these areas. The alternatives were parsed down based on feasibility.

### **C. CHOSEN ALTERNATIVE**

The selected alternative for this plan include:

- Install a collection system to service Hunter Lane, Red Fox Lane, Mill Road, Campbell Court, Circle Drive, Sycamore Lane, Chestnut Place, Carlson Road and Crooked Hill Road. By selecting this alternative the Township brings sewer to approximately 180 homes that are in an area that has shown a need.
- Extend sewer to Pheasant Road.



- Connect the homes on Dairy Lane to the approved and under design, Englewood sewer system.
- Based on the long-term schedule and financial commitments, the Township will form an Authority to execute this plan.
- The Township will develop a Small Flow Sewage Treatment Facilities Ordinance (SFSTFO) to regulate any proposed use of these types of systems.
- The Township will increase rates to insure sufficient capital reserve for the construction of new infrastructure.

#### **D. CHOSEN ALTERNATIVE COST**

Installation of a collection system to service Hunter Lane, Red Fox Lane, Mill Road, Campbell Court, Circle Drive, Sycamore Lane, Chestnut Place, Carlson Road and Crooked Hill Road is estimated to cost \$8,960,000. This will require the Township to initially raise sewer rates from the current \$640/year to \$700/year. From that point rates will have to be increased approximately 6.7 percent per year for the next 10-years.

Extension of sewer to Pheasant Road will cost approximately \$900,000 and the connection of those homes on Dairy Lane is estimated to cost \$16,850. Based on the proposed schedule these will not impact rates beyond those that are already projected (6.7 percent).

The costs of the formation of an Authority and the transfer of debt will be based on the legal and administrative fees associated with that alternative. A majority of these fees will be based on time and materials.

The creation of an SFSTFO is within the normal operations of a Township. The creation of this ordinance should not impact the current budget.

#### **E. MUNICIPAL IMPLEMENTATION COMMITMENTS**

East Hanover Township has the resources to implement the recommendation of this plan. By forming an Authority and transferring the administrative responsibility to the Authority, the execution of the major milestones is less likely to be encumbered by political changes.

In addition, the Township currently has a Sewage Management Program and Ordinance to oversee the maintenance of On-Lot Disposal System (OLDS) within the Township. To enhance the regulation of individual systems the Township will adopt a SFSTFO.



**F. SCHEDULE OF IMPLEMENTATION – MAJOR MILESTONES**

<b>MAJOR MILESTONE</b>	<b>DATE</b>
Connect the Dairy Lane Properties to the Sewer System (Alt. 2.A)	November 2011 (Only if construction is completed)
Start Design for the Pheasant Road Sewer Extension (Alt. 2.E)	November 2011
Create SFSTF Ordinance	February 2012
Complete Design and Permitting for the Pheasant Road Sewer Extension (Alt.2.E)	August 2012
Create the East Hanover Township Municipal Authority	February 2013
Bid the Pheasant Road Extension (Alt. 2.E)	October 2012
Complete Construction of the Pheasant Road Sewer Extension (Alt. 2.E)	December 2013
Start Design of the Study Area 4 Sewer Extension (Alt. 4.F)	August 2018
Complete Design and Permitting of the Area 4 Sewer Extension (Alt. 4.F)	February 2020
Bid the Study Area 4 Sewer Extension (Alt. 4.F)	April 2020
Complete Construction of the Study Area 4 Sewer Extension (Alt. 4.F)	April 2022



## **MUNICIPAL ADOPTION**







**A RESOLUTION OF  
EAST HANOVER TOWNSHIP,  
DAUPHIN COUNTY, PENNSYLVANIA**

**RESOLUTION NO. 2010-10**

**RESOLUTION FOR PLAN REVISION**

RESOLUTION OF THE SUPERVISORS OF EAST HANOVER TOWNSHIP, DAUPHIN COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted hereunder, Chapter 71 of Title 25 of the **Pennsylvania Code**, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, LTL Consultants, Ltd. has prepared a plan which provides for sewage facilities in portions of East Hanover Township, and the alternative of choice to be implemented is extension of municipal sewer service to properties along Pheasant Road (Alt. 2.E); Dairy Lane (Alt. 2.A); Hunter Lane, Mill Rd, Red Fox Lane, Campbell Court, Circle Drive, Sycamore Lane, Chestnut Place, Carlson Road, Ulrich Court, Steeple Chase Lane, and Crooked Hill Road (Alt. 4.F). The key implementation activities/dates include connection of properties along Dairy Lane (Alt. 2.A) within three (3) months after plan approval, creation of a Small Flow Sewage Treatment Facilities Ordinance within six (6) months from plan approval, establishment of the East Hanover Township Municipal Authority within eighteen (18) months of plan approval, complete construction of the Pheasant Road Sewer Extension (Alt. 2.E) within twenty-eight (28) months of plan approval, and complete construction of the Alternative 4.F Sewer Extension within ten (10) years from plan approval.

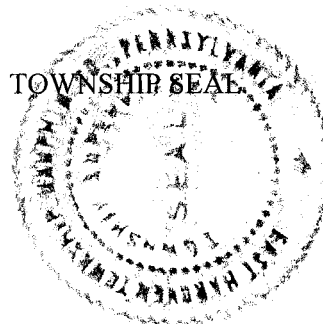
WHEREAS, The Township finds that the Facility Plan described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Supervisors of the Township of East Hanover hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, *Sharon A. Casey*, Secretary, East Hanover Township Board of Supervisors, hereby certify that the foregoing is a true copy of the Township's Resolution No. 2010-10 adopted October 19, 2010.

AUTHORIZED SIGNATURE

*Mark Upchurch*







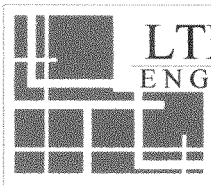


## **PLANNING COMMISSION COMMENTS**









# LTL CONSULTANTS, LTD.

ENGINEERS & CODE OFFICIALS

PO BOX 241

ONE TOWN CENTRE DRIVE

OLEY, PA 19547

ph: 610-987-9290

fax: 610-987-9288

## LETTER OF TRANSMITTAL

DATE: JULY 15, 2010

JOB NUMBER: 0507-0803

RE: EAST HANOVER TOWNSHIP – ACT 537 PLAN  
UPDATE – AGENCY REVIEW

TO: Dauphin County Planning Commission  
c.o. Tri-County Regional Planning Commission  
Dauphin County Veterans Memorial Building  
112 Market Street, 2<sup>nd</sup> Floor  
Harrisburg, PA 17101

ATTN: Leah P. Rowand, Planner

WE ARE SENDING YOU:

☒ ATTACHED

☐ UNDER SEPARATE COVER

☐ PRINTS

the following items;

SENT VIA: US MAIL

☐ OTHER: \_\_\_\_\_

COPIES	DATE	PAGES/SHEET NO.	DESCRIPTION
1	July 8, 2010	191	EHT – Act 537 Sewage Facilities Draft For Public and Agency Review

THESE ARE TRANSMITTED AS CHECKED:

☐ FOR YOUR USE

☐ FOR APPROVAL

☐ AS REQUESTED

☒ FOR YOUR REVIEW AND COMMENT

REMARKS: Leah – As discussed, please find attached the East Hanover Township (EHT) Act 537 Plan Draft for your review and comment. Please note that the Township Board of Supervisors has established an Agency Review /Comment form July 22 to September 22, 2010. I respectfully request that any official comments be carbon copied to me at the address above. Please feel free to contact us with any additional questions regarding. Thanks - Leo

Very truly yours,  
LTL Consultants, Ltd.

COPY TO: Deb Casey:(via email)  
file

Signed

NAME: Leo R Scott

TITLE: Community Planner / GIS Analyst



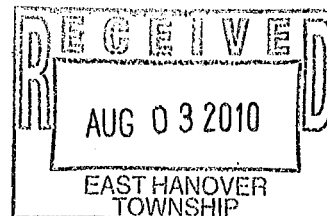




# DAUPHIN COUNTY PLANNING COMMISSION

DAUPHIN COUNTY COURTHOUSE - HARRISBURG, PENNSYLVANIA 17101

STAFF OFFICE  
112 Market Street, 2nd Floor  
Harrisburg, Pennsylvania 17101-2015  
Telephone 717 234-2639  
Fax 717-234-4058  
e-mail: [planning@tcrpc-pa.org](mailto:planning@tcrpc-pa.org)



August 3, 2010

East Hanover Township Board of Supervisors  
8848 Jonestown Road  
Grantville, PA 17028

Re: Act 537 Sewage Facilities Plan - Review/Comments  
East Hanover Township, Dauphin County

Dear Board of Supervisors,

The Dauphin County Planning Commission had the opportunity to review the above-noted plan at its August 2, 2010 meeting. The Commission commends the Township on this effort to maintain compliance with the PA Sewage Facilities Act, and thereby providing its citizens and businesses with an up-to-date sewage facilities program. The following comments are focused on consistency with county, regional and state planning programs, not the technical/engineering elements of such a document.

The plan's primary purpose is to correct existing and future wastewater disposal needs. Included in the plan are goals related to comprehensive data set that will be the base for planning; to identify the largest problem areas and provide remedies for those, to insure compliance with the Chesapeake Bay Initiative, to dedicate existing reserve capacity, the creation of an administrative body to oversee implementation, to develop necessary regulations to further control OLDS and to develop a long-term implementation strategy.

The document is consistent with the PA DEP General Act 537 Plan Checklist elements and subelements. The proposed plan is consistent with the Dauphin County Comprehensive Plan, particularly the following strategies: Promote and encourage development where existing infrastructure exists with available excess capacity, rather than extending services into new areas and increasing costs to both the developer and the municipality/authority that operates the sewer treatment plant; and Encourage and assist local governments to adopt and implement official municipal sewage plans (Act 537 Plans) that adequately plan for public collection and treatment, as well as on-lot sub-surface systems.

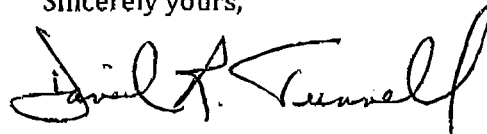
The proposed plan is consistent with the Tri-County Regional Planning Commission's Regional Growth Management Plan, 2003, especially the strategies that relate directly to Community Facilities and Services, Housing and Land Use.



The Commission would encourage the Township to explore the use of planning tools that would allow for the increase in density in those appropriate areas within the existing sanitary sewer areas. This would further reduce the OLDS Management program cost.

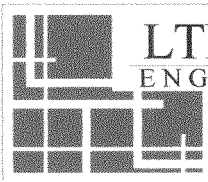
The Dauphin County Planning Commission supports the adoption of the East Hanover Township Act 537 Plan by the Township Supervisors. Should there be any questions concerning this review, please contact Leah P. Rowand, Staff Planner at the Commission's office. Thank you for the opportunity to review this Plan.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Daniel R. Tunnell". The signature is fluid and cursive, with a large, stylized "D" and "T".

Daniel R. Tunnell  
Chairman





# LTL CONSULTANTS, LTD.

ENGINEERS & CODE OFFICIALS

P O BOX 241

ONE TOWN CENTRE DRIVE

OLEY, PA 19547

ph: 610-987-9290

fax: 610-987-9288

## LETTER OF TRANSMITTAL

DATE: JULY 15, 2010

JOB NUMBER: 0507-0803

RE: EHT – ACT 537 PLAN UPDATE – PUBLIC  
AND AGENCY REVIEW DRAFTS FOR  
DISTRIBUTION

TO: East Hanover Township Planning Commission

8848 Jonestown Road

Grantville, PA 17028

ATTN: Dawn Eppinger, Secretary

WE ARE SENDING YOU:

☒ ATTACHED

☐ UNDER SEPARATE COVER

☐ PRINTS

the following items;

SENT VIA: PERSONAL DELIVERY

☐ OTHER: \_\_\_\_\_

*By John Theisen*

COPIES	DATE	PAGES/SHEET NO.	DESCRIPTION
1	07/08/10	191	Hardcopy Draft Plan for PC Review
2	07/08/10	191	Hardcopies of Draft Plan For Public Review (To D. Casey)
4	07/14/10	NA	CD's Containing PDF Version for PC Review
1	07/14/10	NA	CD Containing PDF Version for Township Solicitor
1	07/14/10	NA	CD Containing PDF Version for Stein Consulting
1	07/14	NA	CD Containing PDF Version for Light Heigel & Associates

THESE ARE TRANSMITTED AS CHECKED:

☒ FOR YOUR USE

☐ FOR APPROVAL

☐ AS REQUESTED

☐ FOR YOUR REVIEW AND COMMENT

REMARKS: Dawn - As discussed, attached are the copies of the plan for EHT Planning Commission and Public Review. EHT Planning Commission Review of the Plan is scheduled for July 22 to September 22. Final comments from the PC must be received by the BOS by September 22. Please contact me if additional copies are required. CD versions are recommended. Feel free to contact me with any additional questions you may have. Thanks – Leo.

Very truly yours,

LTL Consultants, Ltd.

COPY TO: file

Signed

NAME: Leo R Scott Jr.

TITLE: Community Planner / GIS Analyst







# DRAFT – SUBJECT TO CHANGE

## PLANNING COMMISSION WORKSHOP MINUTES EAST HANOVER TOWNSHIP DAUPHIN COUNTY, PENNSYLVANIA 8848 JONESTOWN ROAD, GRANTVILLE, PA 17028

**August 31, 2010**

Members Present: Michael Webb, Vice Chairman;  
Glenn Moyer, Member; Michael Kovach, Member  
Member Absent: Marie Beaudet

Also Present: Dawn Eppinger, Administrative Assistant to the Planning Commission  
Heather Sloniger, Planning Commission Candidate

**This meeting was audio taped. The tapes are strictly for the use of the Administrative Assistant for clarification during preparation of the minutes.**

The meeting was called to order by Vice Chair Mike Webb at 7:10 p.m. .

### **AGENDA ITEMS**

#### **1. Approval of the July 27, 2010 Meeting Minutes**

- Vice Chair Mike Webb asked for a motion for the meeting minutes.
- **Mr. Moyer made a motion to recommend approval of the meeting minutes of July 27, 2010. The motion was seconded by Mr. Kovach. Being no further discussion, the motion was approved 3 in favor, 0 opposed.**

#### **2. Zoning Ordinance, Immediate**

- Mr. Webb asked if there was a time limit on making a recommendation.
- Mrs. Eppinger noted it was her understanding it was discussed at the July meeting about the Dauphin County comments being the last piece before it goes before the Board of Supervisors.
- Mr. Webb asked if LTL made any changes to the draft which was submitted.
- There was discussion regarding the submission of changes to the ordinance
- Mr. Webb noted he didn't believe there was any deadline
- Mr. Kovach and Mr. Webb noted they have not seen any changes come through yet
- Mrs. Eppinger noted Ms. Beaudet spoke at an earlier meeting being concerned with the deadline because reimbursements for grant monies
- Mr. Webb noted the comprehensive plan was also part of a grant which was put on indefinite hold
- There was discussion regarding the determination of stock piling
- Mr. Webb noted it was his understanding there was going to be additional changes; his noted it should be a single ordinance and not a series of ordinances



## DRAFT – SUBJECT TO CHANGE

- There was discussion regarding making a recommendation would be premature, especially if there are changes coming
- Mr. Kovach added maybe the recommendation should be to table this item until everything is received that was promised.
- Mr. Kovach also noted they cannot recommend to reject it because there is no deadline
- Mr. Webb added it is not a plan; there is no legal requirement to move any faster.
- Mr. Webb noted the recommendation should be that both Mr. Smith and Mr. Wyland be contacted to find out when they are going to have their modifications to the ordinance available for review
- It was agreed upon to do this by consensus to table the item

### 2. Act 537 Plan

- Mr. Webb apologized for not having sent his changes out earlier. He noted he found some wording that needs to be re-worked.
- He noted the first item was on Page 10, Item #2, the Sanitary Survey, Tier 1, first paragraph. The second sentence reads, “the final number of usable returned surveys was 1,594; 546 surveys were returned. He noted he feels an error was made and the first figure would be the number of surveys they sent out with a return rate of 34%. He noted he feels they misspoke on the first sentence and should have been the number of surveys sent out.
- Mrs. Eppinger noted she had Ms. Lisa Sweigert’s cell phone number and offered to call her for clarification.
- Mr. Webb answered if Mrs. Eppinger sends her a copy of the comments or he could provide something. Mrs. Eppinger read the note which was provided to her from Mrs. Casey
- Mr. Webb brought up population projections for 2010. He thought at this point they may be able to get real population numbers from the census and noted no projections were done beyond 2010.
- He noted if they were going to make an estimate on 2010, they would be doing four projections for 2020 and 2030 or 2010 and 2015; considering usually 537’s are not re-done more than 10 years or so. If they are planning for a 10-year time window, he noted they might want to do the projections a little past that.
- On page 39, he noted there is a serious typo. Under the funding analysis on the second chapter it says, “to accomplish this, the Township will have to initially raise rates to \$640 per quarter from \$640 per quarter to \$700 per quarter.”
- Mr. Webb noted \$640 not currently not charged per quarter. It is \$640 per year. He noted it is a typo, but should have gotten picked up when they did their proof.
- He noted the projections at the end of 10 years with a 7% increase, the rate will be \$350 per quarter, which does not include inflation which will be tacked on top of it.
- He did a map based on information on Page 44, option 4F, selected alternative and financing plan is based on the data. He noted if you take a look at the cost, which is \$8+ million and the number of people that is serving, the cost per person



## DRAFT – SUBJECT TO CHANGE

is approximately \$50,000 per household. He added he found it difficult to believe this was the least expensive alternative.

- Mr. Webb also noted on one of the other thing he noticed reading the analytical for the data, they made a statement that a 10% quality control was performed but nowhere either in the appendices or anywhere did it show or give any data as to how good the quality control was.
- Mr. Webb noted a number of years ago the laboratory that they used gave up significant portions of their certification in order to avoid losing it; he added there is no indication as to what the quality of the data is at this point they are using to make their determination.
- He added the last comment he would make is when he read it, and got to the end of it, he had some real concerns in that it looked like someone had a pre-determined decision as to what the outcome was going to be and then they went hunting for proof that they needed to come to that point. That to him was not the way the process was supposed to work. From that point, he feels it is an extremely flawed area.
- He noted there was a statement in the report that said the soils of the Township were not suitable for on-lot septic systems. If you look at the examples of failures that they have in the report, all of them were able to be replaced with a standard or a sand lot system. There was not a single one that required an alternative system.
- Mr. Webb also noted another thing that had him concerned was they had a fairly high number of coli forms but a very low number of fecals showing up. His concern is the data they were using is nowhere in there was there any indications that they had gone back to determine well construction on any of the failures to try to determine whether or not the failure was due to poor well construction in getting surface water in it or whether or not it due to ground water contamination, which would seriously change the percentage of failing systems.
- Mr. Webb commented he argued early on that what they should have been doing was selecting systems that had modern cased appropriately constructed wells for their test.
- Mr. Kovach noted that would come back to the idea that they came up with the idea and then finding the data to back it up.
- Mr. Webb also commented that looking at nitrate contamination is not necessarily in an agricultural area a result of failing on-lot septic systems. It can be more likely due to manure and/or fertilizer application in the agricultural fields abutting the areas where the wells are. Particularly since ammonium nitrate is not well retained by soil matrices and it will spread significantly from wherever the application is if it is overdone.
- Mr. Webb noted we had a very low percentage of wells that triggered the 10 milligram per liter range for having a serious problem with nitrates.
- Mr. Kovach noted they could recommend rejecting it.
- Mr. Webb answered he is really unhappy with what he perceives to be the use of the way the data was used and the supporting data for making the decision.



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- He commented the Planning Commission had sent back the Hilton Garden's sewage plan because they hadn't done a good alternatives analysis. He asked Mr. Kovach if he saw any alternatives analysis and Mr. Kovach answered no.
- Mr. Kovach asked what the implications are if the Planning Commission votes to reject.
- Mr. Webb answered the Township Supervisors can do whatever they please.
- Mr. Kovach commented, "let's assume they go with our recommendation".
- Mr. Webb answered the Planning Commission would need to indicate why they feel that it is not well presented. Then they either decide to take another look at the data or do some supplemental work on the existing data to see if it still supports where it's at or takes a look at other alternatives for what they are doing.
- He noted they made some statements in there about not building a plant closer to where they felt the need was going to be because they were making the statement they would need another employee, but they don't use full-time employees at the existing plant. It might require somebody to have to commute but he didn't think it necessarily translated to, particularly since Partridge Hills and Englewood are going to be going there. 4F was not either of those, it was another area they were going to try and pipe all the way across and it was a necessity for the additional pump stations that were part and parcel of that to get it to the existing system.
- Mr. Kovach noted the need or lack thereof for an additional employee should not drive this.
- Mr. Webb answered the Township should be looking at capital costs, not necessarily at the operational costs because the operational costs truthfully are small "potatoes" relative to whatever. He added he is not even sure they provided enough data to demonstrate that sewage was absolutely necessary in the areas that they were claiming. He added he was underwhelmed by the quality of the data.
- Mr. Moyer noted it was basically a southwest corner that they would have to tie into where Partridge Hills and Englewood is now.
- Mr. Webb answered he thought there was at least one more if not two more pump stations they would have to use to get to it.
- He also noted it was very difficult to read the maps, which were placed at the very end of the document.
- Mr. Webb added for the future growth potential map, a lot of the parcels that they picked are Hershey parcels.
- He noted Map 318, Future Sewer Areas, they show sewage on Ridge Road, they show Partridge Hills and then all the way over on the western edge of the Township, they have a whole bunch of them that are tied together and then they have a line that goes all the way across basically from one side to the other down to the plant and it doesn't tie into either Englewood or Partridge feeds.
- Mr. Kovach noted he could not read the map very well either.
- Mr. Webb noted he can increase the size for viewing on his computer, but when he looked at it what he can up with was they are very close to the West Hanover



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area and it may actually be cheaper for both the Township as well for them to develop a collaborative agreement with West Hanover and pump it to them. Rather than using the capacity of the Dairy Lane plant, it would still allow the Dairy Lane plant to continue to feed the other areas that are on the one side of the plant.

- Both he and Mr. Kovach added it is a long run. Mr. Kovach added they were serving very few.
- Mr. Webb pointed on the map and showed the members where there were 3 pump stations. He noted he didn't see any type of a situation where they were looking at possibly tying into a neighboring sewer system.
- Mr. Kovach pointed out that is something that may already be in existence.
- Mr. Kovach and Mr. Webb looked at the run on Ridge Road on the map and Mr. Kovach noted it is almost up to station because it's the high point.
- Mr. Webb added he looked for but didn't see a real understanding of where their data points were because they simply identified where there were coli forms picked up not where the fecals were and the fecals are a much better indicator that you actually have a failing septic system.
- Mr. Kovach asked if the members read the attachment. He noted there are a lot of general statements in it.
- Mr. Kovach read from the statement page of the waivers which were being submitted.
- Mr. Webb pointed out that would be for the SALDO waiver because they want to avoid having to do any planning whatsoever for the pump stations. He noted that is down further in the agenda.
- Mr. Kovach asked where all the failures are at.
- It was noted by Mrs. Eppinger that the information he read from goes with the waiver packet.
- Mr. Kovach noted that it ties into the Act 537. He asked where they are getting all the data.
- Mr. Webb answered the number of failing systems they found were not that high. He noted he was surprised. They had the ones that were a potential to fail.
- Mrs. Eppinger noted Englewood and Partridge Hills is being mandated by DEP
- Mr. Webb answered it is only being mandated because one of the Board of Supervisors at one point signed a consent order of decree. The moment they signed that, they committed to sewerage it whether or not they needed it or not. That was part of the agreement having to do with the main sewer plant. DEP used the leverage of the sewer plant and what they could have assessed in fines for the ongoing continual failures to get them to agree with it.
- Mr. Moyer noted it was back in Phase I about 10 years ago.
- Mr. Webb continued at the time they probably made the assessment that it was cheaper to say yes they would do it than try to put it off which is what they did. He noted it would have been cheaper to connect them then instead of waiting for 10 years.
- Mr. Webb noted a the background information took up a lot of space, a lot of



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which was not necessarily pertinent. He asked Mr. Kovach and Mr. Moyer if they made their case for having to sewer all those other areas.

- Mr. Kovach answered no.
- Mr. Moyer said absolutely not. He does not think they did. He added they don't have any proof of what data that they have to really substantiate saying what they said.
- Mr. Webb answered not in the document and it was not provided as an appendix.
- Mr. Kovach asked why not recommend delaying approval of the plan pending citing of data sources.
- Mr. Webb answered he thinks is making a case that there are a significant number of failures or that there is reasonably expected to be a significant number of failures that cannot be corrected onsite. He added if you look at the table where they show all the failures that occurred at this point, they were all correctable on the existing lots.
- Mr. Kovach noted he would like to see the number of actual failures and how many of the failures are correctable on site.
- Mr. Moyer noted almost all the properties, other than in the developments have enough property to move their systems. He added the developments have no place to go so they could not correct the problem.
- Mr. Webb answered even on some of the other properties, even if the septic system was not moved, even though it would be expensive, you could go in and remove and rebuilding with a sand mound and effectively replace a failing system with a sand mound.
- He added he has two problems with the report at this point. One is there is no economic determination on what the alternative cost would be and looking at it, he noted he feels there has to be a cheaper way of doing this than spending \$50,000 per house in an area, that as far as he could tell, they weren't indicating had large significant or had any failures at this point that he was aware of that had not been corrected. There is no indication in here that in this area there were five failing systems that cannot be corrected or 10 out of the 180.
- Mr. Webb noted there are some advantages to setting up an authority, but that has more to do with being able to get funding. An Authority would remove control from the Supervisors on price increasing.
- He add that on the flip side one of the problems with having it Township controlled and owned is that the Township are reluctant to raise rates, no monies are put aside and then when something happens, there is a huge sticker shock to the entire system.
- Mr. Webb noted he has a real problem with 7% a year, which is what they are proposing. If indeed this is a Township initiative, he believes the Township should be looking for finding ways to fund it without basically hammering just the people that are on the septic system.
- He added there are two ways. Either the people that get the system pay for the new system because they need it or the Township needs to find a way to cough up a percentage of it as opposed to just spreading it among the limited amount of



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people that are on the septic system.

- Mr. Kovach answered that is a tough sell. How will you sell that to the individuals who have a perfectly functioning sand mound that they spent \$10,000 to \$15,000 to build
- Mr. Webb added it is a no-win situation. He noted what people have to appreciate is that the cost of sewers when people start looking at doing development for individuals that have vacant property will find the value of the property will be less if the cost of sewerage is high. All of a sudden sewers are no longer a benefit, but become a liability; particularly at the direction this is going.
- He added the other thing is they will cram as many properties in as they can on the development process in order to maximize their return..
- His noted a concern of his is if a sewer line is run all the way across half the Township on the southern tier, you have effectively opened up an area for much more dense housing than what we currently have in those areas. People will argue along the sewer line that you change the zoning to medium or high density.
- He also noted that if it is approved, it should be zoned like that because that is where the infrastructure is..
- Mr. Kovach commented when working on the comprehensive plan, all the comments received were to avoid that very situation.
- Mr. Webb answered it goes back to, if indeed you can prove to him they really need sewage over there, we need to consider how we can do that, what the costs associated are with doing that without necessarily running a line halfway across the Township. He added that was a personal view, but in an effort to try and keep the Township as rural as possible.
- Mr. Kovach commented they all pretty much agree they don't like it a presented.
- Mrs. Eppinger asked for a formal recommendation for the Board of Supervisors.
- **Mr. Webb made a motion to recommend to the Board of Supervisors that the plan as presented not be accepted; that the plan needs additional documentation of need of additional sewerage based on actual failures that have occurred that cannot be corrected on lot and that their alternatives other than the ones that have been chosen need to have more detail indicating why they were not acceptable and the economics behind it, specific justifications.** Mr. Webb commented for the amount of money that they spent to do the plan, he was appalled at the lack of data. **Mr. Kovach seconded the motion. Being no further discussion, the motion was approved, 3 in favor 0 opposed.**

### 3. Preserve at Bow Creek (Keystone Custom Homes)

- Mr. Webb asked what the item on the agenda was.
- Mrs. Eppinger answered Mr. Smith brought this up at the July meeting where he was talking about the number of issues that people are having with setbacks.
- There was discussion regarding the plan being approved under one set of ordinances and then when the owner buys the property they are bound to the new set of ordinances.



### **SHIRK SUBDIVISION – GRANT OF AN EXTENSION OF TIME**

It was noted a grant of an extension of time for the Shirk Subdivision was received.

- **Mr. Rish made a motion to accept the grant of an extension for 30 days until November 19, 2010. Mr. Shutt seconded the motion. The motion was approved 5 in favor, 0 opposed.**

### **K.L. TYNDALE – LETTER OF CREDIT**

Tyndale installed the generators for the pump stations. They are asking for the release of the letter of credit in the amount of \$26,338.50. Everything is up and running.

- **Mr. Marshall made a motion to return the letter of credit to K.L. Tyndale in the amount of \$26,228.50. Mr. Nelligan seconded the motion. The motion was approved 5 in favor, 0 opposed.**

### **FIRE POLICE REQUEST – PAXTANG BOROUGH POLICE DEPARTMENT**

Paxtang Borough has requested the use of the East Hanover Fire Police for the Paxtang Lions Club Halloween Parade on Tuesday, October 26<sup>th</sup>. The request came through the Grantville Volunteer Fire Co. Fire Chief, Saul Schmoltz.

- **Mr. Nelligan made a motion to authorize the East Hanover Township Fire Police to attend the Paxtang Halloween Parade to be held on Tuesday, October 26<sup>th</sup> provided they have the personnel to cover the event. Mr. Shutt seconded the motion. The motion was approved 5 in favor, 0 opposed.**

### **BUDGET WORKSHOP – ADVERTISE**

- **Mr. Rish made a motion to allow Mrs. Casey to advertise for a Budget Workshop on October 14<sup>th</sup> at 7:00 PM at the Township Building. Mr. Nelligan seconded the motion. The motion was approved 5 in favor, 0 opposed.**

### **OTHER BUSINESS FROM THE BOARD**

Mr. Marshall noted on October 7<sup>th</sup>, the Water and Sewer Committee will be meeting at the Township building at 7:00 PM. He asked what the wish of the Board is for any Planning Commission comments on the Act 537 Plan. The time has expired for comments and we have not received any official comments from the PC.

- Mr. Rish felt it would have been nice if the Planning Commission had sent something in writing, but they did have comments and questions in the minutes and he felt those should be addressed and answered in the 537 Plan.
- Mr. Nelligan felt since the Planning Commission did not give their questions and concerns in writing, there are no comments.
- Chairman Espenshade noted it would be up to Mr. Hannum to pick and choose what he would respond to from the minutes. Mr. Hannum had a concern about what would be responded to. Mr. Rish noted the Planning Commission did make some recommendations, but he did not want to be the one picking out what concerns should be addressed.



- Mr. Marshall noted he spoke with Marie Beaudet, Chairman of the Planning Commission, and she requested several times to get the comments together since was not able to attend the meeting where the comments were presented. Mr. Marshall felt their comments should be considered, but he is also not going to pick out what comments should be addressed. He felt since the comments were not presented in writing, they do not get addressed. The PC was given the opportunity to present its comments, but did not do so.
- Chairman Espenshade noted the Planning Commission's recommendation will be put into the plan but would it be possible to note the comments were not formally received. Mr. Marshall commented Mr. Hannum will note in the 537 Plan that there was not a formal response from the Planning Commission. Since no formal response was received, it will be assumed that the PC agrees with the plan.
- Mr. Stein suggested that Mr. Hannum respond to the questions and the response would only be to those questions that were within the purview of the Planning Commission. Most of its comments were outside of the purview of what it should be speaking to.
- By consensus of the Board, Mr. Stein's suggestion will be presented to Mr. Hannum. Discussion continued.

Solicitor Wyland noted LTL requested the Township put together a blasting ordinance for the sewer project. The ordinance was presented to the Board today. LTL has reviewed the ordinance, provided comments and it is ready to be advertised. LTL would like to attach the ordinance to the RFP's for the project so that potential bidders know they have to follow the ordinance. The Board needs to understand that LTL may attach the draft to the RFP's before the Board acts on it.

- This will be on the agenda for the next meeting

## **BUSINESS FROM THE PUBLIC**

Chuck Mundy Way commented he saw in the newspaper that the Supervisors defended the Township from a civil action taken by a Township resident. He attended the last meeting and there was no mention in the minutes that the Board took any action to defend the Township's position. He felt this was a violation of the Sunshine Law.

- Mr. Mundy asked what the cost to the Township was, at this point, to defend the lawsuit. Solicitor Wyland noted the Township has an insurance policy and when a claim is received, it is turned over to the insurance company for defense. The Township has a \$1,000.00 deductible. A preliminary injunction was scheduled for about 4 days after the Township received the pleadings from the plaintiff. The \$1,000.00 has been spent already and that is what it will be charged for the defense. The Township's insurance carrier will pay the rest.
- Mr. Mundy asked if that would include anything awarded to the litigant. Solicitor Wyland noted it would. Discussion continued.
- Mr. Mundy asked if the Township has taken official action to appeal the decision. Solicitor Wyland noted there was no decision issued by the Middle District Court. There was some press that got the preliminary injunction completely wrong. The



Court indicated it will be issuing an order staying the case for 120 days and nothing more. That issue has not yet been received.

- Mr. Mundy asked if there was any indication given that the ordinance needs to be changed. Solicitor Wyland noted there were discussions among the parties about voluntarily reviewing the ordinance content and report back to the Court during the period of stay. There was no requirement or order for the Township to change its ordinance. Discussion continued. Solicitor Wyland noted there were other issues with the original sign besides the language. It was in the Township right-of-way and nailed to a tree. The sign would have to come down no matter what it said. New signs were posted that had the language removed and there was no action taken with respect to the new signs since there was no indication that the new signs violated the ordinance as to being in the right-of-way or nailed to a tree. The Zoning Officer initially reacted to the original sign because of complaints received by the Township that the language was not suitable.
- Mr. Mundy asked if the Board, in the future, would be transparent in its policy to undertake or defend litigation. Mr. Marshall noted the Township has insurance for these issues and the insurance company has made the decision.
- Chairman Espenshade asked if Mr. Mundy is asking the Board if it is going to take a vote to defend a lawsuit. He did not feel the Township has any choice as to not defend a lawsuit. Solicitor Wyland noted you automatically have to defend a suit. You have to act in the interest of the Township and it would be malpractice if you did not defend it.
- **Chairman Espenshade made a motion to defend against the suit brought upon the Township by Mr. Kliss. Mr. Marshall seconded the motion. The motion was approved 5 in favor, 0 opposed.**
- Mr. Epstein noted the Township was not served in a timely manner for a Board vote. If you are sued and there is a hearing date, what happens if you don't show up.

Wayne Isett noted on the ditch area that the Air Guard won't be doing, that is now going into the bid process. He appreciated all the work the Air Guard has done which has saved the Fire Co. a lot of money.

**Mr. Nelligan made a motion to adjourn the meeting. The meeting was adjourned at 8:30 PM.**

Respectfully submitted,

Deborah A. Casey

cc: Keith Espenshade  
John Nelligan  
Dave Marshall  
Thomas Shutt  
George Rish  
Hawke, McKeon & Sniscak

Charles Longreen  
Planning Commission  
Light-Heigel & Associates  
Posted  
Zoning Hearing Board  
LTL Consultants

Curt Cassel  
Eric Epstein





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October 7, 2010

VIA E-MAIL

East Hanover Township Board of Supervisors  
8848 Jonestown Road  
Grantville, PA 17028

Re: Review of East Hanover Township Planning  
Commission Workshop Minutes for August 31,  
2010.

Gentlemen,

We have reviewed sections of the East Hanover Township Planning Commission Workshop Minutes from August 31, 2010 pertaining to the Agency Review of the Draft Act 537 Sewage Facilities Plan. At this time, the Board of Supervisors has received no official submission of comments.

It should be noted that the goal of this letter is to be neither argumentative toward the Planning Commission's discussion, nor to reflect negatively on their efforts. It is intended to interpret the meaning of the discussion held at the workshop and provide our perspective on issues presented in the minutes.

Due to the volume and conversational nature of the minutes, we have attempted to break them down into statements pertaining to the Planning Commission's role in advising the Board of Supervisors regarding sewage facilities planning. Comments of an editorial nature in the Draft shall not be discussed in this letter.

Several statements recorded in the minutes identify concerns with the plan's methodology. In particular the quantity, quality, and interpretation of the data has come into question. The minutes imply that technical alternatives were pre-determined and that the data was used to defend these alternatives after the fact. The commissioner's statements in the meeting minutes directly question the validity of the plan and warrant special consideration in our summary.

**Regarding data quantity and quality** - The majority of data used for the plan was derived from a 2006 survey conducted by authorized agents of the Township with an actual sample return rate much higher than average. This data was field verified as directed by the Pennsylvania Department of Environmental Protection (PADEP). Secondly, well water samples were conducted and tested under the direction and cooperation with PADEP. A PADEP certified laboratory conducted water testing and split samples were used to maintain Quality Control. Further, the Township Sewage Enforcement Officer presented on-lot malfunction data to LTL



Consultants, Ltd. for analysis. Due to the volume of the data, it was not included in the body of the plan.

Regarding the additional data used in the plan, electronic data was obtained by a myriad of sources, some of which are the US Geological Survey, US Department of Agriculture, the Federal Emergency Management Agency, Tri-County Planning Commission, and many others. A summary of the origin, nature, and use of this data was provided in the end of the mapping section.

**Regarding data interpretation** – Once compiled and field verified the data was analyzed per standards set forth in PADEP Documentation and under consultation with PADEP representatives throughout the process. Analysis and consideration of alternatives, both technical and administrative were done in accordance with the Act 537 Plan Content and Environmental Assessment Checklist Form (3800-FM-WSWM0003). As a part of the planning process, this Checklist becomes the first portion of the plan to be reviewed and verified by PADEP.

It is our assertion that the methodology and data used in the plan were done so in a method approved by PADEP and the Township. To the best of our ability, we have reviewed this data for accuracy and did not use it in any attempt to move forward any private agenda.

Pertinent statements are transcribed below in bold italics.

- ***“Mr. Webb brought up population projections for 2010. He thought at this point they may be able to get real population numbers from the census and noted no projections were done beyond 2010.”***

Projections extended to 2020 based the Dauphin County Comprehensive Plan and the East Hanover Township Land Use Assumptions Report (LUAR) completed in 2009. Interpretation of this data is currently being used in the Draft Comprehensive plan and was also used in the Act 537 Plan to ensure consistency. As of today, the US Census Bureau has not released sufficient results of the 2010 census.

- ***“He did a map based on information on Page 44, option 4F, selected alternative and financing plan is based on the data. He noted if you take a look at the cost, which is \$8+ million and the number of people that is serving, the cost per person is approximately \$50,000 per household. He added he found it difficult to believe this was the least expensive alternative.”***

This statement appears to imply that the plan does not indicate the actual financial impact to individual households and that a large expense project is the goal of the plan. In the evaluation of the alternatives, it was apparent that a significant number of homes in the western portion of the Township are located in an area having elevated nitrates, coliform and frequency of OLDS Malfunctions. This shows a serious threat to public safety, health, and welfare.

Secondly, the cost of \$50,000 per household was not calculated as actual cost to be paid by each household. The capital-financing plan proposed as well as the funding analysis provides construction funds through sources other than just the individual homeowners to be served by the project.



- *“He added the last comment he would make is when he read it, and got to the end of it, he had some real concerns in that it looked like someone had a pre-determined decision as to what the outcome was going to be and then they went hunting for proof that they needed to come to that point. That to him was not the way the process was supposed to work. From that point, he feels it is an extremely flawed area.”*

This issue has been addressed on pages 1 and 2 of this letter.

- *“Mr. Webb noted he can increase the size for viewing on his computer, but when he looked at it what he can up with was they are very close to the West Hanover area and it may actually be cheaper for both the Township as well for them to develop a collaborative agreement with West Hanover and pump it to them. Rather than using the capacity of the Dairy Lane plant, it would still allow the Dairy Lane plant to continue to feed the other areas that are on the one side of the plant.”*

Consideration of this alternative has been given in sections V and VI. Reasons for its rejection are also provided in these sections.

- *“Mr. Webb noted a the background information took up a lot of space, a lot of which was not necessarily pertinent. He asked Mr. Kovach and Mr. Moyer if they made their case for having to sewer all those other areas.”*
- *“Mr. Kovach answered no.”*
- *“Mr. Moyer said absolutely not. He does not think they did. He added they don’t have any proof of what data that they have to really substantiate saying what they said.”*

These statements are addressed on pages 1 and 2 of this letter.

- *“His noted a concern of his is if a sewer line is run all the way across half the Township on the southern tier, you have effectively opened up an area for much more dense housing than what we currently have in those areas. People will argue along the sewer line that you change the zoning to medium or high density.”*
- *“He also noted that if it is approved, it should be zoned like that because that is where the infrastructure is.”*
- *“Mr. Kovach commented when working on the comprehensive plan, all the comments received were to avoid that very situation.”*
- *“Mr. Webb answered it goes back to, if indeed you can prove to him they really need sewage over there, we need to consider how we can do that, what the costs associated are with doing that without necessarily running a line halfway across the Township. He added that was a personal view, but in an effort to try and keep the Township as rural as possible.”*

It should be noted that the existence of a high-pressure sewer main would not effect or redirect growth. It is not being recommended that any additional tap-ins be made to the main in alternative 4f. It’s intent is to act as a bridge for existing areas of need.

As the funding analysis and overall spirit of the Plan dictate, the remaining existing capacity of the Dairy Lane WWTP should be used for existing problems. New development in outlying



areas would be addressed through funding from the developer, thus acting as a control on additional sprawl in the less densely developed areas. This is intended to be consistent with the draft Comprehensive Plan.

- ***“Mrs. Eppinger asked for a formal recommendation for the Board of Supervisors.”***
- ***“Mr. Webb made a motion to recommend to the Board of Supervisors that the plan as presented not be accepted; that the plan needs additional documentation of need of additional sewerage based on actual failures that have occurred that cannot be corrected on lot and that their alternatives other than the ones that have been chosen need to have more detail indicating why they were not acceptable and the economics behind it, specific justifications. Mr. Webb commented for the amount of money that they spent to do the plan, he was appalled at the lack of data. Mr. Kovach seconded the motion. Being no further discussion, the motion was approved, 3 in favor 0 opposed.”***

As discussed at length above, PADEP's standards have been applied to the plan's data and methodology. It should be also noted that throughout the development of the plan, presentation of results and alternatives were made to the Board of Supervisors and to the Water and Sewer Committee in public sessions with no participation from the Planning Commission at the meetings.

It is our hope that we have provided a concise breakdown of the issues presented by the Planning Commission Workshop minutes from August 31, 2010. Moving forward, we would request that the Board of Supervisors consider this letter a reference to the response it must make and not as a response itself. We look forward to your direction.

Please feel free to contact us with any additional questions regarding.

Sincerely,



Leo R Scott Jr.  
Community Planner,  
Water & Wastewater Department

Cc: Christopher M. Hannum, LTL Consultants  
Scott Wyland, Solicitor  
Water and Sewer Subcommittee

File: M:\Engineering\East Hanover Township - 07\0507-0803 ACT 537 UPDATE\PUBLIC AGENCY REVIEW\AGENCY COMMENTS\Review of PC Workshop 08-31-10 100710.doc



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THE SUNDAY PATRIOT NEWS

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Under Act No. 587, Approved May 16, 1929

Commonwealth of Pennsylvania, County of Dauphin} ss

Holly Blain, being duly sworn, deposes and says:

That she is a Staff Attorney for the Commonwealth of Pennsylvania, Harrisburg, County of Dauphin, publisher of general circulation newspapers of general circulation The Patriot-News and The Sunday Patriot-News, all have been continuously published.

That the printed notice is published daily and/or Sunday/ Metro and is interested in the subject matter, place and character of publication.

That she has personally reviewed the same on behalf of The Patriot-News Company, stockholders and board of directors, in and for said County of Dauphin.

**PUBLICATION COPY**

East Hanover Township, Dauphin County:  
Act 537 Sewage Facilities Plan Update  
Public Review and Comment  
The East Hanover Township Board of Supervisors (BOS) hereby notifies the public that an Official Act 537 Sewage Facilities Plan Update for East Hanover Township (EHT) will be on file at the Township Building, EHT is considering the update for adoption. The public may review the update and submit written comments to Deb Casey, Secretary, East Hanover Township at 8848 Jonestown Road, Grantville, PA 17028.  
The Plan will respond to comments before adoption.  
The update's purpose is to guide sewer facilities within EHT. Goals include planning for sewage facility sustainability within EHT for the next ten (10) years and address existing problems related to On-Lot Sewage Disposal Systems (OLDS) in the Township.  
Areas identified as needing remediation are along Dairy Ln., and Pheasant Rd. Other areas of concern are Hunter Ln., Mill Rd., Red Fox Ln., Campbell Ct., Circle Dr., Steeplechase Ln., Sycamore Ln., Chestnut Pl., Carlson Rd., Ulrich Ct., and Crooked Hill Rd.  
The plan analyzes conventional public and on-lot sewage disposal alternatives. Geographic, environmental, and economic considerations have led to the following alternatives:  
In 2011, extend sewer service to properties on Dairy Ln. and Pheasant Rd. as part of the Partridge Hills and Englewood Sanitary Sewer Project, currently under design.  
By 2021, design and construct a collection system serving the other areas of concern mentioned above. Sewage will be transferred to the Dairy Lane Wastewater Treatment Facility via pump station.  
Establish a municipal authority and capital reserve fund for the sound operation and management of the system.  
Review and update sewage management ordinances. If necessary and adopt a Small Flow Sewage Treatment Facility Ordinance to protect surface waters in EHT.  
Quarterly fees are estimated to change township-wide from \$640 to \$700 per equivalent dwelling unit (EDU) in the first year after approval of the plan. An estimated 6.7% increase is anticipated for subsequent years to fund operations and maintenance and establish funding for the proposed project in 2021. Tapping fees are currently estimated at \$3,484 per EDU. Costs are dependent on outside funding.  
PADEP (Chapter 71) requires this notification. A thirty-two day period is established from July 22 through August 22, 2010 to allow public comment on the proposed Plan. Review is welcome on weekdays from 8:00 am to 4:30 pm at the EHT Municipal Building at 8848 Jonestown Road, in Grantville.  
Deborah A. Casey  
Secretary/Treasurer  
717-469-0833

uses and says:

Co., a corporation organized and existing under the laws of the State of Pennsylvania, at its place of business at 812 to 818 Market Street, in the City of Harrisburg, and publisher of The Patriot-News and The Sunday Patriot-News at 812 to 818 Market Street, in the City, County and State aforesaid; that published March 4th, 1854, and September 18th, 1949, respectively, and

are attached hereto is exactly as printed and published in their regular issue date(s) indicated below. That neither she nor said Company is advertising, and that all of the allegations of this statement as to the time,

resaid and is duly authorized and empowered to verify this statement on behalf of the Company, pursuant to a resolution unanimously passed and adopted severally by the board of directors and subsequently duly recorded in the office for the Recording of Deeds and Conveyances, Volume 14, Page 317.

ad # 0002080619 ran on the dates shown below:

July 18, 2010

Holly Blain

Sworn to and subscribed before me this 19 day of July, 2010 A.D.

Sherrie L. Kisner  
Notary Public

COMMONWEALTH OF PENNSYLVANIA

Notarial Seal

Sherrie L. Kisner, Notary Public  
Lower Paxton Twp., Dauphin County  
My Commission Expires Nov. 26, 2011

Member, Pennsylvania Association of Notaries



The Patriot-News Co.  
2020 Technology Pkwy  
Suite 300  
Mechanicsburg, PA 17050  
Inquiries - 717-255-8213

The Patriot-News  
Now you know

EAST HANOVER TOWNSHIP BOARD OF SUPERVISORS

ATTN: DEB CASEY

8848 JONESTOWN ROAD

GRANTVILLE

PA 17028

THE PATRIOT NEWS  
THE SUNDAY PATRIOT NEWS

**Proof of Publication**

Under Act No. 587, Approved May 16, 1929

Commonwealth of Pennsylvania, County of Dauphin} ss

Holly Blain, being duly sworn, deposes and says:

That she is a Staff Attorney for the Commonwealth of Pennsylvania, Harrisburg, County of Dauphin, and is the publisher of the newspapers of general circulation in the County of Dauphin, The Patriot-News and The Sunday Patriot-News. All have been continuously published since March 4th, 1854, and September 18th, 1949, respectively, and are published daily and/or Sunday/ Metro.

That the printed notice of publication is attached hereto and is exactly as printed and published in their regular issue on the date(s) indicated below. That neither she nor said Company is interested in the subject matter of the notice of publication, and that all of the allegations of this statement as to the time, place and character of publication are true.

That she has personally reviewed the said notice of publication and is duly authorized and empowered to verify this statement on behalf of The Patriot-News Company, a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, pursuant to a resolution unanimously passed and adopted severally by the stockholders and board of directors of said Company, and subsequently duly recorded in the office for the Recording of Deeds in and for said County of Dauphin, in Volume 14, Page 317.

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July 18, 2010

Holly Blain

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Sherrie L. Kisner  
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COMMONWEALTH OF PENNSYLVANIA

Notarial Seal

Sherrie L. Kisner, Notary Public  
Lower Paxton Twp., Dauphin County  
My Commission Expires Nov. 26, 2011

Member, Pennsylvania Association of Notaries



## **WRITTEN PUBLIC COMMENTS AND RESPONSES**







**Concerns and comments to East Hanover Township Board of Supervisors  
Pheasant Road extension of the Partridge Hills sewer plan**



July 30, 2010  
East Hanover Township, Dauphin County  
Board of Supervisors ( BOS )  
8848 Jonestown Road  
Grantville, PA 17028

Dear BOS,

I want to thank you for your service to the residents of this township. I have resided on Pheasant Road for 24 years and I need to raise my comments and concerns about the revision to the Partridge Hill sewer plan that includes the extension on Pheasant Road - west to Sandbeach Road (Alt. 2E – Draft Act 537 Plan). My comments deal with well water quality, malfunctioning on-lot disposal systems, and the cost effective statements in the Draft Act 537 Plan. Furthermore, I am dismayed that on the 11<sup>th</sup> hour prior to submitting this draft for Commonwealth review, you have approved adding neighborhoods to the near-end construction cycle that were not previously included. Accordingly, the residents of Pheasant Road have had no time to prepare and budget for the expense of connection.

The portion of Pheasant Road between Meadow Road and Sandbeach Road appears to have three properties identified with a coliform condition. One of these properties is on Hill Drive near the intersection of Pheasant Road, and is not able to connect to a Pheasant Road gravity pipe. The remaining two identified properties on Pheasant Road are directly across the road from each other at the intersection with Hill Drive. This suggests a localized problem among these three sites. Coliform is a serious health concern, but because it can occur naturally, and because no fecal contaminations are present, the residents must treat their well water regardless of a sewer connection. A sewer will not solve this particular coliform situation. In addition, the nitrate situation on Pheasant Road seems actually to be a condition with a property on Hill Drive. This lot is in hydric soil that has experienced previous run-offs of agricultural nutrients draining from the elevated land on Pheasant Road. Hill Drive residents are not going to be connected to the sewer, and agriculture will not return to the elevated land above them. A sewer line on Pheasant Road will not solve a nitrate situation in wells along Hill Drive if caused by a previous agricultural land-use, or caused by residents during the succeeding 25 years over-applying lawn fertilizer.



**Concerns and comments to East Hanover Township Board of Supervisors**  
**Pheasant Road extension of the Partridge Hills sewer plan**

*Continued*

Confirmed malfunctioning systems along Pheasant Road have been few. Two malfunctioning lots were found and corrected several years ago. Both of these locations are in the area near the junction with Meadow Lane. This area is in an identified hydric area, or flood plain, and is situated near 15% sloped landscape. Both these lots have had their septic systems repaired according to the Draft. However, both lots are near the original terminus for the proposed Partridge Hills gravity pipe and should be connected later if their geology will cause another failure. A third lot on Pheasant Road, nearer Sandbeach Road, is listed as having a septic holding tank. This is a unique situation and not representative of the ability of other lots in this region to safely process waste water. A holding tank on a property is not a failed system, but rather a chosen alternative to a more permanent solution. These three examples do not require or justify sewerage Pheasant Road to the intersection with Sandbeach Road.

My final concern is the “cost effective” phrase that is repeatedly stated in the Draft. Since sewerage the entire length of Pheasant Road will neither correct any well water conditions, nor will remedy any existing failed on-lot systems, there is no “effectiveness” in this alternative – only cost. It is insensitive to residents that the Draft highlights that this plan should be approved because it will be paid entirely by connection fees. Those fees, plus the property owner’s plumbing costs, represent hardship to every resident that must pay. Approximately 1/3 of all households along the Pheasant Road Extension are retired. Since the Supervisors have chosen to quickly include Pheasant Road in the initial phase of the Partridge Hills sewer plan, the Board has chosen to accept the insensitivity of the authors of this Draft, and have agreed with their suspect benefit analyses.

The proposed alternative to include the entire length of Pheasant Road in the Partridge Hills sewer system will not correct any conditions along its route. Well water quality will not be improved along its path, or the exempted Hill Drive lots, because on-lot septic is not the source of identified concerns. Neither will a Pheasant Road gravity sewer correct any failed on-lot systems – there aren’t any lots with malfunctions. Old malfunctions that were corrected should not be justification to force this matter. In conclusion, just because the Township would not incur lasting indebtedness to extend the sewer to the intersection with Sandbeach Road, does not mean it is a benefit for residents. Somebody is writing those connection fee checks and the checks to their plumbers. The check-writers will not see any cost effectiveness or remedy any health concerns along Pheasant Road. And with little notice of this proposal, residents will have to struggle to fund this surprise mandate.

Forrest J. Graeff  
291 Pheasant Road  
Grantville, PA 17028



----- Forwarded Message -----

From: "David Boyd" <dmb\_jo@msn.com>

To: "ehsupervisors" <ehsupervisors@comcast.net>, chrishannum@ltlconsultants.com

Sent: Saturday, August 14, 2010 1:37:43 AM

Subject: Act 537 Plan comments/concerns

Dear Board Of Supervisors and Chris Hannum:

I attempted to clarify some general questions/concerns re: sewage issues in an e-mail to the BOS on 7/26/'10 as well as attending the Twp. meeting, 8/03/'10, with no immediate success since the e-mail was considered by those in official attendance to be related to the Act 537 Plan. I was informed it would be responded to by letter from Mr. Hannum.

The following is information I have compiled from Township meeting minutes that were derived from the Township Web Site archives from 2004 up until the present, as of July 20, 2010, as well as other pertinent information. I have many notes/meeting minute copies, etc., with reference dates to substantiate all that I am presenting if it is required or do as I have done and dig into the meeting archives.

The Draft, July 8, 2010, Act 537 Sewage Facilities plan was submitted by the latest engineering firm, LTL Consultants, LTD. with Mr. Hannum as the lead engineer presenting the project. Previous wastewater planning listed on that draft included a concise history of the progression of the various Act 537 Plan updates and due to time/expediency constraints, could not cover the total history or background.

I feel it is important to look more in depth at some information that comes from that history or progression.

The following paragraph from the July 8, 2010 draft is key or most central in importance to that progression:

"In July of 2004, The Township(BOS) signed a Consent Order & Agreement (COA) with the Pa Department of Environmental Protection (DEP) to address issues with the existing wetlands wastewater treatment facility. In accordance with the COA, the Township has since constructed a new treatment facility, which was put into operation on **Oct. 26, 2005**, and has been operating successfully."

The Township Board Of Supervisors (BOS) meeting minutes, 10/04/05, pages 7-10 has a wealth of information exchanged that is central/pivotal to this scenario.

One critical statement that has been mentioned numerous times, past/present that somehow has been either lost or ignored is: The Act 537 Plan will be revised for the ENTIRE Township within the next 18 months following the startup of the new plant which would have been Feb. 26, 2007.

It is now Aug. 2010, three years past the due date and the Act 537 Plan is still a work in progress, no fault attributed to LTL.

( This Act 537 Plan material will be continued as a Microsoft Word Document attachment to this e-mail to complete my concerns! )



There has been a multitude of “facts”, “statements”, “information”, “miss-information”, “conjecture”, “unsubstantiated comments”, etc., etc., too numerous to mention so I will list some, as follows:

Act 537 Plan initially was for all of East Hanover Twp., Dauphin Co., then it got separated into sections of varying levels of importance or needs.

Partridge Hills/Englewood was included in Act 537 per statement on pg.15, 2/07/06, of BOS meeting minutes, “DEP agreed that Act 537 Plan revision would include Partridge Hills & Englewood. Also pg.5, 2/21/06, when Ms. Tammie Myers, Eng. / Benetec Assoc. noted, “Those areas will be done concurrently. DEP agreed to allow the Twp. to process those 2 areas on a “fast track” so they can be put into the Plan immediately.”

Roger Phillips, latest Eng. after Ms. Myers was “left go”, noted 8/01/06, pg.7 BOS minutes, “The result of a Twp. wide study is the intent to sewer the entire Twp.” Chair. Beaudet noted, “That was not her intent.” but also noted, “Partridge Hills/Englewood had to be included.” Mr. Marshall suggested, “Allow Mr. Phillips to go ahead with only doing the study on Partridge Hills/Englewood.”

9/05/06, pg.6, Mr. Phillips said, “The Component 3M, which is a planning module for land development for municipal projects to deal with existing, failing systems is currently being reviewed.” “This will take out known failing systems from the review and will be an actual design to serve those areas and not a plan.” (There was no mention of E./P.H. being this 3M module.) Meeting minutes, 3/20/07, pg.3, Now it becomes 3M of the Act 537 Plan. 4/17/07, pg.3, “The expiration date of the (COA) Consent Order is April 26<sup>th</sup>. (MORE DOUBLE TALK!)

7/17/07, pg.4, Mr. Phillips, “No wells were sampled that exceeded the EPA limit of acceptable Nitrate level.” Pg.5, he also noted, “The language on the COA indicates that sewage needs to be addressed in the 2 areas.” (Partridge Hills/Englewood)

6/03/08, pg.6, BOS meeting minutes, Chairman Beaudet said, “The Township suggested a Partridge Hills/Englewood roll over into the 537 Plan instead of the Component 3M, but DEP didn’t allow it to wait for an update completion.”

This thing of being included ( *See BOS mtg. 2/07/06, pg 15 and 2/21/06, pg.5 noted previously.*), now it is suggested and rejected.

Pg. 9, Mr. Hannum noted, “It would take approximately one year from now to complete (Act 537) and would cover everyone. With that said, it goes way past the 18mo. Completion after WWTP on line,10/26/05.

2/04/09, Special Meeting, pg.22, M.Beaudet said, “DEP decided it was not going to wait for the Act 537 Plan so the planning was *shifted* from the 537 Plan to the Comp.3M.”

7/20/10, pg.7, BOS mtg., Mr. Marshall noted, “Partridge Hills/Englewood were not part of the Act 537 Plan. They were part of the 3M Component.” (This contradicts his previous statement on 2/07/06, pg.15.) (QUITE CONFUSING )

Today, 8/13/10, I just read, in the Patriot News Community section, an article regarding the sewer issue that had a statement from Chairman Espenshade that somewhat addressed a question/comment I had in my unanswered e-mail to the BOS on 7/26/10 . He said, “Clarification is needed in the township’s sewer ordinance (98-5). He said state law ( PA Second Class Township Code) says homes that are 150 feet from sewer facilities to a house *can be mandated* to connect, while the township ordinance *requires* houses that are 150 feet from sewer lines to connect.”

Confusion along with indecisiveness between all local and state parties has run rampant over the last six to ten plus years on the subject of Act 537.

The on again, off again, inclusion, exclusion aspect with no clear direct answers has not been endearing to many within East Hanover Township.

Economically speaking, the majority of the citizens in this township, as well as the administration have



been fighting an uphill battle to resolve a very difficult environmental situation. This is happening along with trying to maintain the other every day, ongoing, business activities that keep occurring.

The timing of this Act 537 Plan could not have been worse!

It is almost like waking a hibernating bear (DEP) from its 10 or 15 year sleep. Now it is time to deal with it because it won't go away.

Questions need answers that are clear and concise to resolve the many issues that have been presented to both the Township and to DEP, such as :

1) If a sewer line/system is going past properties does the DEP have the right to ignore or override the law of PA Second Class Township Code and/or Township Ordinances just to satisfy their varying mandates?

2) Since some sewer systems, Partridge Hills/Englewood, are being "separated" from the overall Act 537 Plan now and accelerated into a sooner hookup than others along the path lines are placed, why can't, or shouldn't, other houses along that path be able to hook on ? Wouldn't it be better economically/engineering wise to do it now rather than later?

3) There are many in this township that are not able to pay for so much being required above and beyond what they have money for, now or in the near future, without just selling or leaving the mess to others. Is there some type of assistance they will be able to tap into to prevent giving up? If there are programs for these situations then they have to be made available and understandable, sooner than later!

4) Some townships have been inundated with the after effects of sewage installations being installed and having malfunctions that have been worse than doing nothing. Also the infrastructure, roadways, driveways, yards, etc. have not been repaired or brought back into reliable condition. Are there safeguards that will be in place to remedy those conditions/possibilities? Who is to be held responsible to safeguard this project, the state or the township?

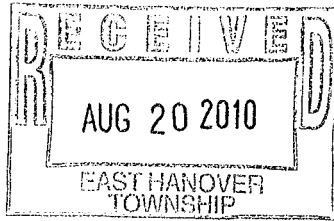
5) If by chance other houses are to be required to hook on to the existing WWTP, and capacities are exceeded or close to being exceeded, is there some magic available to increase capacity quickly? Will it be cost effective or excessive? The more required to hook on the sooner it gets paid off and the sooner a reduction in fees will occur to make it cost effective!

6) Since most of East Hanover Twp. consists of a predominant rural nature, other areas that may require sewer systems will probably need their own, more closely orientated waste treatment facility. Have long term plans been activated to remedy that situation?

I have spent more time and energy on this situation for now so please accept what I have written in light of what and how it has been presented and hopefully you will understand my perspective.



**STEVENS & LEE**  
**LAWYERS & CONSULTANTS**



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Direct Fax: (610) 371-7366

August 19, 2010

Board of Supervisors  
East Hanover Township  
8848 Jonestown Road  
Grantville, PA 17028

**Via E-Mail: ehsupervisors@comcast.net**  
**and Regular First Class Mail**

Re: Comment to Proposed Act 537 Plan

Dear Board of Supervisors:

We represent Skyview Crossroads, LP ("Skyview"), the equitable owner of three properties located on the north side of Allentown Boulevard near the East Hanover Township border with West Hanover Township. In fact, one of the properties is bisected by the boundary line between the Townships. On September 2, 2008, the Board of Supervisors adopted Ordinance No. 2008-03, which rezoned the East Hanover Township portions of these properties to Highway Commercial.

On behalf of Skyview, we have reviewed the proposed Act 537 Plan. Language within the Plan on pages 29 and 36 indicates the use of sewer facilities in West Hanover Township to serve the properties. Skyview supports this planning because of the need for public sewer at the properties for development consistent with the zoning and the distance between the East Hanover Township sewer facilities and the properties. Use of the facilities already existing in West Hanover Township is the most cost-effective and practical method for providing sanitary sewer service to the properties.

Thank you for your attention to this matter, and should you have any questions, do not hesitate to contact us.

Very truly yours,

STEVENS & LEE

A handwritten signature in black ink, appearing to read "Ronald M. Lucas".

Ronald M. Lucas

cc: Skyview Crossroads, LP

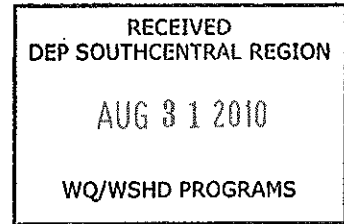
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A PROFESSIONAL CORPORATION



August 28, 2010

Lisa Sweigert  
LTL Consultants, Ltd.  
PO Box 241  
One Town Centre Drive  
Oley, PA 19547



RE: ACT 537 Sewage Facilities Plan  
Draft for Public and Agency Review Date July 8, 2010  
East Hanover Township, Dauphin County

Dear Ms. Sweigert,

I contacted your colleague Mr. Chris Hannum on Tuesday August 24, 2010 and he informed me that I could provide comments on this plan even though the closing date for public comments was Sunday August 22, 2010. Thank you for the opportunity to comment on the East Hanover Township ACT 537 Draft Plan.

This can be an emotional and fiery issue for many affected residents and I don't envy the position of the Board of Supervisors or the consultant. I understand that East Hanover Township must abide by all requirements of the standing Consent Order and Agreement with the PA DEP and I find it commendable that the township has the foresight to look to the future for planning sewage needs.

The majority of my comments are intended to make a more clear and concise plan, however I would like clarification on alternative selection and the decision making process used. I think it may be more appropriate to evaluate alternatives using a benefit to cost ratio. This is a typical method used for many governmental and capital improvement projects. The advantage of using benefit to cost analysis is that the method provides a more direct comparison of alternatives and can remove subjective and ambiguous information from the decision making process. Please clarify how alternatives are objectively selected.

I request that the township inform residents on Pheasant Road of this impending work. I live on this street and most residents are not aware of the planned sewer extension. At a minimum the township should correspond with affected residents in the same manner as residents in the Partridge Hills and Englewood developments. Courtesy letters should be sent stating that public sewer extensions may soon affect them and that they should plan for the financial burden.

Page viii, last line - Pheasant Run Road, should be Pheasant Road.

Page viii, last sentence -- I think additional problem areas can be identified. Please explain why the area of Meadow Lane, Colt Drive and County Line Road in the eastern portion of the township is not a problem area. At first glance it appears to have many potential and suspected OLDS malfunctions, is in close proximity with an existing gravity sewer main extension, and



may be readily served by gravity sewer extension. Yet this area is not even evaluated for sewerage.

Page ix, fifth and sixth paragraph - Explain why the three areas of concern are given top priority. I fail to see how the “hot-zone” map (Appendix 3.13) highlights areas of concern. For example Area 2.C and 2.B as well as Area 1.A seem much “hotter” than Area 2.E yet Area 2.E is selected for implementation. Please provide a better justification for alternative selection and implementation other than “The alternatives were parsed down based on feasibility.” Since the accepted portion of the 2.E alternative removes Hills Drive from implementation all data from Hills Drive residences should be removed from “hot-spot” mapping if that is a decision tool.

Page x, Section D, first paragraph – Please provide a cost table showing anticipated yearly and quarterly sewage rates so that residents truly know what to expect in the future such as:

Year	Annual Rate	Quarterly Rate
0	\$700	\$175
1	746.90	186.73
2	796.94	199.24
3	850.34	212.59
4	907.31	226.83
5	968.10	242.03
6	1032.96	258.24
7	1102.17	275.54
8	1176.02	294.00
9	1254.81	313.70
10	1338.88	334.74

Page x, Section D, second paragraph – Cost estimate for Pheasant Road extension is not updated. Please update and correct all appropriate cost estimates in the document.

Page ix, Section F – Please provide a justification on the schedule of implementation. It appears that alternatives 2.A and 2.E are to be implemented as soon as practical but that alternative 4.F will not be implemented for seven years. Is this a financial decision necessary to create the capital reserve fund prior to a large capital project like 4.F?

Page 8, G. Wetlands – I don’t think the SALDO acronym is defined prior to this. Please verify and correct if necessary. SALDO is defined on page 20.

Page 10, 2. Sanitary Survey, paragraph 1 – The second sentence states that “The final number of usable, returned surveys was 1594.” Yet the third sentence states that 546 were returned. Should the second sentence state that 1594 surveys were “sent” and 546 “returned”? This should be rewritten for clarity.



Page 10, 2. Sanitary Survey, paragraph 2 – Please state the number of surveys sent in 2009 for water well sampling in order to verify that 15% of the surveys were returned. Also, I believe this information is more appropriate for Section 4 on page 14 regarding Individual Water Supply Survey (Water Well Sampling).

Page 13, Study Sector 2 –Map 3.9 lists many malfunctions as “Suspected Malfunctions” and “Potential Malfunctions” that I assume have not been verified. The township sewage enforcement officer should further investigate “suspected” and “potential” malfunctions to verify decisions prior to implementation.

Page 15, Problem Area Analysis – I believe this should be a separate section in the document. It applies to OLDS malfunction as well as water sample results and doesn’t necessarily “fit” under the 4. Individual Water Supply Survey section.

Page 29, 2. Sewer Extension Potential, first paragraph – I fail to see how capital construction costs alone can define project feasibility without considering the project benefits such as revenue generation, elimination of environmental hazards, controlling growth and land development, etc.

Page 30, first bullet – How is an area of need defined? Hot-zone mapping? Please clarify.

Page 35, 1.A.1 – The basis of rejection seems to be that you can service this area with a gravity sewer and not a pump station. Please explain why that is a bad thing and clarify the basis of rejection. Appendix 4.1, Alternative 1.A.1 doesn’t show a pump station. What am I missing? Please provide a better explanation and justification for rejecting alternative 1.A.1.

Page 35 and 36, Technical Alternatives Considered Table - At what point is this statement valid; “Cost is not justified based on the number of homes served”.

Page 35, 2.E – I don’t believe this alternative corrects “existing on-lot failures.” It is shown in Map 3.9 that “potential” on-lot malfunctions are within this area but not “existing on-lot failures.” Furthermore, any extension can meet the goal of utilizing existing capacity and conveyance.

Page 39, Cost Estimate Table – Please add a column for cost per EDU. This provides a different perspective on alternative selection. Apparently economical costs per EDU are approximately \$40,000 (Alternatives 2.E and 4.F) but are not economical at approximately \$50,000 (Alternatives 1.A.2 and 2.D). An explanation of economic feasibility would be helpful to justify alternative selection. A benefit to cost analysis may be a more appropriate evaluation tool.

Page 39, second paragraph - should state \$640 per year to \$700 per year, not per quarter.

Page 44, 6. second paragraph – should state \$640 per year to \$700 per year, not per quarter.

Map 3.18 – Is the intent of this map to show all evaluated Alternatives? If so, please add Alternatives 2.C and/or 2.D. If that’s not intended, I see no reason to shown 1.A.1 and 2.B if the

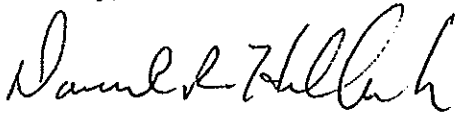


August 28, 2010

map represents "selected" future sewer service areas. Also, new sewer mains, gravity mains and low pressure mains are all the same color and line-type. A unique color would help define the systems better.

Thank you again for the opportunity to comment on this draft plan. I look forward to reviewing the final plan and working with interested parties in the future to ensure the community of East Hanover Township continually moves forward in the difficult challenge of providing fair and adequate sewage service for all residents.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniel R. Helfrich". The signature is fluid and cursive, with the first name being the most prominent.

Daniel R. Helfrich  
323 Pheasant Road  
Grantville, PA 17028

cc: ACT 537 Draft file  
Mr. David Gates, PADEP, SCRO  
East Hanover Township Board of Supervisors  
PA Representative Ronald S. Marsico



**Lisa Sweigert**

**Subject:** FW: SEWER QUESTIONS FOR PARTRIDGE HILLS

**From:** ehsupervisors@comcast.net [mailto:ehsupervisors@comcast.net]

**Sent:** Tuesday, August 31, 2010 9:01 AM

**To:** debcasey2002@comcast.net

**Subject:** Fwd: SEWER QUESTIONS FOR PARTRIDGE HILLS

----- Forwarded Message -----

**From:** dkliss436@comcast.net

**To:** ehsupervisors@comcast.net

**Cc:** dkliss436@comcast.net

**Sent:** Monday, August 30, 2010 6:45:49 PM

**Subject:** SEWER QUESTIONS FOR PARTRIDGE HILLS

Below are some questions I would like answered.

1. What are the specs for the waste line from the home to the lateral? What is the % slope? What type of rock to used above and below the pipe? How deep for the rock?
2. Is a back flow preventer required? A check valve? A flapper valve? Who is responsible for back up from the system? I understand it is gravity from Partridge Hills to the pumping station then pressurized from there. What is the pump fails?
3. Basements will not be hooked up? Shouldn't this be a case by case situation? Eliminating basement facilities could have a drastic negative property value impact.
4. Sewer rate increase. 80% over 10 years. How was this arrived at? What is the data? What is the justification? With people getting very little if any pay increases, federal taxes going up the first of the year, possible reassessments and local and school tax increases, what is the justification?

Thank you  
Dave Kliss







## RESPONSE TO PUBLIC COMMENTS – SEPT 2010

The public comments received were evaluated for content, consolidated and numbered. In italics below is the public comment, followed by our response for each. Complete copies of the comment letters/emails are provided following the East Hanover Township (Township) responses.

1. *I request that the township inform residents on Pheasant Road of this impending work. I live on this street and most residents are not aware of the planned sewer extension. At a minimum the township should correspond with affected residents in the same manner as residents in the Partridge Hills and Englewood developments. Courtesy letters should be sent stating that public sewer extensions may soon affect them and that they should plan for the financial burden.*

The residents affected by a project such as this are normally notified when the design of the system is begun. This has been a past practice of the Board of Supervisors (Board). By doing so, this usually gives the residents one or more years to plan for the associated costs. The Pheasant Road project will not begin until after the Act 537 Sewage Facilities Plan (Plan) is approved by the Pennsylvania Department of Environmental Protection (PA DEP). Please note that the Plan was advertised as required by the PA DEP and the comment period was extended beyond 30-days. The Board is awaiting Plan approval prior to any future notifications regarding sewer projects.

2. *Page viii, last line - Pheasant Run Road, should be Pheasant Road.*

Several sources indicate Pheasant Run Road or Pheasant Road. However, for the purpose of consistency Pheasant Road will be utilized in all future discussions.

3. *Page viii, last sentence – I think additional problem areas can be identified. Please explain why the area of Meadow Lane, Colt Drive and County Line Road in the eastern portion of the township is not a problem area. At first glance it appears to have many potential and suspected OLDS malfunctions, is in close proximity with an existing gravity sewer main extension, and may be readily served by gravity sewer extension. Yet this area is not even evaluated for sewerage.*

Most malfunctions in the area are identified as Potential, thus being less severe than the Confirmed and Suspected Malfunctions in other areas. The density of malfunctions reported is less than in other problem areas. It also should be noted that the distance from many of these homes to the road (where the sewer line would have to be located) is greater than the 150-foot requirement to connect. Therefore, only a few properties would be required to connect. There are locations in this area with wells reporting contamination; however in this case, it was deemed probable that a more-focused implementation of the On-lot Disposal System (OLDS) Management Ordinance would be a more acceptable solution than sewerage.

The Bow Creek Interceptor runs perpendicular to South Meadow Lane approximately 4,500 feet west of this area. The average lot size from this area going west along South Meadow Lane to the Interceptor, is 2.5 acres, which is large enough to allow for a replacement OLDS if necessary. The soils in this area are more suitable for OLDS than other problem areas. Running a sewer main from an area with few potential connections through another area that does not necessarily need sewers, is not consistent with the goals of this plan.

4. *Page ix, fifth and sixth paragraph - Explain why the three areas of concern are given top priority. I fail to see how the "hot-zone" map (Appendix 3.13) highlights areas of concern. For example Area 2.C and 2.B as well as Area 1.A seem much "hotter" than Area 2.E yet Area 2.E is selected for implementation. Please provide a better justification for alternative selection and implementation other than "The alternatives were parsed down based on feasibility." Since the*



## **RESPONSE TO PUBLIC COMMENTS – SEPT 2010**

*accepted portion of the 2.E alternative removes Hills Drive from implementation all data from Hills Drive residences should be removed from "hot-spot" mapping if that is a decision tool.*

When evaluating sewage needs, the "Hot Spot" map is effective in showing immediate areas to review. However this was not used as a stand-alone device in determining the conditions present in the Township. The areas selected as needing "Top Priority" attention on page ix were selected using more than a quantitative layering process as provided in the Geographic Information System (GIS). These are the result of an iterative, qualitative process where the data was evaluated by the engineers based on the following:

- Current PA DEP regulatory information and problem solving guidelines
- Potential for alleviating OLDS malfunctions using replacement areas
- Effectiveness of the current OLDS management ordinance
- Severity of actual conditions
- Distance from existing sewer
- Economic feasibility.

As a result, the problems were then examined from the perspective of using sanitary sewers, considering regulatory, engineering, and cost effectiveness as decision-making tools. The most feasible of the sewerage solutions have been presented as "Top Priority". This represents the areas that would be most effectively handled by a sewerage option.

5. *Page x, Section D, first paragraph – Please provide a cost table showing anticipated yearly and quarterly sewage rates so that residents truly know what to expect in the future.*

As shown in Appendix 4.6 the sewer rate after 10 years will be \$1,224. This is based on an annual increase of 6.7%. Although this was calculated using the best information we have on hand, there are several assumptions that have been included such as inflation (2.5% per year) and a 3.5% rate of return. In addition, for the purpose of conservatively estimating costs, it was assumed that the Township would obtain no new sources of revenue, tapping fees or grants. It is our assertion that this has produced a rate that will enable us to plan for the future and complete those actions required by the Plan. However, it is anticipated that these rate increases will be adjusted depending on need or surplus. Predicting a rate increase over ten-years, year-by-year, and publishing it in the Plan would suggest an accuracy that is not present and may mislead rate-payers.

6. *Page x, Section D, second paragraph – Cost estimate for Pheasant Road extension is not updated. Please update and correct all appropriate cost estimates in the document.*

The original cost estimate included installation of grinder pumps on Hill Drive. At the direction of the Board grinder pumps are to be avoided. This made the inclusion of Hill Drive infeasible. Although the costs for Hill Drive have been removed additional contingency was added to the estimate. This increase in contingency is due to the smaller nature of the project. Any change in the design or construction of a smaller project is likely to have a profound affect on the overall cost as a percentage of construction versus a large project. Although some of the line items have changed the overall cost has not. Therefore, no change to the selected alternatives is warranted by this modification.

7. *Page ix, Section F – Please provide a justification on the schedule of implementation. It appears that alternatives 2.A and 2.E are to be implemented as soon as practical but that alternative 4.F*



## **RESPONSE TO PUBLIC COMMENTS – SEPT 2010**

*will not be implemented for seven years. Is this a financial decision necessary to create the capital reserve fund prior to a large capital project like 4.F.?*

Yes, this is a financial decision to create a capital reserve fund. This is explained in Section VIII.A.6 of the Plan.

8. *Page 8, G. Wetlands – I don't think the SALDO acronym is defined prior to this. Please verify and correct if necessary. SALDO is defined on page 20.*

This is correct. Parenthesis should have enclosed the subsequent notation of "SALDO" (Subdivision and Land Development Ordinance).

9. *Page 10, 2. Sanitary Survey, paragraph 1 – The second sentence states that "The final number of usable, returned surveys was 1594." Yet the third sentence states that 546 were returned. Should the second sentence state that 1594 surveys were "sent" and 546 "returned"? This should be rewritten for clarity.*

The notation should read 1594 were sent and 546 were returned. This is further correctly illustrated in Table 3.4 of the plan.

10. *Page 10, 2. Sanitary Survey, paragraph 2 – Please state the number of surveys sent in 2009 for water well sampling in order to verify that 15% of the surveys were returned. Also, I believe this information is more appropriate for Section 4 on page 14 regarding Individual Water Supply Survey (Water Well Sampling).*

Table 3.4 clearly identifies the number of surveys sent and returned. As the table shows, 546 of the 1594 surveys were returned (34%). Of the 546 returned, 239 were field-verified (15% of the 546 returned). In addition, 24 Sewage Enforcement Officer (SEO) confirmed failures are shown on the table.

Pertaining to the suggestion to place this paragraph of information in another area of the Plan, this information does belong here because it identifies how the field verifications of the surveys were performed.

11. *Page 13, Study Sector 2 –Map 3.9 lists many malfunctions as "Suspected Malfunctions" and "Potential Malfunctions" that I assume have not been verified. The township sewage enforcement officer should further investigate "suspected" and "potential" malfunctions to verify decisions prior to implementation.*

The procedures used to develop this Plan are in accordance with the PA DEP guidelines contained in the Act 537 Sewage Disposal Needs Identification Book (Needs Book). Standard practice does not dictate field investigations of all malfunctions, and Malfunction types are determined according to the Needs Book definitions. This document may be found at the following web address:

<http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-70480/3800-BK-DEP1949.pdf>.

12. *Page 15, Problem Area Analysis – I believe this should be a separate section in the document. It applies to OLDS malfunction as well as water sample results and doesn't necessarily "fit" under the 4. Individual Water Supply Survey section.*

When writing an Act 537 Plan, a designated outline prescribed by the PA DEP is generally followed. By doing so the plan remains consistent with the expectations of the PA DEP. This specific information does not fit neatly into any one section, and a separate section for this



## **RESPONSE TO PUBLIC COMMENTS – SEPT 2010**

analysis is not dictated in the PA DEP outline. It is our contention that this section is placed in a logical portion of the plan.

13. *Page 29, 2. Sewer Extension Potential, first paragraph – I fail to see how capital construction costs alone can define project feasibility without considering the project benefits such as revenue generation, elimination of environmental hazards, controlling growth and land development, etc.*

Capital construction costs alone did not define project feasibility. Refer to Sections V and VI, and Appendix 4.6 of the Plan. In general, one of the primary goals of the plan was to utilize reserve capacity within the existing wastewater treatment facility and allocate it to the largest number of existing residents that would benefit from sewer service. Of the alternatives chosen, the largest project contains 180 residential connections that show the most need for sewer.

14. *Page 30, first bullet – How is an area of need defined? Hot-zone mapping? Please clarify.*

Areas of need are analyzed based on the presence and severity of OLDS malfunctions and well water contamination, as defined in the Needs Book.

Hot Zone mapping analyzed both the density and severity (based on rank) for Malfunctions and Well Water Contamination issues. This map was not, and should not, be used as the final analysis of conditions present in the Township, but rather as a starting point for further investigation which was conducted in the planning process. It should be noted that the GIS supplies an interpretation of the data. It is the responsibility of the planner to further scrutinize this interpretation to insure an accurate presentation is made. This was done throughout the mapping and conditions review of this project.

Additional analyses, as required by the PA DEP, on existing conditions of natural features, demographics, potential growth, zoning, limitations of natural features, regulatory requirements for alternative systems and discharge to surface water, were also done to determine sewage needs.

15. *Page 35, 1.A.1 – The basis of rejection seems to be that you can service this area with a gravity sewer and not a pump station. Please explain why that is a bad thing and clarify the basis of rejection. Appendix 4.1, Alternative 1.A.1 doesn't show a pump station. What am I missing? Please provide a better explanation and justification for rejecting alternative 1.A.1.*

This alternative itself was a pumping station. It was rejected solely because a gravity option is feasible. Once this was rejected, the other alternatives (utilizing gravity) for this Study Sector were developed, and eventually rejected due to prohibitive cost. It is stated in the table that the options for Sector 1 can be reconsidered if a third-party contribution becomes available.

16. *Page 35 and 36, Technical Alternatives Considered Table - At what point is this statement valid; "Cost is not justified based on the number of homes served".*

Sewer construction cost is generally based on linear footage of pipe. When the number of connections is small and the linear footage of pipe is large, the cost per connection is greater. Sometimes the cost is so great that the user fees would be too prohibitive for residents, therefore not justifiable. Although cost is always considered it is not a stand-alone gauge. This plan did not use any type of formulaic or quantitative number as a sole means of denoting needs or feasibility.

17. *Page 35, 2.E – I don't believe this alternative corrects "existing on-lot failures." It is shown in Map 3.9 that "potential" on-lot malfunctions are within this area but not "existing on-lot*



## **RESPONSE TO PUBLIC COMMENTS – SEPT 2010**

*failures.” Furthermore, any extension can meet the goal of utilizing existing capacity and conveyance.*

Refer to comment numbers 11 and 23 for explanations.

18. *Page 39, Cost Estimate Table – Please add a column for cost per EDU. This provides a different perspective on alternative selection. Apparently economical costs per EDU are approximately \$40,000 (Alternatives 2.E and 4.F) but are not economical at approximately \$50,000 (Alternatives 1.A.2 and 2.D). An explanation of economic feasibility would be helpful to justify alternative selection. A benefit to cost analysis may be a more appropriate evaluation tool.*

Economic feasibility is based on the user fees required to construct and operate a sewer system. Standard practice does not utilize a project cost per EDU. Refer to response number 13 for response to the benefit to cost analysis. As stated previously this plan has no single measure of feasibility. The options are reviewed based on an overall consideration of all the parameters considered.

19. *Page 39, second paragraph - should state \$640 per year to \$700 per year, not per quarter.*

“Year” is the proper timeframe and “Year” was used in the advertising of the plan.

20. *Page 44, 6. second paragraph – should state \$640 per year to \$700 per year, not per quarter.*

See comment number 19 above.

21. *Map 3.18 – Is the intent of this map to show all evaluated Alternatives? If so, please add Alternatives 2.C and/or 2.D. If that’s not intended, I see no reason to shown 1.A.1 and 2.B if the map represents “selected” future sewer service areas.*

The intent of the map is to show the “Future Sewer Service Areas”. Alternative 1.A.1 was included because the Township will accept sewer flow from this area but it is contingent on third party contributions. As the plan states, the expected growth in this area is of an unknown magnitude based on the presence of the gaming industry. It is more likely that the gaming industry and their support infrastructure (i.e. hotels, bars, retail stores) would be the largest beneficiary of sewer service. Therefore, it is altogether fair for these parties to participate in the funding of the needed infrastructure. Without them, the connection of Ridge Road is beyond the means of the Township when combined with the burden created with the other selected alternatives.

The area reviewed under Alternative 2.B is predominantly zoned Highway Commercial. The Board has previously offered those that wanted to connect in this area to do so at their cost. To date, none have done so. The inclusion of this area was done to more readily allow this area access to connection without the encumbrance of significant planning modifications.

22. *Also, new sewer mains, gravity mains and low pressure mains are all the same color and line-type. A unique color would help define the systems better.*

The purpose of Map 3.18 is to show the physical extent of the sewer system and the properties included in the future sewer service areas. There are more detailed drawings within the Plan starting in Appendix 4.1 that illustrate the information being requested.

23. **[Rather than retype an entire letter regarding comments on one alternative, specific comments from that letter were consolidated and are summarized below. Copies of the original letter are included in this response]**



## **RESPONSE TO PUBLIC COMMENTS – SEPT 2010**

- *Coliform conditions on Pheasant Road and Nitrates found in agricultural soils are not good indicators of either the need for, or effectiveness of, sewerage in this area.*
- *Counting repaired OLDS as malfunctions should not be a justification for sewerage in this area.*
- *Cost Effectiveness mentioned in the plan in reference to analysis of alternatives is insensitive to the residents of Pheasant Road.*

The identification of Coliform and Nitrate contamination along the properties on Pheasant Road does indicate that there are potential problems with groundwater and well water in the area. Based on direction from PA DEP, indication of presence and severity above specific limits is the current accepted method of evaluation. Finding the nature of nitrate and coliform contamination, be it from failing OLDS, runoff from agricultural sources, or runoff from other non-point sources is not directed and beyond the scope of the Plan. Nitrate and Coliform contamination reported on Hill Drive are not found in the hydric soils areas as defined by United States Geological Survey (USGS) and the Natural Resources Conservation Service (NRCS). The hydric soils areas mentioned are surrounding the tributary to Bow Creek intersecting the road. The contaminated areas are located generally up gradient from this area.

Malfunctioning OLDS, as defined by PA DEP, to be used in Act 537 planning, consist of: repairs meeting Chapter 73 Standards; Best Technical Guidance Repairs; Holding Tanks, systems of significant age; systems that have been documented in the needs survey forms; or those systems determined by licensed SEOs as having any of several potential conditions that could indicate malfunctions. Further, systems located in areas of natural restrictions (steep slopes, hydric soils, wetlands, etc.) are also considered malfunctions to be mapped and addressed.

The cost effectiveness of the chosen alternatives is in respect to protecting the health of the greatest number of residents and the natural resources of East Hanover Township. It refers to a balance between achieving the goals of the Plan while minimizing the costs to the residents. The Township is not akin to require some areas to be served by public sewer, and that the residents must pay for it. But the Township does have a responsibility to plan for sewers in the areas where physical conditions dictate their necessity. To ease the financial burden, the residents are notified well in advance of the requirement to connect so they may plan for the costs. The Township will also look for other ways to help lower the costs of connection for their residents.

24. *Sewer rate increase. 80% over 10 years. How was this arrived at? What is the data? What is the justification? With people getting very little if any pay increases, federal taxes going up the first of the year, possible reassessments and local and school tax increases, what is the justification?*

Currently there is a shortfall in revenue needed to operate the sewer plant. For years tapping fees from new connections have bolstered the funds needed to operate the sewage treatment plant. Based on the downturn in the housing market, the Township needs to bring the level of revenue from user fees up to a level where those revenues can support normal operations and maintenance. To avoid a sudden rate increase, it was designed to be introduced gradually. In addition, to complete the sewer extensions selected in the plan, a capital reserve will be needed. Using the capital reserve will offset construction costs and stabilize rates at the end of the construction period. And although the rate increase approaches 80% over ten years the actual yearly increase is 6.7%.



## **RESPONSE TO PUBLIC COMMENTS – SEPT 2010**

25. *Previous wastewater planning listed on that draft [dated July 8, 2010] included a concise history of the progression of the various Act 537 Plan updates and due to time/expediency constraints, could not cover the total history or background.*

*I feel it is important to look more in depth at some information that comes from that history or progression..... One critical statement that has been mentioned numerous times, past/present that somehow has been either lost or ignored is: The Act 537 Plan will be revised for the ENTIRE Township within the next 18 months following the startup of the new plant which would have been Feb. 26, 2007.*

*It is now Aug. 2010, three years past the due date and the Act 537 Plan is still a work in progress, no fault attributed to LTL. Confusion along with indecisiveness between all local and state parties has run rampant over the last six to ten plus years on the subject of Act 537. The on again, off again, inclusion, exclusion aspect with no clear direct answers has not been endearing to many within East Hanover Township. (Please refer to the attached documents for the full list of meeting minutes and comments provided.)*

Your view of the history of the Component 3M (Partridge Hills and Englewood) and this Act 537 Plan is understood. That is why this Plan will protect the public health and water resources, while maintaining those financial instruments necessary to operate, maintain, and construct facilities for the public.







## **CONSISTENCY DETERMINATION**

*Please refer to Appendix 4.*







## **I. PREVIOUS WASTEWATER PLANNING**

### **A. PAST WASTEWATER PLANNING**

#### **1. Previously Undertaken Under Act 537**

In 1988, HRG, Inc. prepared an Act 537 Plan Update for East Hanover Township. As part of its review, the Pennsylvania Department of Environmental Protection (PA DEP) requested a water sampling investigation be performed. Mark S. Mills, a consulting soil scientist, then performed the required investigation and submitted a "Water Sampling Program Report" in May 1989. This plan proposed a sewage collection system and treatment facility located on Bow Creek south of Meadow Lane. When this plan was implemented, construction costs were higher than previously estimated, and almost half of the anticipated flow to the new WWTF was lost due to legal issues, thus making the costs per EDU prohibitive. The Township hired another consultant (Erdman, Anthony Associates, Inc.) to review the situation and downscale the project to become financially feasible.

In 1992 a supplement to the plan was submitted to PA DEP. The purpose of the supplement was to meet Federal Title II Planning requirements. These requirements must be satisfied to meet the standards of the Clean Water State Revolving Fund, a primary source for PENNVEST funding assistance. The conclusions of the supplement found that the proposed project did not represent a significant environmental impact with respect to Federal Title II planning requirements.

In 1994 and 1995, Erdman, Anthony Associates, Inc prepared Supplement #2 to the plan. This addition addressed changes to the sewer system design and WWTF proposed in the 1988 Plan. The sewer design eliminated areas south of Route 22, and placed the treatment facility (wetlands treatment system) on Jonestown Road. The sewer system and treatment facility were placed in operation in the year 2000. Immediately there was concern over the treatment capability of the wetlands facility. A number of measures were taken to try to bring the facility into compliance, however none were successful.

In 2003, Civil and Environmental Design Group, Inc. prepared Supplement (#3). This addressed the construction of a new WWTF to replace the failing wetlands wastewater treatment system. The new facility (sequencing batch reactors) was to be located on Dairy Lane. Other areas of the Township were not addressed due to the urgency for a new facility.

In July of 2004, The Township signed a Consent Order & Agreement (COA) with the PA Department of Environmental Protection (PA DEP) to address issues with the existing wetlands WWTF. In accordance with the COA, the Township has since constructed a new treatment facility, which was put into operation on October 26, 2005, and has been operating successfully.

As part of the COA, the Township was required to address the sewage disposal needs in the Partridge Hills and Englewood Developments.



As a result, in 2006 East Hanover Township commissioned a comprehensive update to their Act 537 Plan. As part of that plan, a mail survey was sent to all Township residents to determine the condition and adequacy of the existing on-lot disposal systems throughout the Township. The Township-wide Plan was then put on hold until the areas of Englewood and Partridge Hills were addressed.

At a meeting on February 4, 2008, PA DEP required the Township to submit a Component 3M to address the sewage disposal needs of Englewood and Partridge Hills. It had been common knowledge that on-lot disposal problems had existed for many years within these areas, as documented from the report of 1988. Due to public opposition to the construction of a public sewer system in these two areas, the Supervisors commissioned a more in-depth needs evaluation for the two areas in 2007. The Township Sewage Enforcement Officer (SEO), Light-Heigel, Associates, performed a door-to-door survey and well water sampling for the two study areas. Due to great opposition to sewers in these areas, the Component 3M was submitted on June 4, 2008, with the determination that a Sewage Management Program would be adequate for these areas. PA DEP disapproved the Component 3M on September 15, 2008. The Component 3M was resubmitted to PA DEP on March 4, 2009 with a plan for a sewer system to serve Partridge Hills and Englewood. PA DEP approved the Component 3M on March 23, 2009.

Work on this current iteration of the plan resumed in June 2008 and does not include planning for the Partridge Hills and Englewood developments as they have been covered in the 2009 Component 3M mentioned above.

## **2. Wastewater Planning Not Carried Out**

At this current time, the implementation schedules from precursory plans have been addressed either through project development or modifications to the implementation schedule.

Pertaining directly to this iteration of the plan, the implementation schedule of the 2003 Revision to the Plan has been addressed via the construction of the Dairy Lane WWTF and Bow Creek Interceptor.

The proposed Englewood and Partridge Hills Sewer Project is currently under design to meet the requirements set forth by the approved implementation schedule in the Component 3M of 2009.

## **3. Anticipated Wastewater Planning**

No impact is anticipated, planned by sewer authority or approved under a Chapter 94 Corrective Action Plan.

## **4. Planning Performed Through Planning Modules**

All subdivisions are reviewed and approved via the PA DEP planning module process.



## **II. PHYSICAL AND DEMOGRAPHIC ANALYSIS**

### **A. PLANNING AREA IDENTIFICATION**

East Hanover Township is located in the east central portion of Dauphin County (see Appendix 3.1) and is predominantly agricultural in nature of land use. There are a few centers of residential and commercial development, including the Interstate 81 (I-81) Grantville interchange area, the older villages of Grantville and Shellsville, and several newer developments. The northern portion of the Township is mountainous and heavily wooded while the southern portion of the Township is gently rolling hills and open, making it more attractive for future development. The central part of East Hanover Township is located approximately six (6) miles north of Hershey and twelve (12) miles east of Harrisburg.

East Hanover Township is bordered by the neighboring municipalities of Rush Township to its north, Middle Paxton and West Hanover Townships to its west, South Hanover and Derry Townships to its south, and Cold Spring and East Hanover Townships, Lebanon County, to its east. The Township is traversed east to west by traffic routes Interstate 81 Pennsylvania, Route 443 (Mountain Road), U.S. Route 22 (Allentown Boulevard), and Old U.S. Route 22 (Jonestown Road). Pennsylvania Route 743 (Laudermilch Road and Bow Creek Road) traverses the southern portion of the Township from north to south.

East Hanover Township has an approximate area of 25,024 acres, or 39.1 square miles. Pennsylvania State Game Lands No. 211, owned by the Pennsylvania Game Commission, extends over a large portion of the northern section of the Township, totaling 4,700 acres. In addition, the U.S. Military owns approximately 6,000 acres in the northeastern portion of the Township. This land is part of Fort Indiantown Gap. No residential or commercial land development is present in these areas.

### **B. IDENTIFICATION OF PHYSICAL CHARACTERISTICS**

There are four (4) major stream basins located in East Hanover Township. The stream basins in East Hanover are Swatara Creek, Bow Creek, Manada Creek and Stony Run.

Chapter 93 – Water Quality Standards, establishes water quality criteria and protected water-use classifications for all waterways in Pennsylvania. Section 93.9, Drainage List O – Susquehanna River Basin in PA, contains the classifications for the streams in East Hanover Township

- The Swatara Creek establishes the southeastern border of East Hanover Township with Derry Township and is designated as Warm Water Fishery (WWF).
- Bow Creek is the only creek with its headwaters entirely within Township borders. It runs from the center of the Township south to Swatara Creek and is designated a WWF.
- Manada Creek's headwaters are in Lebanon County, in the valley between the Blue Mountain and Second Mountain. Manada Creek flows west from the northeastern border of EHT to just north of



Manada Gap. From here it meanders south and exits the Township at the southern border with South Hanover Township. Manada Creek is designated a Cold Water Fishery (CWF) from its source to I- 81, and a WWF from I-81 to its mouth. Manada Creek is a source of water supply for the Pennsylvania Waterworks System. The intake is located near the mouth of Manada Creek in the village of Sand Beach, South Hanover Township. The PA DEP has established a policy whereby new discharges of Wastewater into Manada Creek will not be allowed except to correct an existing malfunctioning system. PA DEP's intent is to preserve the water quality of Manada Creek as a public water supply.

- Stony Run flows from east to west on the north side of Second Mountain and is designated High-Quality CWF.

### **C. SOILS**

The Dauphin County Soils Survey lists four (4) soil associations that are predominant in East Hanover Township: (1) Berks-Bedington-Weikert, (2) DeKalb-Lehew, (3) Calvin-Leck Kill-Klinesville, and (4) Laidig-Buchanon-Andover. The Berks-Bedington-Weikert association is a silt loam and prevails south of PA Route 443. The remaining soil associations range from silts to stony loams and prevail north of PA Route 443. Each of the soil associations consists of individual soil types; for example, one soil type from the Berks-Bedington-Weikert association is the Berks.

The majority of the soils in the Township are classified as residual soils. Residual soils are developed in place from the weathering of parent material (rock). The typical rock types that form residual soils in the Township are units of gray and red shale and sandstone. Berks-Bedington-Weikert, DeKalb-Lehew, and Calvin-Leck Kill-Klinesville are classified as residual soils.

The Laidig-Buchanon-Andover soil association is classified as a non-residual soil. It was formed from sediments that were transported by water, wind, and gravity. The typical parent material for the Laidig-Buchanon-Andover soil association is shale and sandstone.

Appendix 3.2 illustrates the different soil classifications that exist in the Township.

Prime farmland is recognized as 9 percent of land acreage in the Township. Prime farmland is depicted in Appendix 3.2.A The majority of the prime farmland is located near the Swatara Creek, on the southern slope of Blue Mountain near Manada Gap, and in the valley between Blue Mountain and Second Mountain.

Farmland of statewide importance makes up 39 percent. These soils are spread throughout the southern portion of the Township encompassing most of the developable and agricultural lands.

The majority of soils by acreage in the Township are non-prime farmland (47%); and quarry, water, or very stony land accounts for five percent (5%). These soils make up the flanks of the mountains and are also scattered



throughout the southern portion of the Township, following streambeds and floodplains.

Hydric soils are found predominantly in areas near waterways. Concentrations of hydric soils in the Township are located in the floodplains south of Manada Gap, throughout the valley between Blue Mountain and Second Mountain, at the sources of Bow Creek and in the alluvial areas surrounding Swatara Creek.

The soils prevailing in the Township are important in the consideration of on-lot subsurface disposal wastewater management systems.

The soil types in the Township have been classified in this plan by their limiting factors for on-lot sewage disposal. Classifications of suitability were established based on an overlay of suitability for conventional on-lot systems, derived by the USDA/NRCS Soil Survey Geographic (SSURGO) Database. Dominant conditions for each soil-mapping unit were analyzed based on the SSURGO scale indicated below.

- **Not Limited** – soils that are suitable for on-lot sewage disposal systems
- **Slightly Limited** – indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected.
- **Moderately Limited** – indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.
- **Very Limited** - indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.



**TABLE 2.1  
EAST HANOVER TOWNSHIP SOIL TYPES**

MAP UNIT SYMBOL	NRCS - SOIL DESCRIPTION	FARMLAND STATUS	HYDRIC SOIL RATING	TOTAL ACREAGE	PERCENTAGE
BkB2	Berks shaly silt loam, 3 to 8 percent slopes, moderately eroded	Farmland of statewide importance	Not Hydric	5472.6	21.489%
BkC2	Berks shaly silt loam, 8 to 15 percent slopes, moderately eroded	Farmland of statewide importance	Not Hydric	2548.3	10.006%
LdD	Laidig very stony loam, 8 to 25 percent slopes	Not prime farmland	Not Hydric	2361.0	9.271%
LdgD	Laidig gravelly loam, 8 to 25 percent slopes, extremely stony	Not prime farmland	Not Hydric	1191.0	4.677%
At	Atkins silt loam	Farmland of statewide importance	All Hydric	1093.5	4.294%
VsF	Very stony land, steep	Not prime farmland	Not Hydric	829.2	3.256%
DIF	Dekalb and Lehigh very stony sandy loams, 25 to 80 percent slopes	Not prime farmland	Not Hydric	786.2	3.087%
BtB2	Brinkerton and Armagh silt loams, 3 to 8 percent slopes, moderately eroded	Not prime farmland	All Hydric	765.5	3.006%
DID	Dekalb and Lehigh very stony sandy loams, 8 to 25 percent slopes	Not prime farmland	Not Hydric	681.0	2.674%
BkD2	Berks shaly silt loam, 15 to 25 percent slopes, moderately eroded	Not prime farmland	Not Hydric	674.7	2.649%

#### **D. GEOLOGIC FEATURES**

Appendix 3.3 illustrates the major geologic formations underlying East Hanover Township. This geology is divided primarily into the mountainous area and lowland area south of Blue Mountain. The mountainous area consists mainly of sandstones, shales, and conglomerates with ages in the Pennsylvanian Period estimated to be 208 million years old. The majority of residential properties are found along Manada Bottom Road, passing through the Manada Gap and heading north into West Hanover Township. These homes are located over rocks of the Catskill, Trimmers Rock, and Hamilton Group formations. The grey shale of the Martinsburg Formation, Ordovician Period - estimated at 435 million years old, is found on the southern slope of Blue Mountain. Few residences are located in this the heavily forested southern slope of Blue Mountain.

The vast majority of human activity occurs over the Ordovician period rocks of the Hamburg Sequence. Hamburg rocks in Township are predominantly shale, greywacke, and limestone. Hamburg series rocks are the parent materials for the Berks-Beddington-Weikert soil association, the dominant soil



series in this area. Well water nitrate contamination exceeding 10 ppm is found in properties over the shale and greywacke.

A Pennsylvania Geologic Survey Study of groundwater resources for Lebanon County completed in 1983 found that the Hamburg Sequence rocks had moderate to high well yields with median domestic wells surveyed ranging from 5 –15 gallons per minute (gpm) and reported yields ranging from 4 to 575 gpm. The apparent growth of residential and commercial wells in the Township signifies a need to protect these geologic formations from further threat of contamination. Further analysis of hydrogeologic potential and vulnerability will be discussed in the East Hanover Township Aquifer Study and Comprehensive Watershed Management Plans forthcoming.

#### **E. TOPOGRAPHY**

Appendix 3.4 illustrates the floodplain and steep slope areas in the Township. The floodplain boundaries are representative of the areas that are prone to flooding in a 100-year flood. The steep slope areas are representative of those areas that have slopes greater than or equal to fifteen percent (15%). The existence of floodplain precludes the use of on-lot subsurface disposal systems. Steep slopes impose restrictions relative to suitability of subsurface disposal systems and techniques. Per PA DEP Title 25 Chapter 73, subsurface disposal is not allowed on slopes in excess of twenty-five percent (25%).

#### **F. POTABLE WATER SUPPLIES**

The vast majority of potable water supplies in East Hanover Township is sourced from the aquifer via individual wells.

There are three (3) existing public non-municipal water supplies located within East Hanover Township. Using The Pennsylvania Ground Water Information System (PAGWIS), seventeen (17) individual wells were located and categorized as being “Public Water Supply”. However, several of these wells serve industrial and commercial needs and were therefore removed from the water suppliers’ table. The remaining water suppliers represent public potable supplies for residential use. Table 2.2 and Appendix 3.5 illustrate the location and capacity of the existing public water supplies.

A fourth, large-scale water supply is owned by the Penn National Raceway and Hollywood Casino. The casino was listed as a public water supply in the 1988 iteration of the plan, but has been removed from the list of public suppliers, as it does not contribute to the supply of residential potable water. All remaining large-scale water supplies in the Township pertain to commercial or recreational uses.

All other water supplies for individual households within the Township are private wells. It is assumed that each dwelling, excluding those dwellings that are serviced by public water supplies, has one well and that each well is located within close proximity to the dwelling.

The private water supplies located in East Hanover Township that coordinate with on-lot sewage disposal systems should be closely monitored due to potential contamination from malfunctioning systems. The main concern with those areas is the degree of separation between the water supply and the on-



lot sewage system. Typically, these areas represent high-density populations with small lots, which do not provide a sufficient separation for the isolation of the water supply and the on-lot sewage system. Even if a resident's water supply and on-lot system are sufficiently isolated, a failure in an adjacent property owner's on-lot sewage system may impact the water quality due to insufficient separation. Furthermore, since a public water supply services a relatively large population, this problem may become intensified where there is a community water supply (public water supply) contaminated by existing or potential malfunctioning on-lot sewage systems.

**TABLE 2.2**  
**EXISTING WATER SUPPLIERS**

<b>Facility</b>	<b>Number of Connections</b>	<b>Well Information</b>	<b>System Configuration</b>
Manada Creek Mobile Home Park	45	Well #1: 3,750 GPD, Well #2: 3750 GPD	2 Wells, 2-500 Gallon Storage Tanks, PVC Distribution System
Chesapeake Estates Mobile Home Park	345	Well #1: 60 GPM, Well #2: 45 GPM	2 Wells, 2 Hypochlorinators, 80,000 Gallon Elevated Concrete Storage Tank, PVC Distribution System
Shady Back Acres Mobile Home Park	22	Well #1: 15 GPM, Well #2: 12 GPM	2 Wells, 2 Pressure Tanks, 2 Hypochlorinators, 2-300 Gallon Chlorine Detention Tanks, Distribution System - Unknown

It should be noted that the above data was derived from Pennsylvania Ground Water Information System and verified by PA DEP Regional files and that the information is assumed to be current.

## **G. WETLANDS**

Wetlands and Hydric Soils in East Hanover Township are shown graphically in Appendix 3.6, and are based on the U.S. Department of the Interior "National Wetlands Inventory." Presence of wetlands limits most forms of land development activities in the Township. The Township Subdivision and Land Development Ordinance of 2003 (SALDO) has indicated that, barring activities approved on a case-by-case basis by the Township, that no structure or earth disturbance shall otherwise be located within wetlands or wetland buffers. Wetland buffers are defined by the SALDO as transitional areas extending from the outer limit of a wetland. The wetland buffer shall extend to the limit of the Hydric Soils, or to seventy-five feet (75'), whichever is less.



### **III. EXISTING SEWAGE FACILITIES IN PLANNING AREA**

#### **A. SEWAGE SYSTEMS IN PLANNING AREA**

##### **1. Existing Wastewater Treatment Facilities**

The existing wastewater treatment facilities in East Hanover Township are as listed in Appendix 2.1. These facilities are mapped in Appendix 3.7.

##### **2. Existing Wastewater Treatment Processes**

Refer to Appendix 2.1 for the treatment processes utilized by the wastewater treatment facilities in East Hanover Township.

##### **3. Existing WWTF Problems**

The Dairy Lane and Penn National WWTF's are in compliance with their respective permits. No problems are noted at this time. Per the 2009 Chapter 94 Report, the Dairy Lane WWTF is not projecting an overload in the next five years.

Shadyback Acres' WWTF is generally in compliance with its permitted effluent limitations. However, there are problems with Operations and Maintenance (O&M). The NPDES permit renewal application was submitted to PA DEP January 2, 2008. The draft NPDES permit was issued in late 2009. As a condition of final NPDES permit issuance, PA DEP required the owner to address the O&M issues by providing a report describing improvements made, or to be made, at the facility. This report was submitted November 23, 2009. As of Plan Adoption, the final NPDES permit has not been issued.

The Manada Creek MHP WWTF appears to be operating in compliance with its permit.

The SFSTF's are all for single-family homes. The only problems noted were failure to submit renewal applications in a timely manner.

##### **4. Future Growth Capabilities**

There are no scheduled or in-progress upgrades to any treatment facility within the Township. The Dairy Lane WWTF has a reserve capacity of 388 EDUs. Allocation of capacity for development is governed by Ordinance 2009-02 – The East Hanover Township Sewer Capacity Reservation Ordinance. Refer to Appendix 1.3. The rate of population growth will be considered in the design of any future expansions when needed.

As listed in the goals of this plan, the current reserve capacity is dedicated to existing residents. As it currently stands there is sufficient capacity within the plant to treat the areas included as selected alternatives and still maintain a reserve capacity. Any future growth that would exceed that reserve capacity will be planned for separately.

##### **5. Operation and Maintenance Requirements**

There is no ordinance in place regulating the use of small flow treatment facilities at this time. An ordinance regarding Small Flow



Sewage Treatment Facilities will be developed and implemented. Refer to the Implementation Schedule in Section VIII.

## **6. Alternate Disposal Areas**

Given the soil conditions in the Township, any type of land application would be prohibitive and is not considered a viable long-term option.

## **B. INDIVIDUAL AND COMMUNITY ON-LOT SEWAGE DISPOSAL SYSTEMS**

### **STUDY SECTORS:**

For the purposes of this plan, five (5) distinct study sectors were established to identify sewage needs and alternatives in a sub-watershed based perspectives. A map of the individual study sectors is found in Appendix 3.8.

Barriers to flow define each study sector. Sector 5 is located north of Blue Mountain including the headwaters to the Manada Creek Watershed and components of the Stony Creek Watershed. Little needs analysis was performed in this sector due to its isolation and sparse population. Sectors 1 and 2 comprise the Bow Creek watershed. Sectors 3 and 4 make up the Township's portion of the Manada Creek Watershed. Interstate 81 acts as a barrier to flow between Sectors one and two, and three and four respectively.

Although these sectors were devised in order to provide ease in analysis, they are not considered Tier II Study Areas. Sewage needs are defined by Study Sector later in this plan. Secondly, technical alternatives are enumerated and presented based on the Study Sectors.

### **1. Existing On-Lot Systems**

The OLDS in East Hanover Township consist of standard in-ground septic tanks for initial treatment of home sewage. Septic tanks are then followed by drain fields, sand mounds or other means for dispersal of treated water. Several cesspools and seepage pits have been identified in the sanitary survey (see below). No wildcat systems or community on-lot systems have been identified. Several residential and commercial holding tanks are also implemented in sewage removal.

### **2. Sanitary Survey**

#### **TIER ONE (Entire Township)**

A mass mailing (1,594 surveys) was sent to all properties in late 2005/early 2006 requesting participation in a sanitary needs survey as prescribed by PA DEP guidelines. Five hundred forty-six (546) surveys were returned, making the return rate 34%. According to the PA DEP Sewage Disposal Needs Identification book (Needs Book), a 15% minimum return rate for surveys is required for a representative sample. East Hanover Township's return rate was more than twice the minimum requirement, and the surveys are therefore a representative sample of the OLDS in the Township.

According to a conversation with a PA DEP Planning Specialist, at least 15% of the OLDS surveys in the study area (in this case, the entire Township) must be field-verified. This is done to determine the



accuracy of the information provided on the surveys so that the surveys can be considered a representative sample, and be used for the determination of the OLDS malfunction rates. This equates to 239 surveys where verifications were necessary.

In spring 2009 mailings were again sent to residents in order to schedule well water sampling. At the time of well water sampling, field verifications were performed for those receiving water samples and for a random sample of those who did not request a water sample. Two hundred and thirty nine (239) surveys were field-verified, satisfying the required percentage (15%). A copy of the letter to the residents, a sample survey form, the sampling requirements summary table and the well water sampling and field-verification summary table are located in Appendix 2.0.

The Tier One malfunction figures were derived from Township SEO documented malfunctions, interpretation of OLDS needs surveys from the 2006 mailing, and presentation of new survey data generated by the field technicians. A map of the Tier One malfunctions is shown as Appendix 3.9.

The documented malfunctions in East Hanover Township during the last 6 years are tabulated as follows.



**TABLE 3.1**  
**SEO DOCUMENTED MALFUNCTIONS**

YEAR	ADDRESS	MALFUNCTION TYPE	RESOLUTION
5/14/09	1013 Trail Rd	Backup to structure	Replacement sandmound
11/25/08	106 Kelly Ct	Backup to structure	Replace building sewer
9/13/06	8201 Jonestown Rd	Backup to structure	Install sandmound
4/9/09	8059 Devonshire Heights Rd	Baffle missing & clogged con. pipe	Replace conveyance line and baffles
3/6/09	1304 Ridge Rd	Baffle missing & collapsed d-box	Replace baffle and d-box
9/9/08	111 Windy Ln	Collapsed d-box	Replace d-box
4/29/08	320 Dairy Ln	Cracked tank bottom	Repair tank bottom
2/4/05	322 Pheasant Rd	Deteriorated dose tank	Replace dose tank
11/20/08	300 Station Rd	Deteriorated septic tank	Replace septic tank
6/1/05	605 Canal Rd	Deteriorated septic tank	Replace septic tank
12/15/06	1150 Manada Gap Rd	Deteriorated septic tank and d-box	Replace septic tank and d-box
10/19/07	383 Pheasant Rd	Deteriorated septic tank and d-box	Replace septic tank and d-box
2/25/09	8135 Devonshire Heights Rd	Deteriorated septic tank and d-box	Replace septic tank and d-box
10/24/03	343 Crooked Hill Rd	Surface discharge	Replacement at-grade
6/19/08	453 East Canal Rd	Surface discharge	Replacement A/B system
6/6/06	111 Evergreen Ln	Surface malfunction	Install at-grade with a peat moss filter
11/19/03	149 Red Fox Ln	Surface malfunction	Install sandmound
2/4/08	153 Pineview Dr	Surface malfunction	Install sandmound
9/2/04	2711 Sand Beach Rd	Surface malfunction	Replacement sandmound
12/23/04	339 Crooked Hill Rd	Surface malfunction	Install sandmound
5/27/04	406 Crooked Hill Rd	Surface malfunction	Install sandmound
11/24/04	8125 Jonestown Rd	Surface malfunction	Replacement sandmound
7/20/07	9552 Mountain Rd	Surface malfunction	Install sandmound
5/31/07	Early's Mill Rd	Abandoned property with suspect on-lot system	New house and system constructed
1/13/06	1709 Laudermilch Rd	Clogged building sewer	Replace building sewer
4/9/08	146 Manada Gap Rd	Clogged conveyance pipe	Replace conveyance pipe
8/30/07	171 North Faith Rd	Deteriorated building sewer	Replace building sewer
8/12/04	2491 Sand Beach Rd	Existing cesspool	Install at-grade
4/23/04	1429 Ridge Rd	Existing cesspool	Install at-grade
4/24/02	1171 Laudermilch Rd	Existing outhouse	Install sandmound
10/2/06	5 Samantha Ct	Septic tank of insufficient size	Replace septic tank
9/21/07	657 Trail Rd	Septic tank under the house	Install new septic tank and d-box
6/1/05	146 Manada Gap Rd	Slow toilets	Replace building sewer

The resolution of malfunctions shall be the responsibility of the Township SEO, following the guidance of this Plan.



**TABLE: 3.2**  
**RESIDENTIAL HOLDING TANKS**

PROPERTY LOCATION		
623	S	CRAWFORD RD
142		CROOKED HILL RD
414		FIREHOUSE RD
693		LAUDERMILCH RD
1127		MANADA BOTTOM RD
787		MANADA BOTTOM RD
243	S	MILL RD
9448		MOUNTAIN RD
186		PHEASANT RD

*The above data was compiled with the Well Sampling data in Section III.B.4 below to perform the **PROBLEM AREAS ANALYSIS** located after Section III.B.4 below.*

### 3. Comparison of Existing and Appropriate Systems

Resulting from the Sanitary Needs Survey, the following table has tallied the residents' responses regarding sanitary system types.

**TABLE 3.3**  
**SANITARY SYSTEM TYPES**

SYSTEM TYPE	REPORTED TOTAL	PERCENT OF SURVEY
SAND MOUND	198	36.3%
SEPTIC TANK	186	34.1%
INGROUND BED / TRENCH	114	20.9%
NO RESPONSE	26	4.8%
HOLDING TANK	9	1.6%
CESSPOOL / SEEPAGE PIT	8	1.5%
OTHER	3	0.5%
PIPE TO SURFACE	1	0.2%
SMALL FLOW SEWAGE TREATMENT FACILITY	1	0.2%
<b>TOTAL</b>	<b>546</b>	

Sand mound and in-ground bed / trench systems are the most frequently used form of OLDS in the Township followed by holding tanks, cesspools and seepage pits. The survey results show that although twenty eight percent of the respondents provided no information on the age of their system, 46 percent of the OLDS in the survey have been identified as being greater than 20 years of age. Clustering of these older systems occurs in or near land developments south of Allentown Boulevard in Study Sector 4.

Sand mound and In-ground bed / trench systems are considered the most economically feasible and appropriate on-lot systems for the



majority of the Township's geography. However it should be noted that long-term viability would be questionable. Secondly, it is of concern that smaller villages such as Shellsville and Grantville, and land developments in the southwest portion of the Township, have lots that may be restrictive in size and natural features for replacement fields and alternative systems.

Of the 546 systems surveyed and mapped, 21% of the systems were found in areas of natural restrictions, predominantly hydric soils and wetland buffer areas as depicted in Appendix 3.12.

**TABLE 3.4**  
**SANITARY NEEDS SURVEY**

NUMBER OF SURVEYS:	1594	
NUMBER OF SURVEYS RETURNED	546	34% OF MAILED
NUMBER OF SURVEYS FIELD VERIFIED	239	15% OF MAILED
SEO REPORTED MALFUNCTIONS	24	
<b>TOTAL SURVEYS</b>	<b>570</b>	

MALFUNCTION TYPE*	NUMBER	PERCENTAGE OF SURVEYED
CONFIRMED	57	10%
SUSPECTED	73	13%
POTENTIAL	196	34%
NONE	244	43%
<b>TOTAL MALFUNCTIONS</b>	<b>326</b>	<b>57%</b>

Malfunction types are defined in the PA DEP Needs Book, pages 2-3.

**Study Sector 1:** Confirmed malfunctions and one holding tank have been found along Mountain Road. Larger concentrations of Potential and Suspected Malfunctions are located along Ridge Road.

**Study Sector 2:** Malfunctions are scattered throughout the sector with concentrations located along Pheasant Road in the vicinity of Hill Drive; the intersections of Shady Lane and Trail Road; Kelly Court and Faith Road; and the intersections of Canal Road and Early's Mill Road with Trail Road.

**Study Sector 3:** Malfunctioning systems are scattered and sparse throughout the sector. Areas along Manada Bottom Road near Furnace Road and Moyer Road have both confirmed malfunctions and holding tanks. These problems may also be exacerbated by the presence of floodplains and hydric soils in abundance.

**Study Sector 4:** The highest concentrations of malfunctions in the Township are located in the neighborhoods along Mill Road, Red Fox Lane, Campbell Court, Hunter Lane and Circle Drive. Several malfunctions and residential holding tanks are present south of Allentown Boulevard. System age and presence of systems near



restrictive areas are the primary reason for these suspected and potential malfunctions.

*The above data from this section was compiled with the Well Sampling data in Section III.B.4 below, to perform the **PROBLEM AREAS ANALYSIS** located after Section III.B.4 below.*

#### 4. Individual Water Supply Survey (Well Water Sampling)

**TIER ONE (Entire Township):** A well sampling program was implemented (via the mail survey discussed above) to collect and analyze groundwater samples taken throughout East Hanover Township. Three hundred seventy-five (375) surveys requested a water sample with the 2006 needs survey, as well as a number of additional requests from the 2009 study. The Needs Book requires that 15% of the wells in the study area (the entire Township) be sampled. Therefore a total of two hundred and thirty-nine (239) samples were taken throughout the Township, thus meeting the 15% sampling requirement.

Water sample collection was performed by LTL Consultants' SEOs, in accordance with industry standards. All samples were analyzed for total coliform, fecal coliform (if total coliform result was positive), and nitrates. The laboratory used for the analyses was American Westech (PA DEP certification No. 22-00578). Split samples were also provided to the lab to assure accuracy. No discrepancies were noted with the split samples. Along with the laboratory results, the property owners were also provided guidance regarding elevated contaminant levels and a well disinfection procedure.

The results of both the Nitrate and Coliform contamination studies are presented in Appendices 3.10 and 3.11 respectively. Areas within a quarter-mile radius of samples with elevated Nitrate values (greater than 5 ppm) were noted to indicate high-risk areas for contamination.

The following table summarizes the water supply testing results.

**TABLE 3.5**  
**WELL WATER SAMPLING**

**NUMBER OF WELLS SAMPLED**      239

CONTAMINANT	NUMBER	PERCENTAGE OF THOSE SAMPLED
<b>NITRATES</b>		
< 1 ppm	12	5%
1-4.9 ppm	182	76%
5-9.9 ppm	39	16%
>= 10pp,	6	3%
<b>COLIFORM PRESENCE</b>	106	44%
<b>FECAL COLIFORM PRESENCE</b>	12	5%



**Study Sector 1:** Nitrate contamination was only found at one location along Ridge Road. Coliform presence was found clustered along Ridge Road and scattered along Mountain Road.

**Study Sector 2:** The greatest concentration of nitrates in this sector was found in the Timber Ridge Development, with levels under 10ppm. Smaller clusters of nitrates were found along Shells Church Road, Allentown Boulevard and Laudermilch Road (Rte 743). Coliform presence was scattered in Timber Ridge Development, Pheasant Road, Kelly Court and along Laudermilch Road. The largest Coliform concentration was found at the intersection of Shady Lane and Early's Mill Road. Fecal Coliform Presence was found at Early's Mill Road and Shady Lane near Laudermilch Road.

**Study Sector 3:** Only one well was found with elevated nitrates and coliform contamination was found on three properties along Ridge Road with one being found positive for fecal coliform.

**Study Sector 4:** As was found with malfunctions in this sector, the heaviest concentrations of nitrate and coliform contamination were found in the neighborhoods along Mill Road, Red Fox Lane, Campbell Court, Hunter Lane and Circle Drive. Elevated nitrates are the highest in the areas south of Allentown Boulevard. Coliform contamination was also high in this area with six wells being found positive for fecal coliform. These results indicate a high potential that failing OLDS may be having a direct effect on well water quality.

#### **PROBLEM AREAS ANALYSIS:**

Analysis of problem areas is presented in Appendix 3.13. This map was generated by means of conducting an overlay analysis of OLDS Malfunctions, Nitrate Contamination, and Coliform Contamination testing results. Results for each portion of the analysis were ranked and coverage layers were generated for each indicator by means of a Nearest Neighbor analysis via GIS software. These layers were overlain and a weighted-sum analysis was performed based on the normalized data.

The following areas have been identified as the most important needs areas. Study Sector ID numbers are used to enumerate each problem area. These enumerations coincide with proposed alternatives to follow in sections V and VI.

The following table summarizes the problems identified.



**TABLE 3.6 - PROBLEM AREAS SUMMARY**

PROBLEM AREA ID	LOCATION	OLDS MALFUNCTIONS	HOLDING TANKS (RESIDENTIAL)	SFSTF	ELEVATED NITRATES	COLIFORM PRESENCE	FECAL COLIFORM PRESENCE
1.A	RIDGE RD	X			X	X	
1.B	MOUNTAIN RD	X	X			X	
2.A	DAIRY LANE, EARLYS'MILL RD AND LAUDERMILCH RD (743)	X			X	X	X
2.B	KELLY CT, FAITH RD, AND ALLENTOWN BLVD.	X			X	X	X
2.C	SOUTHERN TRAIL RD, SHADY LN, CANAL RD	X			X	X	X
2.D	TIMBER RIDGE DEVELOPMENT	X			X	X	
2.E	PHEASANT RD, HILL DR	X	X		X	X	
3.A	MANADA CREEK AREA AND RABBIT LN	X		X			
4.A	AREAS NORTH OF ALLENTOWN BLVD (HUNTER LN, MILL RD, RED FOX LN, CAMPBELL CT, CIRCLE DR, STEEPLECHASE LN, BERRY DR, MANADA VIEW RD, YELLOWSTONE DR)	X		X	X	X	X
4.B	AREAS SOUTH OF ALLENTOWN BLVD (SYCAMORE LN, CHESTNUT PL, CARLSON RD, ULRICH CT, CROOKED HILL RD)	X	X	X	X	X	X

*The following in-depth descriptions focus on only the problem areas selected by the Board of Supervisors for alleviation via technical alternatives (see sections V through VII).*

**1.A. Ridge Road:** Ridge Road is located on the foothills of the Blue Mountain, roughly 1/2 mile northeast of the Interstate 81 and Bow Creek Road Interchange. The area is mostly composed of single-family homes on lots that average 0.67 acres in area. There are also a few commercial lots located near Bow Creek Road. The Chesapeake



Estates Mobile Home Park is located in close proximity to Ridge Road. Finally several agricultural lots, commercial recreation properties and undeveloped land surround the residential properties on Ridge Road.

Potential for land development surrounding the Ridge Road could be increased due to the draw from the Penn National Raceway and Hollywood Casino. Secondly, potential expansion of Chesapeake Estates could stress the area's existing sewer infrastructure capacity. OLDS malfunctions in the area are identified as suspected due to system age, property size, and potential natural feature suitability issues. Coliform contamination of wells has been found at a high rate per properties sampled along Ridge Road.

Soil limitations for OLDS replacement along Ridge Road is fair to moderate. Natural feature restrictions in the area consist mainly of floodplains, riparian buffers, slopes and wetlands. Although OLDS replacement is probable, potential development pressure may exacerbate limiting factors in the future.

In addition to the above areas, there are two properties on Bow Creek Road with sewer needs, despite having the public sewer in close proximity. There are high-pressure gas mains prohibiting connections by gravity.

- Funck's Exxon has a grinder pumping station, which is owned and operated by East Hanover Township. The pump station requires frequent maintenance.
- A restaurant, currently named "Italian Delight," has a holding tank.

**2.A. Dairy Lane:** This area consists mainly of residential lots with two large agricultural plots of land with potential for future residential land development. The Dairy Lane WWTF is the terminus of the proposed Englewood and Partridge Hills Sewer Project. A large lot over 20 acres along Dairy Lane is owned by a land developing company. The owner of the adjacent lot, which was subdivided from the parent lot, has requested consideration for connection to municipal sewer.

Two of the four properties responding to the OLDS needs survey have confirmed malfunctions. Secondly, two of the properties sampled for well water contamination have been identified as having nitrates from 5-9.9 ppm, and presence of coliform.

Soil suitability for OLDS replacement along Dairy Lane is some of the lowest ranked in the Township. Large areas of natural restrictions surrounding Bow Creek and its tributaries may further prevent new developments from using community on-lot systems and alternative systems, i.e. spray irrigation.

**2.E. Pheasant Road:** This area includes properties along the east side of Hill Drive, south of Route 22, beginning at Sunset Drive; and Pheasant Road south of Route 22, beginning approximately 550 feet east of Sand Beach Road. The problem area extends to the beginning of the proposed Partridge Hills Sewer System near Bunny Lane. It



consists almost entirely of single-family homes on lots averaging one acre in area.

Among the OLDS malfunctions found, one holding tank has been recorded. Well water contamination involves both coliform presence and elevated nitrate levels.

**4.A & 4.B: Manada Creek Developments:** Found on both the north and south sides of Allentown Boulevard (Rt. 22), the problem area consists of two older land developments. It is also located between two major branches of the Manada Creek. The area consists of primarily single-family homes, small-scale commercial properties, and several tracts of agricultural or undeveloped land.

While both areas contain an evenly disbursed number of malfunctioning OLDS, higher numbers of well contamination are present in the southern section, with concentrations on Sycamore Lane, Chestnut Place and Carlson Road. One holding tank is also present in this development. Well contamination in the northern development is in the form of coliform bacteria presence, including two fecal coliform presence readings. Contamination is concentrated on Hunter and Red Fox Lanes.

Soil limitation for replacement of OLDS is moderate to high. There is also an abundance of natural restrictions to development and construction in the form of floodplains, hydric soils, and wetland areas. Although replacement of malfunctioning OLDS is probable for the majority of properties in this area, long-term system sustainability would be in doubt. Secondly, the large amount of natural restrictions increases space pressure for community on-lot systems and other alternative forms of disposal.

## **5. On-Lot Sewage Management Program**

East Hanover Township adopted a Sewage Management Ordinance in 1998 (Appendix 1.2). This ordinance indicates the specific uses and maintenance requirements for the upkeep of on-lot and alternative systems. The Ordinance authorizes the Township to direct and enforce the inspection process of OLDS and community systems.

The Township is currently divided into three districts in which inspections of the systems are made on a revolving three-year schedule. Notifications are sent to residents for required inspection to be performed by authorized agents. The agents file reports after pumping and inspections are performed. Owners of aerobic tank systems are required to submit manufacturers documentation, service agreements and receipts.

The program is actively operating with inspections ongoing. However the high number of systems and the rural nature of the Township tend to slow the management of the program. It is recommended that an evaluation of the programs effectiveness and efficiency be conducted. Modernization of the record-keeping method may prove essential for the ongoing success of the program.



**C. IDENTIFICATION OF SLUDGE GENERATION & DISPOSAL****1. Sources Of Sludge**

The sources of sludge generation in the Township are all wastewater treatment facilities and septic and holding tanks.

**2. Quantities Of Sludge**

The respective quantities of sludge generation for each WWTF are shown in Appendix 2.1.

**3. Present Disposal Methods**

The present disposal methods for each WWTF are shown in Appendix 2.1.



## IV. FUTURE GROWTH AND LAND DEVELOPMENT

### A. MUNICIPAL AND COUNTY PLANNING DOCUMENTS

#### 1. Land-Use Plans and Zoning Map

**Dauphin County Comprehensive Plan (2008):** The plan identifies areas in which future sewer will be provided, and analyzes current needs based on research stemming from a county-wide sanitary sewage plan in 1995. This data was supplemented by further research in 2001. The Plan recognizes that soil conditions for OLDS around the Susquehanna River are limited. The Plan's goals recognize the need for encouragement of regional systems, coordination of land-use plans, discouragement of development in areas that are served by OLDS, and the efforts of municipalities and developers to coordinate planned growth appropriately with planned utility development.

**Tri-County Regional Growth Management Plan:** The Tri-County Plan (currently in an update phase during the writing of this Plan) acts as a central guidance tool for municipal comprehensive and planning. The primary goal of the plan regarding utilities is to promote a policy framework for site location and responsible development, promoting natural and infrastructure sustainability.

**East Hanover Township Planning Documents:** East Hanover Township is governed by four (4) primary land-use documents: the East Hanover Township Comprehensive Plan, adopted April 1993; the EHT Recreation Plan, adopted April 1, 2003; the EHT Zoning Ordinance of 2003, and the EHT Subdivision and Land Development Ordinance (SALDO) of 2003.

In 2009, EHT sanctioned the development of a new Comprehensive Plan for the Township. Its development is coincident with the development of the Act 537 Plan.

The EHT Recreation Plan adopted in 2003, is a tool for the Township to provide adequate recreation and open space areas for its residents.

The EHT Zoning Ordinance (Zoning) provides for the proper and efficient development of the Township to protect the health and safety of its residents. The Zoning Ordinance establishes zones for specific types of uses for each zone. The current EHT Zoning Map can be found in Appendix 3.14.

#### 2. Zoning and SALDO Regulations

The EHT SALDO of April 1, 2003 is a tool to promote development that is in conformance with Township land-use plans.

The SALDO requires a preliminary hydrogeologic evaluation or when the use of subsurface soil absorption areas are proposed and one of the following exist:

1. A large volume OLDS will be used.
2. A Subdivision of more than 50 equivalent dwellings with a density of more than one dwelling unit per acre is proposed.



3. In areas within 1.4 mile of water supplies having documented nitrate-nitrogen levels at or exceeding 5 parts per million (ppm)
4. Geological conditions are found to contribute to the potential for groundwater pollution from the proposed systems.

The Zoning and SALDO both establish regulations based on sewage disposal methods. SALDO Article 6 Section 620 provides requirements for sanitary sewage disposal. The Zoning Ordinance provides minimum lot sizes, for each land-use type, based on sewage disposal method. The following table shows the minimum lot sizes for each Zoning District based on presence of public sewer.

**TABLE 4.1**  
**LOT AREAS WITH PUBLIC SEWER**  
**PER ZONING DISTRICT**

<b>Zone Code</b>	<b>Zone Name</b>	<b>Minimum Lot Size (ft<sup>2</sup>)</b>	<b>Minimum Lot Area (Acres)</b>	<b>Minimum Lot Width (ft)</b>	<b>Maximum Lot Coverage (%)</b>
C	Conservation	43560	1.00	150	10
RA	Rural Agricultural	43560	1.00	150	25
RMD	Residential Medium Density	43560	1.00	360	20
RMD - SSA	Residential Medium Density – Public Sewer	20000	0.46	100	35
MHP	Mobile Home Park	5445	0.125	60	40
VR	Village Residential	43560	1.00	320	10
VR - SSA	Village Residential – Public Sewer	15000	0.34	120	20
VO	Village Overlay Zone	43560	1.00		70
HC	Highway Commercial	43560	1.00	200	30
HC - SSA	Highway Commercial - Public Sewer	20000	0.46	125	30
IC	Interchange Commercial	87120	2.00	250	60
CR	Commercial Recreation	87120	2.00	200	20
CR - SSA	Commercial Recreation - Public Sewer	43560	1.00	150	30
I	Industrial	43560	1.00	150	60

Zoning Ordinance Article 3 Section 316, and SALDO Article 6 Section 620.6, requires one replacement area in addition to the primary disposal site for those uses that rely on On-Lot Sewage Disposal Systems. In addition, the replacement site must be perpetually protected from such activities that would destroy the absorption capacity of the soil.



The Zoning Ordinance provides density bonuses for land development in the RMD, VR, HC, and CR zones by decreasing minimum lot sizes and increasing building density (see table above).

### **3. Floodplains, Stormwater Management, Special Protection Areas**

The Stormwater Management and Flood Reduction Ordinance, adopted March 18, 2008 sets standards for the proper management of stormwater to minimize the potential for flooding downstream of new development.

The current Zoning and SALDO Ordinances (2003) designate protection zones and regulations for the following.

- Floodplains – Although placement of stormwater facilities is not restricted in these areas, they must be designed to minimize or eliminate infiltration of floodwaters. In addition they should be located and constructed to minimize flood damage and impairment.
- Streamside Riparian Buffers – Riparian buffers have been designated in three zones emanating from 15 ft. from the stream bank, the 100-year floodplain, and any adjoining identified wetlands, or 25% slopes. The ordinance indicates that the buffer zones must, in varying degrees per zone, be generally undisturbed. Manmade activities should be very limited in zones one and two.
- Wetlands – The SALDO indicates that wetland buffers shall be identified in land development plans. It indicates that the wetland buffer should extend seventy-five (75) feet from the wetland or the extent of hydric soils adjacent to the wetland. No structure or earth disturbance shall be located within the wetland buffer given that the applicant can demonstrate to the satisfaction of the Township that the activities will not degrade water quality, vegetation, or have any adverse hydrological impact.

## **B. EXISTING AND FUTURE GROWTH AREA, LAND USE, POPULATION PROJECTION, ZONING AND PLANNING NEEDS**

### **1. Existing Development**

Listed in Table 4.2 are developments identified by Township records to be either approved and under construction or still in planning phases. These developments are identified in Appendix 3.15.



**TABLE 4.2**  
**SUBDIVISIONS AND LAND DEVELOPMENTS**

<b>ID NUMBER</b>	<b>SUBDIVISION / LAND DEVELOPMENT NAME</b>	<b>UNITS</b>	<b>STATUS</b>
22	MOELLER	4	CONSTRUCTION
74	PARMER	2	CONSTRUCTION
70	PRESERVE AT BOW CREEK	61	CONSTRUCTION
81	RELIANT ENERGY	1	CONSTRUCTION
25	WINFINDALE	3	CONSTRUCTION
12	ZEAGER	2	CONSTRUCTION
162	BOW CREEK MALL	20	PLANNING
21	CLARK APOSTOLOPOULOUS	2	PLANNING
33	FERDON	1	PLANNING
28	HAWKINS & CARROLL	1	PLANNING
23	HESS	2	PLANNING
152	HILTON GARDEN INN	57	PLANNING
16	SHUMAKER	2	PLANNING
26	WALTERS	1	PLANNING
41	BROOKSMILL PHASE II	44	POTENTIAL
24	CHESAPEAKE ESTATES ADDITIONAL LOTS	100	POTENTIAL
1	VIA	4	PROPOSED

## 2. Land Use and Zoning

The Zoning Districts established by the Zoning Ordinance are listed below in Table 4.3. Appendix 3.14 contains the EHT Zoning Map.



**TABLE 4.3  
EHT ZONING DISTRICTS**

<b>ZONING DISTRICT</b>	<b>DESCRIPTION</b>
Conservation	This Zone seeks to protect large concentrations of environmentally sensitive features that also have significant value for passive and active recreational pursuits.
Commercial Recreation	The purpose of this Zone is to accommodate development associated with the Penn National Raceway, the Manada Gap Golf Course and other areas that exist within the Township.
Highway Commercial	This Zone provides suitable locations for highway-oriented retail, service, and entertainment businesses. The uses may involve outdoor activities and/or storage areas like automobile, boat and trailer sales, and service establishments.
Industrial	This Zone provides for a wide range of industrial activities that contribute to the well being of the Township by diversifying its economy and providing valuable employment opportunities.
Interchange Commercial	This Zone provides for large-scale retail, entertainment, and service uses within the Township. Uses within this Zone are meant to draw upon a Township-wide and regional market.
Mobile Home Park	This zone acknowledges mobile home park sites within the Township, and protects their continued existence.
Rural Agricultural	The primary purpose of this Zone is to blend productive farmlands with rural residences in outlying areas of the Township.
Residential Medium Density	This zone represents the Township's residential growth area. Because of the proximity with the planned provision of public services and utilities, overall permitted densities are higher here, than elsewhere within the Township.
Village Residential	This zone accommodates a mixture of land uses that have evolved within the villages of Grantville and Shellsville. Limited businesses have been selected to provide convenient access to nearby residents and commuters.

### 3. Future Growth Area

Future growth areas are shown in Appendix 3.16. Properties depicted in pink indicate areas of current development where property owners have requested inclusion in this Plan or capacity from the municipal sewer.

Potential growth areas are shown in yellow and are defined by the following.

- Have previously been proposed for development but were tabled or rejected in the process, showing the owner's intent to develop in the future.
- Lands owned by the Hershey Trust, which are currently under a postponement of development but may in the future, be reactivated.
- Lands that have been identified by the Dauphin County Board of Assessment as being vacant lands for residential or commercial use greater than 10 acres in size.
- Properties indicated in the Subdivision and Land Development Map that have requested connection to the East Hanover Township Sewer System or inclusion in this Plan.

**Build-out Analysis:** A basic seventy percent efficiency build-out analysis was performed using natural restrictions, Dauphin County



current land use data, Dauphin County GIS building footprints, and impervious surface data. The resulting data is presented in Appendix 3.16. The remaining buildable lots were analyzed based on zoning limitations for lot size. As mentioned above, an additional 30 percent of buildable land was removed to assume for setbacks, erosion controls and easements.

Maximum build-out potential for residential lots is estimated at 5,342 lots. This takes into account the many agricultural lots in the Township and relatively small minimum lot sizes in the RA zoning district. Spatially, the pattern of residential build-out is scattered throughout the Township. The commercial maximum build-out is estimated at 756 lots. These lots are concentrated near the I-81 Interchange and in the Commercial Recreation districts.

Potential projected development based on the Dauphin County Comprehensive Plan (Table 4.4) population growth shows that an additional 146 residential lots may be developed by 2020. A 7% growth rate applied to commercial growth would produce an additional 50 lots. The East Hanover Township Land Use Assumptions Report (LUAR) indicates a 12% growth rate producing an additional 280 potential residential units. Commercial growth at 12% would equal 90 additional lots.

The future land use map shows the greatest potential for residential development in the Hershey Trust Properties along the Township's southern border. High residential development potential is also present in the Chesapeake Estates Mobile Home Park. Clustering of potential commercial development is shown east of the proposed Bow Creek Mall development and in the vicinity of the Penn National Raceway and Hollywood Casino on both maps.

It is imperative that the Township maintain a working relationship with land developers, in particular the Hershey Trust and Penn National Raceway, in order to coordinate appropriate development with expansion of sewer disposal methods and facilities.

Land development and growth pressures are expected to continue along the Route 743 corridor, the area surrounding the I-81 interchange, and Allentown Boulevard. It is also reasonable to consider potential future growth in the southern portions of the Township along Sand Beach Road. In the current state of the US economy, potential growth may be slower than previous trends; however with the current expansion of the Pennsylvania gaming industry, it should be expected that commercial development would increase sooner rather than later.

**Population Projections:** Local populations, housing, and employment trends depict how an area, its residents, housing stock and economy, all change over a period of time. These trends help determine planning and zoning policy as well as requirements per type of land use for the municipality. East Hanover Township has been growing at a rate greater than that of Dauphin County as a whole.



Two sets of population projections for 2010 and 2020 are presented for comparison. The first is from the Dauphin County Comprehensive Plan and is calculated based on birth and death rates and migration trends; the second is from the East Hanover Township Land Use Assumptions Report. It is calculated based on the number of building permits for new dwelling units multiplied by an average 2.7 persons per household (from the 2000 Census). Results of the two methods are compared in Figure 2.4. Specific findings are as follows:

- The Dauphin County projections yield lower population figures, resulting in an increase of 545 persons (10% growth) by 2010 and 395 persons (7% growth) by 2020. The 2020 projection reaches 6,262 persons.
- The Land Use Assumptions Report yields higher figures, resulting in an increase of 823 persons (15% growth) by 2010, and 756 persons (12% growth) by 2020. The 2020 projection reaches 6,901 persons.
- Although they differ in their specific results, the two population projection methods demonstrate the same general conclusion: population will continue to increase in East Hanover Township and surrounding municipalities over the next ten years.

**TABLE 4.4**  
**POPULATION PROJECTIONS, DAUPHIN COUNTY COMPREHENSIVE PLAN**

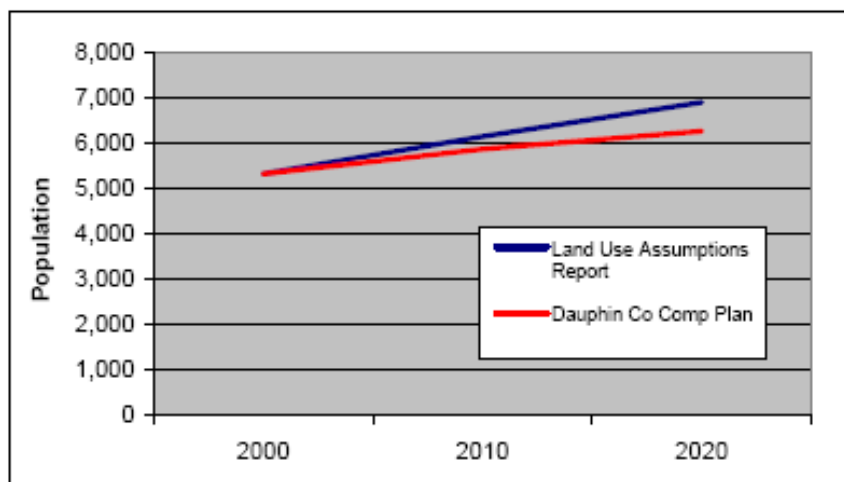
Municipality	2000	2007	2010	# Change	% Change	2020	# Change	% Change
	Census	Estimate	Projection	2000-2010	2000-2010	Projection	2010-2020	2010-2020
East Hanover	5,322	5,427	5,867	545	10.24%	6,262	395	6.73%
Middle Paxton	4,823	5,027	5,131	308	6.39%	5,353	222	4.33%
West Hanover	6,505	8,780	6,975	470	7.23%	7,315	340	4.87%
South Hanover	4,793	6,198	5,159	366	7.64%	5,424	265	5.14%
Derry	21,273	21,971	22,950	1,677	7.88%	24,164	1,214	5.29%
East Hanover (Lebanon Co)	2,858	3,203	2,946	88	3.08%	3,057	111	3.77%
Dauphin County	261,798	255,710	264,379	12,581	5.00%	273,485	9,106	3.44%

**TABLE 4.5**  
**POPULATION PROJECTIONS – EAST HANOVER TOWNSHIP**  
**LAND USE ASSUMPTIONS REPORT (November 2008)**

Municipality	2000	2007	2010	# Change	% Change	2020	# Change	% Change
	Census	Estimate	Projection	2000-2010	2000-2010	Projection	2010-2020	2010-2020
East Hanover	5,322	5,427	6,145	823	15.46%	6,901	756	12.30%



**FIGURE 4.A  
COMPARISON OF POPULATION PROJECTIONS**



#### **4. Zoning, SALDO, and Plans Relating to Protection of Resources**

Zoning and SALDO regulations pertaining to the protection of natural resources are discussed in section IV.A.3.

At the time of adoption of this Update to the Act 537 Plan, East Hanover Township was engaged in several natural resource protection studies and corresponding plans. An ordinance for stormwater management intended to reduce flooding in the Township was adopted in 2008. LTL Consultants Ltd. and ST Environmental Professionals Inc. will be submitting a final draft of an Aquifer Study to the Township Board of Supervisors in November 2010. The goal of the Aquifer Study is to analyze the aquifer's status and potential to sustain current use and potential development. A Potable Water Supply Management Plan (PWSMP) is also being drafted in tandem with the Aquifer Study. The PWSMP analyzes surface and groundwater for potentially providing public water to residents.

Secondly, a draft WWTF and Receiving Stream Analysis is nearing completion as of November 2010. This analysis measures the capability of the Dairy Lane WWTF and the Bow Creek to handle effluent loads from the Township's sanitary sewer system.

The research discussed above is intended to be the base work for drafting of comprehensive watershed protection policy in the subsequent years. This policy in cooperation with the Township Comprehensive Plan, to be completed in 2011, is intended to promote sustainable land development in cooperation with protection of natural resources.



**5. Sewage Planning for the 5- and 10-year Future Planning Periods**

Extended sewage planning based on existing and proposed wastewater system growth is addressed in the following

- Dauphin County Comprehensive Plan (2008): projected goals for the Plan extend to 2020.
- Tri-County Regional Growth Management Plan (RGMP): currently projects analysis and goals to 2020.







**V. ALTERNATIVES TO PROVIDE NEW / IMPROVED WASTEWATER FACILITIES****A. CONVENTIONAL COLLECTION, CONVEYANCE, TREATMENT AND DISCHARGE ALTERNATIVES**

The alternatives for this plan were developed with the purposes of protecting the health, safety and welfare of the residents by alleviating sanitary sewer issues in the Township, and to address existing and future sewer capacity. Maps depicting the alternatives are attached in Appendix 4.1.

The options and brief descriptions are as follows.

**TABLE 5.1  
TECHNICAL ALTERNATIVES CONSIDERED**

<b>ALTERNATIVE ID</b>	<b>DESCRIPTION</b>	<b>METHOD</b>
<b>1.A.1</b>	Extend existing system to Ridge Road using a centralized pump station.	Sewer Extension
<b>1.A.2</b>	Extend existing system to Ridge Road via Remove and Replace Existing Transmission Crossing I 81.	Sewer Extension
<b>1.A.3</b>	Extend existing system to Ridge Road via Dual Transmission Crossing I 81.	Sewer Extension
<b>2.A</b>	Connect Dairy Lane Properties to E & PH Sewer Project.	Sewer Extension
<b>2.B</b>	Extend Existing Preserve @ Bow Creek system to serve Kelly Ct. and Trail Road Properties.	Sewer Extension
<b>2.C</b>	New WWTF on Swatara Creek to serve Shady Ln., Canal Rd., and Trail Rd. properties.	New Treatment Facilities
<b>2.D</b>	New Pumping Station to serve Shady Ln., Canal Rd., and Trail Rd. properties.	Sewer Extension
<b>2.E</b>	Sewer Extension from Partridge Hills Development to Pheasant Rd., and Hill Dr.	Sewer Extension
<b>4.A.1</b>	Sewer Areas North of Route 22	Sewer Extension
<b>4.A.2</b>	Pump Sewage to WHT System.	Regional Facilities
<b>4.B.1</b>	Sewer Areas South of Route 22	Sewer Extension
<b>4.B.2</b>	Pump Sewage to Dairy Ln WWTF via Early's Mill Rd.	Sewer Extension
<b>4.C</b>	Construct Manada Creek WWTF to Treat Sewage from 4A & 4B	New Treatment Facilities
<b>4.D.1</b>	Decommission Private WWTF and extend sewers to Jonestown Rd.	Sewer Extension
<b>4.D.2</b>	Decommission Private WWTF and extend sewers to WHT system.	Regional Facilities
<b>4.E</b>	Combination of alternatives 4.A.1 (minus Berry Dr, Yellowstone Dr, and Manada View Dr), 4.B.1, and 4.B.2 with a treatment plant and discharge on the Manada Creek.	New Treatment Facilities
<b>4.F</b>	Combination of alternatives 4.A.1 (minus Berry Dr, Yellowstone Dr, and Manada View Dr), 4.B.1, and 4.B.2	Sewer Extension
<b>X.1</b>	Relocation of Existing Dairy Ln. WWTF outfall to Swatara Creek.	Sewer Extension



ALTERNATIVE ID	DESCRIPTION	METHOD
X.2	Funck's Exxon Pumping Station Improvements	Connect to System by Gravity When Available
X.3	Italian Delight Restaurant	Connect to System by Gravity When Available

## 1. Regional Wastewater Treatment

For the purposes of this plan Regional Wastewater Treatment infers a collaborative approach beyond one single political boundary. In general this approach was not consistent with the goals of this plan because:

- The Township has a WWTF with enough reserve capacity to meet the needs of this plan.
- The other municipalities surrounding East Hanover have an existing facility. This would require them to be the host municipality. Capacity would only be allocated as available. This could encumber any planning effort by East Hanover Township for sewage facilities. Due to the recent expansion of the gaming industry, the magnitude of growth within the Township is unknown. Therefore, it does not appear logical to enter into a restrictive agreement when the level of need has not been fully realized.
- All of the surrounding municipalities are distant from East Hanover's existing conveyance system and population centers. Economically it is not justifiable to incur a large cost for this type of extension when existing facilities reside within the Township.

In addition, surrounding Townships were contacted regarding the presence of existing sewers near their border with East Hanover Township. Only West Hanover Township has sewers at the border with East Hanover. West Hanover Township was contacted regarding potential use of their system to serve some of the needs of East Hanover. A definitive response has not been received.

## 2. Sewer Extension Potential

The basis of this plan is to use the existing WWTF at Dairy Lane to remediate those areas of concern listed in Table 5.1. Using sewer extensions, based on the cost analysis performed, is the most feasible method to achieve this goal. As can be seen in Table 5.1 sewer extension is the most prevalent method.

This is justified for the following reasons:

- With the growth of the gaming industry within East Hanover Township there are areas where the magnitude of growth is unclear. By extending sewer within the Township the overall



planning for future requirements is managed within the Township.

- The wastewater facilities within the Township were financed through a PENNVEST loan. Debt service is scheduled to mature in 2026. By extending sewers to those areas of need, the burden of that debt service is shared amongst more users and therefore offers the Township the opportunity to maintain rates on a more consistent basis.
- By maintaining rates on a more consistent basis, budgeting and planning become a more straightforward process from year to year.
- Due to the regulations promulgated by the Chesapeake Bay Initiative, discharge of treated wastewater in this area is more stringent. Nutrient budgets attached to new discharges are kept exceptionally low. By extending sewer, existing budgets are utilized, eliminating the need for enhanced treatment facilities.
- The Township has operational staff to maintain the current systems. New systems would require the expansion of this staff. Although additional staff is envisioned over the planning period, new and/or innovative systems would expand manpower requirements beyond the expectations of the elected officials.

### **3. Potential for Continued Use of Existing Facilities:**

East Hanover Township currently has existing facilities with reserve capacity. Inflow and Infiltration is low to moderate. This is further corroborated by the most recent Chapter 94 Wasteload Management Report. The basis of this plan is to utilize existing facilities to alleviate sewage disposal needs within the Township.

### **4. Repair Existing Collection System Components**

The existing systems were constructed in 2004. They are expected to remain in good condition over this planning period. Although repairs are not needed at this time, continued maintenance will be. The operational and engineering staff currently reviews the monthly reports for indications of inflow/infiltration. The operational staff has a routine maintenance schedule. Continued observance of these practices will enable the existing facilities to be used to execute this plan.

### **5. Need for New Systems**

Several alternatives were reviewed in reference to new systems. Specifically new plants were considered for the Manada Creek basin and a discharge to the Swatara Creek. These systems were rejected for the following reasons:

- They did not meet the goals of this plan in reference to the use of reserve capacity within the existing plant. This would have encumbered the Township with additional debt service and expansion of the operational staff.



- The Preliminary Treatment Requirements (PTR) provided by the PA DEP limited the nutrient discharge levels for any new system to stringently low criteria. This would have created the need for enhanced and technically advanced treatment facilities. This appears unnecessary since the existing system is functioning correctly, has an existing discharge budget and an existing user base.
- Economically the costs associated with new systems could not be justified.

**6. Use Of Innovative Collection/Conveyance To Serve Needs Areas Using Existing WWTF**

The Township currently has an existing conventional system with reserve capacity. To create a new system utilizing innovative collection/conveyance is not warranted.

**B. USE OF OLDS INCLUDING SPRAY IRRIGATION SYSTEMS**

The use of OLDS is the current method of sewage disposal in most of East Hanover Township. Spray irrigation systems for individual lots would be reviewed on a case-by-case basis and must demonstrate compliance with PA DEP design standards. East Hanover Township does not have an ordinance in place regulating spray irrigation systems.

Although spray irrigation as a Township method of effluent disposal was considered due to the beneficial recharge it has on the aquifer, it was eliminated because it was in conflict with the goals of this plan.

- Spray Irrigation is based on the soils ability to receive treated effluent. The soils in the Township are marginal, at best, to function in this capacity.
- The Township has an existing system with reserve capacity and a user base.
- Spray irrigation would create another source of nutrient loading to the Chesapeake. Based on the PTRs provided by the PA DEP, it was logical to assume that this would create the need for new treatment systems.
- The Township has no readily available site for land application. Finding a centralized new site is not an efficient use of Township land or resources.
- Spray irrigation is limited to months where the ground is not frozen. During these months treated effluent would have to be stored and hauled to the existing plant (if permitting would allow). This is an inefficient manner of handling any waste stream.

**1. Soil/Slope Suitability**

Soil and slope suitability for spray irrigation systems in the southern half of the Township is recognized as slightly limited based on data generated from the USGS/NRCS SSURGO database. Availability of



potential for spray irrigation systems for OLDS would be considered on a case-by-case basis.

## **2. Preliminary Hydrogeologic Evaluations**

The SALDO Article 6 Section 620.3 requires preliminary hydrogeologic evaluations, when development is proposed within a quarter mile of areas known to possess greater than 5 milligrams of nitrate-nitrogen in the groundwater. These areas are identified in Appendix 3.10.

## **3. Sewage Management Programs**

A Sewage Management Program has been in effect in EHT. Refer to Appendix 1.2.

## **4. Repair/Replacement/Upgrading Of Existing Malfunctioning Systems In Areas Suitable For OLDS:**

Repair and replacement and upgrading of existing malfunctioning OLDS is currently regulated by the Township Ordinance on the Municipal Management of On-Lot Sub-Surface Sewage Disposal Facilities, Ordinance 98-6 as amended (see Appendix 1.2). As is indicated by the ordinance, any sewage system disposing of sewage either upon the lot by which it serves, or into a community system must be permitted via review and approval by the Township and its SEO.

Requirements for placement of disposal systems are also set in place by the SALDO.

In general the Township is not readily suited for OLDS. Poor soils, slopes and the age of many of the homes make this an unreliable sewage facility. It is the intention of this plan to strengthen the current sewer management program by adding a SFSTF Ordinance. By adding this ordinance virtually all forms of sewage disposal will be regulated by the Township.

## **C. USE OF SMALL FLOW TREATMENT FACILITIES**

Use of small flow treatment systems did not meet the goals of this plan for the following reasons:

- Existing infrastructure and treatment capacity to connect areas of concern is available.
- During the production of several alternatives, PTRs were sought for the Manada Creek, the Swatara Creek and some of their tributaries. Based on the minimal nutrient loading listed in the PTRs it makes it impractical to install a small flow system that can consistently meet discharge criteria.
- The current staffing is not sufficient to meet the operational needs of a small facility in addition to the operations of the Dairy Lane WWTF.
- The soils in the Township do not support long-term use of OLDS. Therefore, any technology based on discharge to the soil could not be considered.



**1. Treatment And Discharge Requirements**

As stated previously, this plan reviewed discharge criteria through PTRs (See Appendix 4.4). The discharge criteria given were stringent to the point that any additional discharge to the waters of the Commonwealth interior to East Hanover Township could not be considered.

**2. Soil Suitability**

Overall the soil conditions are not suitable for most types of on-lot disposal systems. The registered SEO will allow use of these on a case-by-case basis of suitability and certification.

**3. Preliminary Hydrogeologic Study Requirements**

Preliminary hydrogeologic studies are required by the SALDO.

**4. O&M Requirements Through Sewage Mgmt. Program**

The Sewage Management Program is discussed in Section III.B.5.

**D. USE OF COMMUNITY LAND DISPOSAL ALTERNATIVES**

Although no community on-lot disposal systems exist in the Township, use of such systems is not restricted. Planning and development of these systems are set under the purview of the Township through the On-Lot Sub Surface Sewage Disposal Facilities, Ordinance 98-6 as amended (see Appendix 1.2)

**E. USE OF RETAINING TANKS**

The use of retaining tanks in East Hanover Township is permitted through On-Lot Sub Surface Sewage Disposal Facilities, Ordinance 98-6 as amended (see Appendix 1.2). Their use is limited to abate a malfunction or as an interim measure, temporary or seasonal in nature. There are nine known residential holding tanks in use in the Township. Locations of the tanks are as indicated in Table 3.3 and Appendix 3.9.

**F. SEWAGE MANAGEMENT PROGRAM**

The Sewage Management Program is discussed in Section III.B.5.

**G. NON-STRUCTURAL COMPREHENSIVE PLANNING ALTERNATIVES**

Non-structural planning alternatives consist of mechanisms such as zoning ordinances and subdivision and land development ordinances that may impact sewage disposal in the municipality. These alternatives are as follows:

**1. Modification to Comprehensive Plans**

The Township is currently drafting a new Comprehensive Plan. It is anticipated that the final version of the Comprehensive Plan shall be approved and adopted in 2011. This Update of the Act 537 Plan is being used to draft goals for the Comprehensive Plan. It is intended that both documents, when completed shall be consistent.

**2. Consideration for Local Comprehensive Plan**

See V.G.1 above.



**3. Municipal Subdivision and Zoning Regulations**

The Township's Zoning, Sewage Management and Subdivision and Land Development Ordinances set requirements for assuring long-term use of OLDS and protection of replacement disposal sites. Refer to Section IV.A.2.

As part of the revisions to the Comprehensive Plan, new zoning districts are being considered to better facilitate sewers to areas that need it; and appropriately restrict growth in areas that are far from existing infrastructure. The utilization of existing infrastructure allows for the most efficient use of land.

**4. Local Agency Program and Training**

Local agency program and training was considered as part of this plan. However, due to limited staff and economic resources this effort has been given a secondary priority ranking. If future conditions allow for this type of effort it will be reconsidered at that time.

**H. NO ACTION ALTERNATIVE**

A "No Action" Alternative would recommend that East Hanover Township "do nothing". This would result in negative effects in both the short and long terms. Although not under order by the Commonwealth to conduct the drafting of this plan, the Township recognizes the need for planning in order to avert these potential problems.

Increases in the amount of OLDS malfunctions will result in the heightened risk of bacterial and mineral contamination of ground and surface waters. This would lead to negative social, economic and community growth factors.

Lack of proper planning for coordination of growth with provisions for utilities will lead to increased strain on the East Hanover Township system. Further complications related to sustainability of the system may also lead to unforeseen legal and environmental complications.

The No Action Alternative is not an option.







## VI. EVALUATION OF ALTERNATIVES

The table below lists all of the Technical Alternatives reviewed and the conclusion on their status. Included in Appendix 4.1 is the mapping of each alternative.

### TECHNICAL ALTERNATIVES CONSIDERED

ALTERNATIVE ID	DESCRIPTION	STATUS
1.A.1	Extend existing system to Ridge Road using a centralized pump station.	REJECTED <ul style="list-style-type: none"> <li>Based on preliminary engineering flow from this area can be conveyed by gravity.</li> <li>Alternative would be reconsidered with third-party contribution.</li> <li>No cost opinion rendered for this option for the reasons stated above.</li> </ul>
1.A.2	Extend existing system to Ridge Road via Remove and Replace Existing Transmission Crossing I-81.	REJECTED <ul style="list-style-type: none"> <li>Cost required is not justified based on the small number of residents connected.</li> <li>Alternative would be reconsidered with third-party contribution.</li> </ul>
1.A.3	Extend existing system to Ridge Road via Dual Transmission Crossing I 81.	REJECTED <ul style="list-style-type: none"> <li>Cost required is not justified based on the small number of residents connected.</li> <li>Alternative would be reconsidered with third-party contribution.</li> </ul>
2.A	Connect Dairy Lane Properties to E & PH Sewer Project.	SELECTED <ul style="list-style-type: none"> <li>The money generated through tapping fees is enough to cover any construction effort for this area.</li> <li>This area shows a need based on the well sampling and survey data.</li> </ul>
2.B	Extend Existing Preserve @ Bow Creek system to serve Kelly Ct. and Trail Road Properties.	REJECTED <ul style="list-style-type: none"> <li>Cost required is not justified based on the small number of residents connected.</li> <li>Alternative would be reconsidered with third-party contribution or the expansion of the collection system by development in this area.</li> </ul>
2.C	New WWTF on Swatara Creek to serve Shady Ln., Canal Rd., and Trail Rd. properties.	REJECTED <ul style="list-style-type: none"> <li>PTR requirements provided by PA DEP show negligible nutrient budgets, making stream discharge impractical.</li> <li>Cost is not justified based on the number of homes served.</li> <li>Not consistent with the goals of this plan. This option creates an unwanted nutrient source to the Chesapeake Bay and does not utilize existing infrastructure.</li> </ul>
2.D	New Pumping Station to serve Shady Ln., Canal Rd., and Trail Rd. properties.	REJECTED <ul style="list-style-type: none"> <li>Cost is not justified based on the number of homes served.</li> </ul>
2.E	Sewer Extension from Partridge Hills Development up Pheasant Rd. to a point past S. Hill Drive	SELECTED <ul style="list-style-type: none"> <li>This sewer extension remedies the potential and suspected malfunctions in an area known to have inadequate soils for OLDS, thereby protecting the public health.</li> <li>The extension meets the goals of this plan by utilizing existing capacity and conveyance.</li> </ul> REJECTED <ul style="list-style-type: none"> <li>The Hill Drive portion of this alternative was rejected</li> </ul>



ALTERNATIVE ID	DESCRIPTION	STATUS
		due to the use of grinder pumps.
4.A.1	Sewer Areas North of Route 22	SEE ALTERNATIVE 4.F
4.A.2	Pump Sewage to WHT System.	REJECTED <ul style="list-style-type: none"> <li>The Township has a WWTF with enough reserve capacity to meet the needs of this plan.</li> <li>The other municipalities surrounding East Hanover have an existing facility. This would require them to be the host municipality. Capacity would only be allocated as available. This could encumber any planning effort by East Hanover Township for sewage facilities. Due to the recent expansion of the gaming industry the magnitude of growth within the Township is unknown. Therefore, it does not appear logical to enter into a restrictive agreement when the level of need has not been fully realized.</li> <li>All of the surrounding municipalities are distant from East Hanover's existing conveyance system and population centers. Economically it is not justifiable to incur a large cost for this type of extension when existing facilities reside within the Township</li> </ul>
4.B.1	Sewer Areas South of Route 22	SEE ALTERNATIVE 4.F
4.B.2	Pump Sewage to Dairy Ln WWTF via Early's Mill Rd.	SEE ALTERNATIVE 4.F
4.C	Construct Manada Creek WWTF to Treat Sewage from 4A & 4B	REJECTED <ul style="list-style-type: none"> <li>PTR requirements submitted by PA DEP show negligible nutrient budget making stream discharge impractical.</li> <li>Cost is not justified based on the number of homes served.</li> <li>Not consistent with the goals of this plan. This option creates an unwanted nutrient source to the Chesapeake Bay and does not utilize existing infrastructure.</li> </ul>
4.E	Combination of alternatives 4.A.1 (minus Berry Dr, Yellowstone Dr, and Manada View Dr), 4.B.1, and 4.B.2 with a treatment plant and discharge to Manada Creek.	REJECTED <ul style="list-style-type: none"> <li>PTR requirements submitted by PA DEP show negligible nutrient budget making stream discharge impracticable. This option was abandoned based on this information. Existing facilities meet these needs.</li> <li>Not consistent with the goals of this plan. This option creates an unwanted nutrient source to the Chesapeake Bay and does not utilize existing infrastructure.</li> </ul>
4.F	Combination of alternatives 4.A.1 (minus Berry Dr, Yellowstone Dr, and Manada View Dr), 4.B.1, and 4.B.2	SELECTED <ul style="list-style-type: none"> <li>This option provides a solution for 180 homes within the Township. This is the largest problem area with the highest construction costs.</li> <li>This option meets the goals of this plan in their entirety.</li> <li>This does not create another nutrient source within the Township.</li> <li>This option creates a "bridge" via pumping, crossing the ridgeline within the Township that can serve other areas in the western portion of the Township.</li> </ul>
X.1	Relocation of Existing Dairy Ln. WWTF outfall to Swatara Creek.	REJECTED <ul style="list-style-type: none"> <li>PTR requirements from PA DEP show negligible nutrient budget; making discharge relocation impractical.</li> </ul>



ALTERNATIVE ID	DESCRIPTION	STATUS
X.2	Funck's Exxon Pumping Station Improvements	SELECTED <ul style="list-style-type: none"> <li>This option provides relief for the costly maintenance required for this pumping station.</li> </ul>
X.3	Italian Delight Restaurant	SELECTED <ul style="list-style-type: none"> <li>This option provides a solution for connecting the restaurant without the additional financial burden of constructing and maintaining another grinder pumping station.</li> </ul>

#### A. TECHNICALLY FEASIBLE ALTERNATIVE – CONSISTENCY

##### 1. Clean Streams Law and Clean Water Act

The installation of sewers in these instances is protective to human health and the environment, and is therefore considered consistent with both the Clean Streams Law and Clean Water Act.

##### 2. Municipal Wasteload Management Plans

The selected alternatives have been found to show no impact to current wasteload management requirements. Further research being conducted in the WWTF and Receiving Stream Analysis shall be central to future evaluation of wasteload limitations.

##### 3. Title II – Clean Water Act

The installation of sewers in these instances is protective to human health and environment, and is therefore considered consistent with Title II of the Clean Water Act.

##### 4. Comprehensive Plan Consistency

The selected alternatives have been found to be consistent with the goals of the Dauphin County Comprehensive Plan and the Tri-County Regional Growth Management Plan. The East Hanover Township Comprehensive Plan is being drafted closely with this Act 537 Plan and is intended to be consistent.

##### 5. Anti-Degradation Requirements

The use of existing infrastructure and treatment facilities is consistent with anti-degradation requirements.

##### 6. State Water Plan

This plan calls for sewer extensions to areas that have shown failing on-lot systems. This is consistent with the State Water Plan.

##### 7. Pennsylvania Prime Agricultural Land Policy

Prime agricultural soils are shown on the soils map in Appendix 3.19, and are scattered throughout East Hanover Township.



**8. County Stormwater Management Plans**

The proposed sewer extension and ordinances associated with this plan do not impact stormwater management.

**9. Wetland Encroachments**

The soils map in Appendix 3.6 shows hydric, or wetland, soils. There are no planned encroachments in any of the options. If the design data requires either a wetlands or stream crossing the appropriate permits will be sought.

**10. Pennsylvania Natural Diversity Inventory**

As part of this plan a Pennsylvania Natural Diversity Inventory was executed. The results of that search are included in Appendix 4.2. As the planned construction moves forward this search will be updated as required.

**11. Historical and Archaeological Resource Protection.**

Included in Appendix 4.3 is the relevant correspondence with the Pennsylvania Historical & Museum Commission (PHMC). As the planned construction moves forward the listed recommendations will be considered.

**B. RESOLUTION OF INCONSISTENCIES**

The Dauphin County Planning Commission has reviewed the proposed Plan and its comments are included in the Planning Commission Comments Section on page xiii.

**C. WATER QUALITY ALTERNATIVE EVALUATION****1. Water Quality Standards**

All alternatives reviewed for this plan were compared to and are consistent with Title 25, Chapter 92 Water Quality Standards.

**2. Effluent Limitations**

For the derivation of several of the alternatives that utilized a new discharge location, PTRs were requested from the PA DEP. In response the PA DEP provided the PTRs included in Appendix 4.4. All alternatives having a new or increased discharge utilized these effluent limitations for the purpose of comparison and treatment technology selection.

**3. Technical, Legislative, and Legal Requirements**

No technical or legislative requirements were identified. East Hanover Township would meet all legal requirements.

**D. COST ESTIMATES**

The engineer's cost estimate for the identified alternatives are summarized below. Included in Appendix 4.5 is a detailed breakdown of each estimate.



<b>OPTION</b>	<b>Alternative Description</b>	<b>EDU's</b>	<b>Estimated Cost</b>
1.A.2	Extend sewer to existing properties along Ridge Road and connect before crossing I-81	37	\$ 1,790,000
1.A.3	Install 30" main parallel to existing 10"/8" main thru culvert under I-81 and to Pump Station #3	N/A	\$ 3,000,000
2.A	Connect properties along Dairy Lane as part of the Englewood Sewer Project	8	\$ 16,850
2.B	Connect Kelly Court and Faith Road to existing system in Preserve at Bow Creek Phase I	24	\$ 1,470,000
2.C	Install gravity mains to serve Shady Lane, Canal Road and Trail Road connecting to a New WWTF on Swatara Creek	75	\$ 4,130,000
2.D	Install gravity mains to serve Shady Lane, Canal Road and Trail Road along with a Pump Station to Dairy Lane WWTF	75	\$ 3,820,000
2.E	Extend proposed Partridge Hills Sewer system to Pheasant Road	22	\$ 900,000
4.A.2	Connect properties along Berry Dr, Hunter Ln, Red Fox Ln, Mill Rd, Campbell Ct, Circle Dr to West Hanover Twp via 3 PS in series	129	\$ 5,580,000
4.B.2	Connect properties along Sycamore Ln, Chestnut Pl, Carlson Rd and Crooked Hill Rd via PS to Dairy Lane WWTF	80	\$ 5,540,000
4.C	Connect properties along Sycamore Ln, Chestnut Pl, Carlson Rd and Crooked Hill Rd to WWTF on Manada Creek	80	\$ 3,930,000
4.F	Connect properties along Hunter Ln, Red Fox Ln, Mill Rd, Campbell Ct, Circle Dr, Sycamore Ln, Chestnut Pl, Carlson Rd and Crooked Hill Rd via PS to Dairy Lane WWTF	180	\$ 8,960,000
4.E	Connect properties along Hunter Ln, Red Fox Ln, Mill Rd, Campbell Ct, Circle Dr, Sycamore Ln, Chestnut Pl, Carlson Rd and Crooked Hill Rd to WWTF on Manada Creek	180	\$ 7,350,000
X.2	Connect Funck's Exxon by gravity to existing sewer line	N/A	N/A
X.3	Connect Italian Delight by gravity to existing sewer line	N/A	N/A

*Note: Many of these options are combinations of the totals shown on Cost Estimate Worksheets found in Appendix 4.5.*

## **E. FUNDING ANALYSIS**

The largest funding will be for the construction of alternative 4.F that conveys sewer from 180 homes on the western portion of the Township to the Dairy Lane WWTF via a pump station. This is estimated to have a construction and project costs of approximately \$8,900,000.

This will be funded through the creation of a capital reserve plan and public or private financing. To accomplish this the Township will have to initially raise annual rates from \$640 to \$700. Once those rates are installed the Township will have to raise rates approximately 6.7 percent per year for 10 years. Once that is complete new and existing debt service will be balanced with those rates and the only increases necessary will be for inflationary or staffing increases.



Extension of sewer to Pheasant Road will cost approximately \$900,000 and the connection of those homes on Dairy Lane is estimated to cost \$16,850. Based on the proposed schedule these will not impact rates beyond those that are already projected (6.7 percent).

The Township has an existing PENNVEST loan set to mature in 2026. For the financing of option 4.F an additional loan will be required. The source of that loan is not known at this time due to the time frame of this plan.

In order to institute this Plan, including the financial portion, the Township will be creating an Authority. They will execute the plan, develop the capital reserve and secure financing in the future.

## **F. IMPLEMENTATION APPROACHES**

### **1. Activities Necessary to Abate Public Health Hazards**

The residents of wells that tested positive for fecal coliform contamination were immediately notified and given guidance for well disinfection. The chosen alternatives for sewer extensions in themselves remediate areas that may pose a hazard in the future.

### **2. Phasing**

None of the selected alternatives require phasing.

## **G. ADMINISTRATIVE ORGANIZATIONS AND LEGAL AUTHORITY**

East Hanover Township will be the administrative and legal agency responsible for plan implementation. The Township SEO is responsible for administering the Sewage Management Program. The Township will delegate the execution of the plan to a newly created Authority.



**VII. INSTITUTIONAL EVALUATION****A. EXISTING WASTEWATER TREATMENT AUTHORITIES****1. Financial and Debt Status**

This plan calls for the creation of an Authority to administer and execute the provisions contained herein. Currently the Township has an existing loan with PENNVEST for the Dairy Lane WWTF and collection system. This debt would be transferred to an Authority once it is operational. The current debt service is approximately \$345,000, which is paid out of the existing user rates.

**2. Available Staff and Administrative Resources**

East Hanover Township has the resources to administer the existing sewage management program, sewage collection system and treatment facility.

**3. Existing Legal Authority**

East Hanover Township Board of Supervisors has the legal authority to implement the recommendations of this plan. The annual Township sewer fund budget will provide the funds to operate the Sewage Management Program and the collection and treatment system.

**B. INSTITUTIONAL ALTERNATIVES NECESSARY TO IMPLEMENT PLAN****1. Need for New Municipal Departments and Authorities**

This plan proposes the creation of the East Hanover Township Municipal Authority. Currently the Board of Supervisors attends to and administers the operations of the WWTF and collection system via a Sewer and Water Committee. Based on the financial obligation and timeframe illustrated in this plan it has become apparent that an outside body of appointed officials is necessary to insure that the terms of this plan are met. In addition, the level of borrowing may be over the capacity of the Township per the Local Government Unit Debt Act.

**2. Functions of Proposed Organizations**

The new Authority will be required to:

- Hire and maintain operations staff.
- Execute the provisions of the Act 537 that pertain to normal Authority operations.
- Set and collect rates to maintain facilities and develop a Capital Reserve.
- Oversee the operations and maintenance of the collection system and WWTF.
- Insure that the WWTF stays within the limits of the National Pollutant Discharge Elimination System (NPDES) permit and those dictated by Chapter 94.



**3. Cost of Administration, Implementation and Capacity of Board to React to Future Needs.**

Administrative costs are considered to be negligible, and will be paid through the annual Sewer Fund, and user fees. The Township has the ability to implement the recommendations of this Plan through the Board of Supervisors.

**C. ADMINISTRATIVE AND LEGAL ACTIVITIES**

**1. Incorporation of Authorities or Agencies**

All required agencies are in place. The creation of an Authority will be completed by the Township Solicitor or their agent based on existing legal requirements.

**2. Development of Ordinances, Regulations, Standards and Agreements**

All necessary regulations, standards and agreements are in place for the continued operation of the existing collection system and the WWTF. The only new ordinance required is the SFSTF Ordinance to manage the use and operation of small-flow facilities in the Township.

**3. Providing Right-of-Way, Easements, and Land Transfers**

Easements will need to be developed for the selected alternatives relating to sewer extensions. The exact number and location of these easements will not be known until the design for these facilities is complete.

**4. Adoption of Other Municipal Sewage Facilities Plans**

This plan is not contingent upon the adoption of another municipality's plan.

**5. Other Legal Documents**

There is no need to develop any other legal documents.

**6. Dates and Time Frames**

Refer to Implementation Schedule, Section VIII.C.

**D. PROPOSED INSTITUTIONAL ALTERNATIVE**

The recommended institutional alternative for this Plan is the creation of a Sewer and Water Authority.



## **VIII. IMPLEMENTATION SCHEDULE AND SELECTED ALTERNATIVE**

### **A. SELECTED ALTERNATIVE**

#### ***The recommendation of this plan is as follows:***

- The creation of the East Hanover Township Municipal Authority.
- The implementation of Technical Alternatives 2.A, 2.E, and 4.F.
- The Sewage Management Program will continue in areas of OLDS.
- The Township will develop a Small Flow Sewage Treatment Facilities Ordinance to regulate any proposed use of these types of systems.
- The Township will connect Funck's Exxon and Italian Delight by gravity when available.

#### **1. Existing Wastewater Disposal Needs**

The wastewater disposal needs of East Hanover Township are documented in Section III. The current needs are being met through:

- Zoning ordinances that regulate growth in areas not supported by infrastructure.
- SALDO by specifying lot sizes and replacement areas for homes built in non-sewered areas.
- Maintenance of existing systems by utilizing the sewage management program.
- Existing conveyance and treatment facilities that currently serve the residents of East Hanover Township.

#### **2. Future Wastewater Disposal Needs**

This Plan, at its base, deals with future wastewater disposal needs. Beyond the time frame of this plan there is still additional reserve capacity within the treatment facilities. Furthermore the current site of the WWTF is large enough that the capacity can be expanded to double the current size.

#### **3. Operation and Maintenance Considerations**

The current WWTF has an existing maintenance schedule. The collection system is inspected at different times of the year. The implementation of the chosen alternative will not require modifications to the current practices.

#### **4. Cost Effectiveness**

The recommendations of this plan appear to be the most cost effective option with respect to achieving the goals of protecting the health of the residents and the natural resources of East Hanover Township. This plan identifies the largest area of concern with the largest number of residents (180 EDUs) and creates a solution for this challenge. By elongating the implementation schedule and developing a capital reserve to offset construction costs the Township creates the most feasible and cost effective solution.



**5. Available Management and Administrative Systems**

Existing Township personnel will manage the Sewage Management Program and the sewage collection system and treatment facility. Once an Authority has been formed these responsibilities will be transferred to the Authority.

**6. Available Financing Methods**

The largest funding will be for the construction of alternative 4.F that conveys sewer from 180 homes on the western portion of the Township to the Dairy Lane WWTF via a pump station. This is estimated to have a construction and project costs of approximately \$8,900,000.

This will be funded through the creation of a capital reserve plan and public or private financing. To accomplish this the Township will have to initially raise annual rates from \$640 to \$700. Once those rates are installed the Township will have to raise rates approximately 6.7 percent per year for 10 years. Once that is complete, new and existing debt service will be balanced with those rates and the only increases necessary will be for inflationary or staffing increases.

Extension of sewer to Pheasant Road will cost approximately \$900,000 and the connection of those homes on Dairy Lane is estimated to cost \$16,850. Based on the proposed schedule these will not impact rates beyond those that are already projected (6.7 percent).

The Township has an existing PENNVEST loan set to mature in 2026. For the financing of option 4.F an additional loan will be required. The source of that loan is not known at this time due to the time frame of this plan.

In order to institute this plan, including the financial portion the Township will be creating an Authority. They will execute the plan, develop the capital reserve and secure financing in the future.

**7. Environmental Soundness**

The recommendations of this plan will have no significant adverse environmental or natural resource impacts. In fact, they will eliminate public health risks, improve sustainability, and decrease the contamination of well water from malfunctioning on-lot sewage systems.

**B. CAPITAL FINANCING PLAN**

See Section VIII.6 above. Appendix 4.5 contains the tables with the short-listed alternatives and their corresponding economic analyses. Option 4.F is the selected alternative and the financing plan is based on that data.



**C. IMPLEMENTATION SCHEDULE**

<b>MAJOR MILESTONE</b>	<b>DATE</b>
Connect the Dairy Lane Properties to the Sewer System (Alt. 2.A)	November 2011 (Only if construction is completed)
Start Design for the Pheasant Road Sewer Extension (Alt. 2.E)	November 2011
Create SFSTF Ordinance	February 2012
Complete Design and Permitting for the Pheasant Road Sewer Extension (Alt.2.E)	August 2012
Create the East Hanover Township Municipal Authority	February 2013
Bid the Pheasant Road Extension (Alt. 2.E)	October 2012
Complete Construction of the Pheasant Road Sewer Extension (Alt. 2.E)	December 2013
Start Design of the Study Area 4 Sewer Extension (Alt. 4.F)	August 2018
Complete Design and Permitting of the Area 4 Sewer Extension (Alt. 4.F)	February 2020
Bid the Study Area 4 Sewer Extension (Alt. 4.F)	April 2020
Complete Construction of the Study Area 4 Sewer Extension (Alt. 4.F)	April 2022







## **IX. APPENDICES AND MAPPING**

Appendices and mapping are in the following pages.







## **APPENDIX 1.0 – SEWAGE MANAGEMENT ORDINANCES**

- 1.1 Ordinance Number 98-5 – Sewer Connections**
- 1.2 Ordinance Number 98-6 – On Lot Disposal System Management**
- 1.3 Ordinance Number 2009-2 – Sewer Capacity Reservations**







TOWNSHIP OF EAST HANOVER  
DAUPHIN COUNTY, PENNSYLVANIA

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ORDINANCE 98 - 5

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AN ORDINANCE

OF THE BOARD OF SUPERVISORS OF THE TOWNSHIP OF EAST HANOVER, DAUPHIN COUNTY, PENNSYLVANIA, REQUIRING ALL OWNERS OF IMPROVED PROPERTY LOCATED WITHIN THIS TOWNSHIP AND ACCESSIBLE TO AND WHOSE PRINCIPAL BUILDING IS WITHIN 150 FEET FROM THE SEWER SYSTEM TO BE CONSTRUCTED AND/OR TO BE ACQUIRED BY EAST HANOVER TOWNSHIP, AND/OR ALL PROPERTIES DIRECTED BY ORDER OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, TO CONNECT SUCH IMPROVED PROPERTY WITH AND TO USE SUCH SEWER; REGULATING THE MANNER OF MAKING SUCH CONNECTIONS; AUTHORIZING THIS TOWNSHIP TO MAKE CONNECTIONS AT THE COST AND EXPENSE OF ANY OWNER OF IMPROVED PROPERTY FAILING TO MAKE SUCH CONNECTION; ADOPTING CERTAIN RULES AND REGULATIONS AND PROVIDING FOR ADOPTION OF ADDITIONAL RULES AND REGULATIONS; PROHIBITING THE CONNECTION OF PRIVY VAULTS, CESSPOOLS, SINKHOLES, SEPTIC TANKS AND SIMILAR RECEPTACLES TO ANY SEWER; PROHIBITING THE MAINTENANCE OF CERTAIN RECEPTACLES AND REQUIRING ABANDONMENT THEREOF WHEN DIRECTED TO DO SO BY SUCH AUTHORITY; SETTING FORTH RELATED MATTERS; AND PRESCRIBING PENALTIES FOR VIOLATION.

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The Board of Supervisors of the Township of East Hanover, Dauphin County, Pennsylvania, enacts and ordains as follows:



## ARTICLE I

### Definitions

Section 1.01. Unless the context specifically and clearly indicates otherwise, the meaning of terms and phrases used in this Ordinance shall be as follows:

A. "Building Sewer" shall mean the extension from the sewage drainage system of any structure to the Lateral of a Sewer;

B. "Commonwealth" shall mean the Commonwealth of Pennsylvania;

C. "Improved Property" shall mean any property within this Township upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or by animals and from which structure Sanitary Sewage and/or Industrial Wastes shall be or may be discharged;

D. "Industrial Establishment" shall mean any Improved property located within this Township used or intended for use, wholly or in part, for the manufacturing, processing, cleaning, laundering or assembling of any product, commodity or article, or any other Improved Property located within this Township from which wastes, in addition to or other than Sanitary Sewage, shall be discharged;



E. "Industrial Wastes" shall mean any and all wastes discharged from an Industrial Establishment, other than Sanitary Sewage. Said waste shall be pretreated to a level approved by the Township prior to discharge into the system;

F. "Lateral" shall mean that part of the Sewer System extending from a Sewer to the curb line or, if there shall be no curb line, to the property line or, if no such lateral shall be provided, then "Lateral" shall mean that portion of, or place in, a Sewer which is provided for connection of any Building Sewer;

G. "Owner" shall mean any Person vested with ownership, legal or equitable, sole or partial, of any Improved Property;

H. "Person" shall mean any individual, company, association, society, thrust, corporation, municipality, municipality authority of any group or entity;

I. "Sanitary Sewage" shall mean normal water-carried household and toilet wastes from any Improved Property;

J. "Sewer" shall mean any pipe or conduit constituting a part of the Sewer System used or usable for sewage collection purposes;

K. "Sewer System" shall mean all facilities, as of any particular time, for collecting, transmitting, treating or disposing of Sanitary Sewage and/or Industrial Wastes, situated in or adjacent to this Township, and owned by the Twp.;

L. "Street" shall mean and shall include any street, road, lane, court, cul-de-sac, alley, public way or public square; and



M. "Township" shall mean the Township of East Hanover, Dauphin County, Pennsylvania, a political subdivision of the Commonwealth, acting by and through its Board of Supervisors, or, in appropriate cases, acting by and through its authorized representatives.

## ARTICLE II

### Use of Public Sewers Required

SECTION 2.01. The Owner of any Improved Property accessible to and whose principal building is within 150 feet from the Sewer System or any property designated by DEP, shall connect such Improved Property with and use such Sewer System in such manner as this Township may require, within 60 days after notice to such Owner from this Township to make such connection, for the purpose of discharging all Sanitary Sewage and pretreated Industrial Wastes from such Improved Property; Subject, however, to such limitations and restrictions as shall be established herein or otherwise shall be established by this Township, from time to time.

SECTION 2.02. All Sanitary Sewage and pretreated Industrial Wastes from any improved property, after connection of such improved property with a sewer shall be required under Section 2.01, shall be conducted into such Sewer; Subject, however, to such limitations and restrictions as shall be established herein or otherwise shall be established by this Township, from time to time.



SECTION 2.03. No Person shall place, shall deposit or shall permit to be placed or to be deposited upon public or private property within this Township any Sanitary Sewage or Industrial Wastes in violation of Section 2.01.

No person shall discharge or shall permit to be discharged to any natural outlet within this Township any Sanitary Sewage or Industrial Wastes in violation of Section 2.01, except where suitable treatment has been provided that is satisfactory to this Township.

SECTION 2.04. No privy vault, cesspool, sinkhole, septic tank or similar receptacle shall be used or shall be maintained at any time upon any Improved Property that has been connected to a Sewer or that shall be required under Section 2.01 to be connected to a sewer. Every such privy vault, cesspool, sinkhole, septic tank or similar receptacle in existence shall be abandoned and, at the discretion of this Township, shall be cleansed and shall be filled, at the expense of the Owner of such Improved Property, under the direction and supervision of this Township; and any such privy vault, cesspool, sinkhole, septic tank or similar receptacle not so abandoned and, if required by this Township, not cleansed and filled, shall constitute a nuisance, and such nuisance may be abated, as provided by law, at the expense of the Owner of such Improved Property.

SECTION 2.05. No privy vault, cesspool, sinkhole, septic tank or similar receptacle at any time shall be connected with a Sewer.



SECTION 2.06. The notice by this Township to make a connection to a Sewer, referred to in Section 2.01, shall include a reference to this Ordinance, including any amendments and/or supplements at the time in effect, or a summary of each Section thereof, and a written or printed document requiring the connection in accordance with the provisions of this Ordinance and specifying that such connection shall be made within 60 days from the date such notice is given or served. Such notice may be given or served at any time after a Sewer is in place that can receive and can convey Sanitary Sewage and pretreated Industrial Wastes for treatment and disposal from the particular Improved Property. Such notice shall be given or served to the Owner in accordance with law.

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### ARTICLE III

#### Building Sewers and Connections

SECTION 3.01. No Person shall uncover, shall connect with, shall make any opening or shall use, shall alter or shall disturb, in any manner, any Sewer or any part of the Sewer System without first obtaining a permit, in writing, from this Township.

SECTION 3.02. Application for a permit required under Section 3.01 shall be made by the Owner of the Improved Property served or to be served or by the duly authorized agent of such Owner.

SECTION 3.03. No person shall make or shall cause to be made a connection of any Improved Property with a Sewer until such person shall have fulfilled each of the following conditions:



A. Such Person shall have notified the Secretary of the Township of the desire and intention to connect such Improved Property to a Sewer;

B. Such person shall have applied for and shall have obtained a permit as required by Section 3.01;

C. Such person shall have given the Secretary of the Township at least 72 hours' notice of the time when such connection will be made so that this Township may supervise and inspect or may cause to be supervised and inspected the work of connection and necessary testing; and

D. If applicable, such person shall have furnished satisfactory evidence to the Secretary of this Township that any tapping (or connection) fee that may be charged and imposed by the Township against the Owner of each Improved Property who connects such Improved Property to a Sewer has been paid.

SECTION 3.04. Except as otherwise provided in this Section 3.04, each Improved Property shall be connected separately and independently with a Sewer through a Building Sewer. Grouping of more than one Improved Property on one Building Sewer shall not be permitted, except under special circumstances and for good sanitary reasons or other good cause shown, but then only after special permission of this Township, in writing, shall have been secured and only subject to such rules, regulations and conditions as may be prescribed by this Township.



SECTION 3.05. All costs and expenses of construction of a Building Sewer and all costs and expenses of connection of a Building Sewer to a Sewer shall be borne by the Owner of the Improved Property to be connected; and such Owner shall indemnify and shall save harmless this Township from all loss or damage that may be occasioned, directly or indirectly, as a result of construction of a Building Sewer or of connection of a Building Sewer to a Sewer.

SECTION 3.06. A Building Sewer shall be connected to a Sewer at the place designated by this Township and where, if applicable, the lateral is located. The invert of a Building Sewer at the point of connection shall be at the same or a higher elevation than the invert of the Sewer. A smooth, neat joint shall be made and the connection of a Building Sewer to the Lateral shall be made secure and watertight. All connections shall be inspected by the Township.

SECTION 3.07. If the Owner of any Improved Property located within this Township and accessible to and whose principal building is within 150 feet from the Sewer System or is required by order of DEP, after 60 days notice from this Township, requiring the connection of such Improved Property with a Sewer, in accordance with Section 2.01, shall fail to connect such Improved Property and use the Sewer System, as required, this Township may enter upon such Improved Property and construct such connection and may collect from such Owner the costs and expenses thereof in the manner permitted by law.



## ARTICLE IV

### Rules and Regulations Governing Building Sewers and Connections to Sewers

SECTION 4.01. When an Improved Property, at the time connection to a Sewer is required, is being served by its own sewage disposal system or sewage disposal device, the existing house sewer line shall be broken on the structure side of such sewage disposal system or sewage disposal device and attachment shall be made, with proper fittings, to continue such house sewer line as a Building Sewer.

SECTION 4.02. No Building Sewer shall be covered until it has been inspected and approved by this Township. If any part of a Building Sewer is covered before so being inspected and approved, it shall be uncovered for inspection at the cost and expense of the Owner of the Improved Property to be connected to a Sewer.

SECTION 4.03. Every Building Sewer of any Improved Property shall be maintained in a sanitary and safe operating condition by the Owner of such Improved Property.

SECTION 4.04. Every excavation for a Building Sewer shall be guarded adequately with barricades and lights to protect all Persons from damage and injury. Any street, sidewalk, and other property disturbed in the course of installation of a Building Sewer shall be restored, at the cost and expense of the Owner of the Improved Property being connected, in a manner satisfactory to this Township.



SECTION 4.05. If any person shall fail or shall refuse, upon receipt of a written notice of this Township, to remedy any unsatisfactory condition with respect to a Building Sewer within 30 days of receipt of such notice, this Township may refuse to permit such Person to discharge Sanitary Sewage and pretreated Industrial Wastes into the Sewer System until such unsatisfactory condition shall have been remedied to the satisfaction of this Township.

SECTION 4.06. This Township reserves the right to adopt, from time to time, additional rules and regulations as it shall deem necessary and proper relating to connections with a Sewer and with the Sewer System, which additional rules and regulations, to the extent appropriate, shall be and shall be construed to be part of this Ordinance.

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#### ARTICLE V

#### Enforcement

SECTION 5.01. Any person who shall violate this Ordinance shall be subject, upon summary conviction for a first offense and upon summary conviction for each subsequent offense, to a fine of not less than Twenty-five Dollars (\$25) nor more than Three Hundred Dollars (\$300), together with costs of prosecution in each case.



Each day that a violation shall continue shall be deemed and shall be taken to be a separate offense and shall be punishable as such.

SECTION 5.02. Fines and costs imposed under provisions of this Ordinance shall be enforceable and recoverable in the manner at the time provided by applicable law.

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#### ARTICLE VI

##### Effective Date

SECTION 6.01. This Ordinance shall become effective in accordance with law.

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#### ARTICLE VII

##### Severability

SECTION 7.01. In the event any provision, section, sentence, clause or part of this Ordinance shall be held to be invalid, such invalidity shall not affect or impair any remaining provision, section, sentence, clause or part of this Ordinance, it being the intent of this Township that such remainder shall be and shall remain in full force and effect.

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ARTICLE VIII

Declaration of Purpose

SECTION 8.01. It is declared that enactment of this Ordinance is necessary for the protection, benefit and preservation of the health, safety and welfare of inhabitants of this Township.

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ARTICLE IX

Repealer

SECTION 9.01 All ordinances or parts of ordinances and all resolutions or parts of resolutions that are inconsistent with this Ordinance shall be and the same expressly are repealed.

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DULY ENACTED AND ORDAINED, this 4 day of November, 1998, by the Board of Supervisors of the Township of East Hanover, Dauphin County, Pennsylvania, in lawful session duly assembled.

EAST HANOVER TOWNSHIP  
BOARD OF SUPERVISORS

By

Kenneth R. Umbrell  
Chairman

John E. Thelk  
supervisor

Paul A. Longene  
Supervisor

ATTEST:

Nora J. Schaffer  
Secretary

(SEAL)



CERTIFICATE

I, the undersigned, Secretary of the Township of East Hanover, Dauphin County, Pennsylvania (the "Township"), certify: that the foregoing is a true and correct copy of an Ordinance of the Board of Supervisors of the Township which was adopted by affirmative vote of a majority of all members of the Board of Supervisors of the Township at a meeting of said Board of Supervisors of the Township duly convened and held according to law on , 1998, at which meeting a quorum was present; that said Ordinance duly has been recorded in the Ordinance Book of the Township; that said Ordinance duly has been published as required by law; and that said Ordinance remains in effect, unaltered and unamended as of the date of this Certificate.

I further certify that the Board of Supervisors of the Township met the advance notice requirements of the Sunshine Act, Act N. 1986-84 of the General Assembly of the Commonwealth of Pennsylvania, approved July 3, 1986, as amended, by advertising the time and place of said meeting and by posting prominently a notice of said meeting at the principal office of the Township or at the public building in which such meeting was held, all in accordance with such Act.

IN WITNESS WHEREOF, I set my hand and affix the official seal of the Township, this , 1998.

(SEAL)

Nora J. Schaffner  
Secretary



EAST HANOVER TOWNSHIP  
DAUPHIN COUNTY, PENNSYLVANIA

ORDINANCE 2001-03

BE IT ORDAINED by the Board of Supervisors of East Hanover Township, Dauphin County, Pennsylvania, as follows:

SECTION ONE: Ordinance 98-6 is hereby amended to read as follows:

**Terms and Definitions**

INDIVIDUAL SEWAGE SYSTEM - Any system of piping, tanks, or other facilities serving a single lot.

ON-LOT SEWAGE DISPOSAL SYSTEM - Any sewage system disposing of sewage either upon the lot which it serves or into a community system.

SECTION TWO: All Ordinances or parts of Ordinances inconsistent herewith are hereby repealed.

ENACTED INTO LAW as Ordinance 2001-03 this 20 day of

March, 2001.



EAST HANOVER TOWNSHIP

BOARD OF SUPERVISORS

George M. Rask

Chairman

Rod B. Rask

Supervisor

Sally Zaino

Supervisor

Patricia Miller

Supervisor

Suzanne Donoran

Supervisor







EAST HANOVER TOWNSHIP  
DAUPHIN COUNTY, PENNSYLVANIA

ORDINANCE 98-6

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF EAST HANOVER  
TOWNSHIP ESTABLISHING MUNICIPAL MANAGEMENT OF  
ON-LOT SUBSURFACE SEWAGE DISPOSAL FACILITIES

AND NOW, this 4<sup>th</sup> day of November, 1998,  
its is hereby enacted and ordained by the Board of Supervisors of  
East Hanover Township in the County of Dauphin and the State of  
Pennsylvania, as follows:

Title; Introduction; Purpose.

1. This section may be cited as the OLDS (On-Lot Disposal System) Management Program for East Hanover Township.
2. As mandated by the municipal codes, the Clean Streams Law (35 P.S. §691.1 to 691.1001), and the Pennsylvania Sewage Facilities Act (Act of January 24, 1966, P.L. 1535 as amended, 35 P.S. §750.1 et seq., known as Act 537), municipalities have the power and the duty to provide for adequate sewage treatment facilities and for the protection of the public health by preventing the discharge of untreated or inadequately treated sewage. The Official Sewage Facilities Plan for East Hanover Township indicates that it is necessary to formulate and implement a sewage management program to effectively prevent and abate water pollution and hazards to the public health caused by improper and inadequate treatment and disposal of sewage.



3. The purpose of this Ordinance is to provide for the inspection, maintenance and rehabilitation of on-lot sewage disposal systems; to further permit the Township to intervene in situations which are public nuisances or hazards to the public health; and to establish penalties and appeal procedures necessary for the proper administration of such a sewage management program.

### Terms and Definitions

1. General Terms. In the interpretation of this Ordinance, the singular shall include the plural, and the masculine shall include the feminine and the neuter.

2. Specific Terms. For the purposes of this Ordinance, the terms used shall be construed to have the following meanings:

ACT - The Pennsylvania Sewage Facilities Act, Act of January 24, 1966, P.L. (1965) 1535, No. 537, as amended, 35 P.S. Section 750.1 et seq.

ALTERNATIVE SYSTEM - A system for the disposal of domestic wastewaters not operating below ground level but located on or near the site of the building or buildings being served (e.g. composting toilets, gray water recycling systems, incinerating toilets, spray irrigation and back water recycling systems, etc.)



**AUTHORIZED AGENT** - A licensed sewage enforcement officer, professional engineer or sanitarian, plumbing inspector, soils scientist, or any other qualified or licensed person who is delegated to function within the specified limits as the agent of the Board of Supervisors of East Hanover Township to carry out the provisions of this Ordinance.

**BOARD** - The Board of Supervisors of the Township of East Hanover, Dauphin County, Pennsylvania.

**CODES ENFORCEMENT OFFICER** (hereinafter called C.E.O.) - An individual employed by the Township to administer and enforce this and other ordinances in the Township.

**COMMUNITY SEWAGE SYSTEM** - Any system, whether publicly or privately owned, for the collection of sewage, from two or more lots or uses, or two or more equivalent dwelling units, and the treatment and/or disposal of the sewage on one or more of the lots or at any other site and which shall comply with all applicable regulations of the DEP.

**DEP** - The Department of Environmental Protection of the Commonwealth of Pennsylvania or any successor agency.

**DEVELOPER** - Shall be defined as any person, partnership or corporation which erects or contracts to erect a building on property owned by it with the intent to sell the building to some other party upon its full or partial completion, or upon the



conveyance of property on which the building is to be built.

1/4/98  
BRU  
EQUVALENT DWELLING UNIT (EDU) - For the purpose of  
determining the number of lots in a subdivision or land  
development, that part of a multiple family dwelling, commercial,  
industrial, or institutional establishment with sewage flows equal  
to ~~four hundred (400)~~ gallons per day.  
*two hundred seventy five (275)*

IMPROVED PROPERTY - Any property within the Township upon  
which there is erected a structure intended for continuous or  
periodic habitation, occupancy or use by human beings or animals  
and from which structure sewage shall or may be discharged.

INDIVIDUAL SEWAGE SYSTEM - Any system of piping, tanks, or  
other facilities serving a single lot and collecting and disposing  
of sewage in whole or in part into the soil or into any waters of  
the Commonwealth of Pennsylvania or by means of conveyance to  
another site for final disposal.

LAND DEVELOPMENT - A land development as defined in the  
Pennsylvania Municipalities Planning Code, Act of July 31, 1968,  
P.L. 805, No. 247, as amended, 53 P.S. Section 10101 et seq.

LOT - a designated parcel, tract, or area of land established  
by a plat or otherwise as permitted by law and to be used,  
developed or built upon as a unit.



**MALFUNCTION** - The condition which occurs when an on-lot Sewage disposal system causes pollution to the ground or surface waters, contamination of private or public drinking water supplies, nuisance problems or hazard to public health. Indications of malfunctioning systems include, but are not limited to, foul odors, lush grass growing over the system, backup of wastewater in the attached buildings, soggy ground over the system, surfacing sewage effluent flowing over the ground and occurring at any time of the year.

**MANAGEMENT PROGRAM** - The management program shall encompass the entire area of East Hanover Township serviced by sewage facilities or any other alternative system which discharges into the soils of the Township and/or into the waters of the Commonwealth. All systems shall be operated under the jurisdiction of the East Hanover Township Board of Supervisors regulating the subsurface disposal and/or alternate systems, and other applicable laws of the Commonwealth of Pennsylvania.

**OFFICIAL PLAN** - A comprehensive plan for the provision of adequate sewage disposal systems adopted by the Township and approved by the DER in accordance with the Act and with applicable DER regulations.

**ON-LOT SEWAGE DISPOSAL SYSTEM** - Any sewage system disposing of sewage in whole or in part into the soil or into any waters of the Commonwealth of Pennsylvania or by means of conveyance to



another site for final disposal either upon the lot which it serves or into a community system.

OWNER - Any person, corporation, partnership, etc. holding deed/title to lands within East Hanover Township.

PERSON - Any individual, association, partnership, public or private corporation whether for profit or non-profit, trust, estate, or other legally recognized entity. Whenever the term "person" is used in connection with any clause providing for the imposition of a fine or penalty or the ordering of action to comply with the terms of this Ordinance, the term "person" shall include the members of an association, partnership or firm and the officers of any public or private corporation, whether for profit or non-profit.

PLANNING MODULE FOR LAND DEVELOPMENT - A revision to, or exception to the revision of, the Township Official Plan submitted in connection with the request for approval of a subdivision or land development in accordance with DER regulations.

PUMPER/Hauler - Any person, company, partnership or corporation which engages in cleaning community or individual sewage systems and transports the septage cleaned from these system.



PUMPERS REPORT/RECEIPT - Form which shall be used by all licensed Pumper/Haulers to report each pumping of on-lot sewage disposal systems in the Township.

REHABILITATION - Work done to modify, alter, repair, enlarge or replace an existing on-lot sewage disposal system.

REPLACEMENT AREA - An area designated as the future location of an individual on-lot sewage system that shall be installed should the initial individual on-lot system installed or to be installed fail or otherwise become inoperable and which shall meet all the regulations of the DER and all applicable Township ordinances for an individual on-lot sewage system, and shall be protected from encroachment by an easement recorded on the Final Plan as filed with the Dauphin County Recorder of Deeds.

SEPTAGE - The residual scum and sludge pumped from septic systems.

SEWAGE - Any substance that contains any of the waste Products or excrement or other discharge from the bodies of human beings or any noxious or deleterious substance being harmful or inimical to the public health, or to animal or aquatic life or to the use of water for domestic water supply or for recreation.

SEWAGE ENFORCEMENT OFFICER hereinafter called S.E.O.) - A person appointed by the Board to administer the provisions of this Ordinance and authorized by the DER in accordance with "Chapter



71, Administration of Sewage Facilities Program" of "Title 25, Rules and Regulations"; to perform percolation tests, site and Soil evaluation, and issue sewage permits for on-lot disposal systems.

SEWAGE FACILITIES - Any method of sewage collection, conveyance, treatment, and disposal which will prevent the discharge of untreated or inadequately treated sewage into the soils of East Hanover Township or into the waters of this Commonwealth or otherwise provide for the safe and sanitary treatment of sewage.

SUBDIVISION - A subdivision as defined by the Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247, as amended, 53 P.S. Section 10101 et seq. and/or as defined by Ordinance \_\_\_\_\_ of East Hanover Township, Dauphin County, Pennsylvania.

All other definitions of words and terms used in this Ordinance shall have the same meaning as set forth in "Chapter 73, Standards for Sewage Disposal Facilities" of "Title 25, Rules and Regulations, Department of Environmental Protection."

Applicability. From the effective date of this Ordinance, its provisions shall apply to all persons owning any property in the Township serviced by an on-lot sewage disposal system and to all persons installing or rehabilitating on-lot sewage disposal systems.



For the purpose of this Ordinance, the Township shall be divided into three (3) separate OLDS Management Districts. The boundary, or limits, of each district shall be as follows:

OLDS Maintenance District #1 - Bounded on the north by Interstate I-81, on the east by the East Hanover Township/Lebanon County dividing line, and on the south by The East Hanover Township/Derry and South Hanover Township dividing line, and on the west by Sand Beach Road and Shell's Church Road.

OLDS Maintenance District #2 - Bounded on the north by the East Hanover Township/Rush Township dividing lines, on the east by the East Hanover Township/Lebanon County dividing line, on the south by Interstate I-81, and on the west by the East Hanover Township/Middle Paxton and West Hanover Township dividing line.

OLDS Maintenance District #3 - Bounded on the north by Interstate I-81, on the east by Sand Beach Road and Shell's Church Road, on the south by the East Hanover Township/South Hanover Township dividing lines, and on the west by the East Hanover Township/West Hanover Township dividing line.

Sewage Permit Requirements.

1. No person shall install, construct or request bid proposals for construction or alter an individual sewage system or community sewage system or construct or request bid proposals for



construction or install or occupy any building or structure for which an individual sewage system or community sewage system is to be installed without first obtaining a permit indicating that the site and the plans and specifications of such system are in compliance with the provisions of the Pennsylvania Sewage Facilities Act (hereinafter called "Act 537" or "Act") and the standards adopted pursuant to that Act.

2. No system or structure designed to provide individual or community sewage disposal shall be covered from view until approval to cover the same has been given by the municipal S.E.O. If seventy-two (72) hours have elapsed, excepting Sundays and Holidays, since the S.E.O. issuing the permit received notification of completion of construction, the applicant may cover said system or structure, unless permission has been specifically refused by the S.E.O.

3. The Township may require applicants for sewage permits to notify the Townships's certified S.E.O. of the schedule for construction of the permitted on-lot sewage disposal system so that inspection(s) in addition to the final inspection required by Act 537 may be scheduled and performed by the Township's certified S.E.O. at the cost of the applicant.

4. No building or occupancy permit shall be issued by the Township or its C.E.O. for a new building which will contain sewage generating facilities until a valid sewage permit has been



obtained from the Township's certified S.E.O.

5. No building or occupancy permit shall be issued and no work shall begin on any alteration or conversion of any existing structure, if said alteration or conversion will result in the increase or potential increase in sewage flows from the structure, until the Township's C.E.O. and the structure's owner receive from the Township's S.E.O. either a permit for alteration or a replacement of the existing sewage disposal system or written notification that such a permit will not be required. In accordance with Chapter 73 regulations, the certified S.E.O. shall determine whether the proposed alteration or conversion of the structure will result in increased sewage flows.

6. Sewage permits may be issued only by a certified S.E.O. employed by the Township for that express purpose. The Department of Environmental Protection shall be notified by the Township as to the identity of it's currently employed certified S.E.O.

7. No sewage permit may be issued unless proof is provided that the owner of record has owned the lot since May 15, 1972, or that Act 537 planning for that lot has been provided by the Township.

8. No final Act 241 approval on a subdivision plan may begin until Act 537 planning is approved by the Township.



**Ground Markers.** Any person who shall install new or rehabilitated systems shall provide a marker or markers at ground level locating the subsurface waste disposal tank and other important components of the system requiring periodic inspection and maintenance. Requirements for marker types and locations will be determined by the Township's S.E.O. In addition, a riser or access hatch shall be constructed so as to enable easy access to the waste disposal tank, and prevent odors from escaping and to prevent children from removing the hatch. Accessibility for visual inspection and maintenance shall be provided in the drainage fields via four (4) inch vertical, non-perforated PVC pipe connected directly to the drain tile at a minimum of four (4) locations in the drainage field. If not installed by the Township or its Authorized Agent, such installation shall be subject to its approval.

**Replacement Areas.**

1. Requirements

A. After the effective date of this Ordinance, a Replacement Area for an individual on-lot sewage system shall be required for all lots to be created which are not serviced, or to be serviced, by a community sewage system, or for which a valid permit for installation of an individual on-lot sewage system has not been issued. Lots existing prior to the effective date of this Ordinance shall be exempt from the requirements of this Section.



B. The Replacement Area provided shall comply with the Act and with all regulations issued by the DEP as incorporated into this Ordinance concerning individual on-lot sewage systems, including isolation distances, and with the terms of this Part and any other applicable Township ordinances.

2. Identification of Replacement Area

A. Each Applicant who shall submit a plan for the subdivision or development of land or who shall apply for a permit for the installation of an individual on-lot sewage system, or who shall request approval of a Planning Module for Land Development or the adoption of a revision, exception to revision, or supplement to the Official Plan shall demonstrate to the satisfaction of the S.E.O. that a suitable area exists on the lot or on each lot to be created for an initial individual on-lot sewage system and for the Replacement Area. The S.E.O. shall perform or observe all tests required for the location of an individual on-lot sewage system to confirm the suitability of the Replacement Area. Allowance of open land for the Replacement Area without testing performed or observed by the S.E.O. shall not constitute compliance with the requirements of this Section.

B. The location of the initial individual on-lot sewage system and the Replacement Area as confirmed by the S.E.O. shall be identified on the plot plans and diagrams submitted as part of the permit application.



C. If the application has been submitted as a part of an application for subdivision or land development approval or as part of a request that the Township approve a Planning Module for Land Development or amend its Official Plan, or a request for an exception to the revision of the Official Plan, the location of each initial individual on-lot sewage system and each Replacement Area shall be noted upon the plans. If the application is for subdivision or land development approval, a note constituting a permanent easement shall be added to the plans stating that no improvements shall be constructed upon the Replacement Area, and the deed to be recorded for each lot created as part of the subdivision or land development shall contain language reflecting this limitation.

D. Any revisions to a permit or plan affecting a Replacement Area which previously has been approved pursuant to the provisions of this Ordinance shall be reviewed for approval by the Board or its authorized representative.

### 3. Construction Restrictions

A. The easement for the Replacement Area noted upon the Plan and recorded with the Dauphin County Recorder of Deeds shall state that no permanent or temporary improvements of any character, other than shallow-rooted plant matter, shall be constructed upon the Replacement Area.



B. This provision shall be enforced by the Township unless the person who desires to construct such improvements shall demonstrate to the satisfaction of the S.E.O. that an alternate Replacement Area which complies with all applicable regulations of the DEP, this ordinance and all other applicable Township ordinances, exists upon the lot. If such an alternate Replacement Area shall be identified, this area may be considered to be the Replacement Area required by this ordinance and shall be Designated as same. The newly designated Replacement Area shall thereafter be considered the Replacement Area for the purposes of this ordinance.

#### 4. Relief from Replacement Area Requirement

A. If any lot held in single and separate ownership as of the effective date of this Ordinance does not contain land suitable for a Replacement Area, the Applicant submitting a Land Development Plan or a Planning Module for Land Development or desiring to install an individual on-lot sewage system may request that the Board grant an exception to the requirement of providing a Replacement Area. The Applicant for such an exception shall present credible evidence to the Board demonstrating (a) that the lot was held in single and separate ownership on the effective date of this ordinance; (b) the size of the lot; (c) inability of the applicant to acquire adjacent land or the unsuitability of adjacent land which might be able to be acquired; and (d) the testing conducted to determine that the lot is not suitable to provide a Replacement Area.



B. At all times the burden to present credible evidence and the burden of persuasion shall be upon the Applicant for an exception from the terms of this Ordinance.

Inspections.

1. Any on-lot sewage disposal system may be inspected by the Township's Authorized Agent at any reasonable time as of the effective date of this Ordinance. As part of the revised official Act 537 Plan for East Hanover Township, a schedule of regular inspection has been established as described in the maintenance section of this Ordinance.
2. The inspection may include a physical tour of the property, the taking of samples from surface water, wells, other ground water sources, the sampling of the contents of the sewage disposal system itself and/or the introduction of a traceable substance into the interior plumbing of the structure served to ascertain the path and ultimate destination of wastewater generated in the structure. A copy of the inspection report shall be furnished to the Owner and current resident which shall include all of the following information which is reasonably available to the individual or agency responsible for pumping the septic tank: date of the inspection; name and address of system owner; description and diagram of the location of the system including location of access hatches, risers, and markers; size of tanks and disposal fields; current occupant's name and number of users; indication of any system malfunction observed; results of any and



all soils and water tests; any remedial action required.

3. The Township's Authorized Agent shall have the right to enter upon land for the purposes of inspections described above. In the event that access to inspect the property is denied, the following steps shall be taken:

A. The matter will be officially referred to the Board for action.

B. The Board may schedule a review at the next scheduled meeting of the Board, or, if the situation threatens the health or safety of the residents of the Township, the Board may commence an immediate procedure to obtain a search from the District Justice.

C. Upon receipt of a search warrant to inspect the property, the Authorized Agent of the Township shall be accompanied by an officer of the County or State police, and the inspection shall be completed in accordance with this Subsection.

D. The provisions of this Subsection for obtaining a search warrant may be waived only when the Board and its Authorized Agent have reason to believe that the sewage facilities or alternative system is malfunctioning or being operated improperly such that the situation poses an immediate and substantial safety, water pollution, or health hazard.



4. The Township's Authorized Agent shall inspect systems known to be, or alleged to be, malfunctioning. Should said inspections reveal that the system is malfunctioning, the Township shall take action to require the correction of the malfunction. If total correction is not technically or financially feasible in the opinion of the Township and a representative of the DEP, action by the Owner to mitigate the malfunction shall be required.

5. There may arise geographic areas within the Township where numerous on-lot sewage disposal systems are malfunctioning. A resolution of these area wide problems may necessitate detailed planning and a Township sponsored revision to that area's Act 537 Official Sewage Facilities Plan. When a DEP authorized Official Sewage Facilities Plan Revision has been undertaken by the Township, mandatory repair or replacement of individual malfunctioning sewage disposal systems within the study area may be delayed, at the discretion of the Township, pending the outcome of the plan revision process. However, the Township may compel immediate corrective action whenever a malfunction, as determined by Township officials and the Pennsylvania DEP, represents a serious public health or environmental threat.

#### Operation.

1. Only normal domestic wastes shall be discharged into any on-lot sewage disposal system. The following shall not be discharged into the system.



- A. Industrial waste.
- B. Automobile oil and other non-domestic oil.
- C. Toxic or hazardous substances or chemicals, including  
But not limited to, pesticides, disinfectants, acids, paints,  
paint thinners, herbicides, gasoline and other solvents.
- D. Clean surface or ground water, including water from  
Roof or cellar drains, springs, basement sump pumps and  
French drains.

Maintenance.

1. Any person owning a building served by an on-lot sewage disposal system shall have the septic tank pumped by a qualified Pumper/Hauler after the effective date of this Ordinance based on the following schedule.

- A. Properties located in East Hanover Township Olds Maintenance District #1: Within one (1) year of effective date of this Ordinance.
- B. Properties located in East Hanover Township OLDS Maintenance District #2: Within two (2) years of effective date of this Ordinance.
- C. Properties located in East Hanover Township OLDS Maintenance District #3: Within three (3) years of effective date of this Ordinance.



Thereafter that person shall have the tank pumped at least once every three (3) years. Receipts from the Pumper/Hauler shall be submitted to the Township as required in Section 6 of this Article.

2. Any person providing a receipt or other written evidence showing that their tank had been pumped within two (2) years of the first year anniversary of the effective date of this Ordinance, then the Township may delay that person's initial required pumping to conform to the general three (3) year frequency requirement.

3. The Township may allow septic tanks to be pumped out at less frequent intervals when the owner can demonstrate to the Township that the system can operate properly without the need for pump out for a period longer than three (3) years, but in no case shall such period extend beyond six (6) years. Such a request may be made at any time and must be in writing with all supporting documents attached. The Township, in making its determination, shall take into account the information submitted by the applicant, the sewerage permit issued by the Township S.E.O. upon installation or rehabilitation of the system and supporting documentation, reports of inspection and maintenance of the system, and other relevant information, and may conduct an on-site inspection. The applicant shall bear the cost of any inspection, surface or subsurface, and soil or wastes sampling conducted for the purposes of evaluating the request. The applicant shall receive a decision within sixty (60) days of accumulation of all



necessary information by the Township.

4. The required pumping frequency may be increased at the discretion of the Authorized Agent if the septic tank is undersized, if solids buildup in the tank is above average, if the hydraulic load on the system increases significantly above average, if a garbage grinder is used in the building, if the system malfunctions or for other good cause shown.

5. Each time a septic tank or other subsurface waste disposal system tank is pumped out, the Township, its Authorized Agent, or a private septage Pumper/Hauler, whichever provides the service, shall provide to the owner of the sub-surface waste disposal system a signed Pumpers Report/Receipt containing at a minimum the following information:

- A. Date of pumping.
- B. Name and address of system owner.
- C. Address of tank's location, if different from owner's.
- D. Description and diagram of the location of the tank, including the location of any markers, risers, and access hatches and size of the tank.
- E. The date existing system was installed.
- F. Last date of pump out.
- G. List of other maintenance performed.
- H. Any indications of system malfunction observed.
- I. Amount of septage or other solid or semi-solid material removed.
- J. List of recommendations.



K. Destination of the septage (name of the treatment facility).

6. Upon completion of each required pumping, the Township, its Authorized Agent, or a private septage waste hauler, shall fill Out and submit a Pumper Report/Receipt, copies of which shall be provided by the Township to all licensed Pumpers/Haulers. The Township's Authorized Agent, or a private septage Pumper/Hauler shall provide one copy of the Pumper's Report/Receipt to the Owner and one copy to the Township. Copies must be received at the Township's business office within thirty (30) days of the date of pumping. The Pumper's Report/Receipt will include verification that the baffles in the septic tank have been inspected and found to be in good working order.

7. Any person owning a building served by an alternative system or on-lot sewage disposal system which contains an aerobic treatment tank shall follow the operation and maintenance recommendations of the equipment manufacturer. A copy of the manufacturer's recommendations and a copy of the service agreement shall be submitted to the Township within six (6) months of the effective date of this Ordinance. Thereafter, service receipts shall be submitted to the Township at the intervals specified by the manufacturer's recommendations. In no case may the service or pumping intervals exceed those for those required for septic tanks.



8. Any person owning a building served by a cesspool or dry well shall have that system pumped according to the schedule prescribed for septic tanks in this Ordinance.

9. The Township may require additional maintenance activity as needed including, but not necessarily limited to, cleaning and unclogging of piping, servicing and the repair of mechanical equipment, leveling of distribution boxes, tanks and lines, removal of obstructing roots or trees, the diversion of surface water away from the disposal area, etc. Repair permits issued by the certified S.E.O. must be secured for these activities.

System Rehabilitation.

1. No person shall operate and maintain an on-lot sewage disposal system in such a manner that it malfunctions. All liquid wastes, including kitchen and laundry wastes and water softener backwash, shall be discharged to a treatment tank. No sewage system shall discharge untreated or partially treated sewage to the surface of the ground or into the waters of the Commonwealth of Pennsylvania unless a permit to discharge has been obtained from the DEP.

2. The Township shall issue a written notice of violation to any person who is the owner of a property in the Township which is found to be served by a malfunctioning on-lot sewage disposal system or which is discharging raw or partially treated sewage without a permit.



3. Within seven (7) days of notification by the Township that a malfunction has been identified, the Owner shall make application to the Township's certified S.E.O. for a permit to repair or replace the malfunctioning system. Within thirty (30) days of initial notification by the Township, construction of the permitted repair or replacement shall commence. Within sixty (60) days of the original notification by the Township, the construction shall be completed unless seasonal or unique conditions mandate a longer period, in which case the Township shall set an extended completion date.

4. The Township's certified S.E.O. shall have the authority to require the repair of any malfunction by the following methods: cleaning, repair or replacement of components of the existing system, adding capacity or otherwise altering or replacing the system's treatment tank, expanding the existing disposal area, replacing the existing disposal area, replacing a gravity distribution system with a pressurized system, replacing the system with a holding tank, or other alternatives as appropriate for the specific site.

5. In lieu of, or in combination with, the remedies described above, the S.E.O. may require the installation of water conservation equipment and the institution of water conservation practices in structures served. Water using devices and appliances in the structure may be required to be retrofitted with water saving appurtenances or they may be required to be replaced by water conserving devices and appliances. Wastewater generation



in the structure may also be reduced by requiring changes in water usage patterns in the structure served.

6. In the event that the rehabilitation measures as described in this section are not feasible or do not prove effective, the Township may require the Owner to apply for a permit to construct a holding tank in accordance with Township ordinance. Upon receipt of said permit the Owner shall complete construction of the system within thirty (30) days.

7. Should none of the remedies described above prove totally effective in eliminating the malfunction of an existing on-lot sewage disposal system, the Owner is not absolved of responsibility for that malfunction. The Township may require whatever action is necessary to lessen or mitigate the malfunction to the extent that it feels necessary.

**Liens.** The Township, upon written notice from the S.E.O. that an imminent health hazard exists due to failure of a property owner to maintain, repair or replace an on-lot sewage disposal system as provided under the terms of this Ordinance, shall have the authority to perform or contract to have performed, the work required by the S.E.O. The Owner shall be charged for the work performed and, if necessary, a lien shall be entered therefore in accordance with law.



Disposal of Septage.

1. All septage Pumper/Haulers operating within the Township shall be licensed with the Township and shall comply with all reporting requirements established by the Township.
2. All septage originating within the municipal sewage management district shall be disposed of at sites or facilities approved by the DEP. Approved sites or facilities shall include the following: septage treatment facilities, wastewater treatment plants, composting sites, and approved farm lands.
3. Septage Pumper/Haulers operating within the Township shall operate in a manner consistent with the provisions of the Pennsylvania Solid Waste Management Act (Act 97 of 1980, 35 P.S. §§6018.101-6018.1003). Any septage Pumper/Hauler who violates any of the provisions of this Ordinance or regulations of East Hanover Township, the conditions of its State permit, or of any State or local law governing its operation, shall, upon conviction thereof, be sentenced to pay a fine not exceeding one thousand dollars (\$1,000.00) and costs, and in default of payment thereof, shall be subject to imprisonment for a term not to exceed thirty (30) days. If any pumper/hauler shall have been convicted on two (2) occasions of any violation of this Ordinance, or for violating the conditions of its State permit, or of any State or local law governing its operation, the Board shall have the power to suspend said pumper/hauler from operating within the Township for a period of not less than six (6) months or more than two (2) years for



each violation, as determined by the Township. Each day the violation continues shall constitute a separate offense.

Administration.

1. The Township shall fully utilize those powers it possesses through enabling statutes and ordinances to effect the purposes of this Ordinance.
2. The Township shall employ qualified individuals to carry out the provisions of this Ordinance. Those employees shall include a certified S.E.O., a C.E.O., a secretary, administrator or other persons as required. The Township may also contract with private qualified persons or firms as necessary to carry out these provisions.
3. All permits, records, reports, files and other written material relating to the installation, operation and maintenance and malfunction of on-lot sewage disposal systems shall become the property of the Township. Existing and future records shall be available for public inspection during required business hours at the official municipal office. All records pertaining to sewage permits, building permits, occupancy permits and all other aspects of the Township's OLDS Management Program shall be made available, upon request, for inspection by representatives of the DER.
4. The Board shall establish all administrative procedures necessary to properly carry out the provisions of this Ordinance.



5. The Board may establish a fee schedule, and subsequently collect fees, to cover the cost to the Township of administering this program.

Appeals.

1. Appeals from decisions of the Township or its authorized agents under this Ordinance shall be made to the Board in writing within forty-five (45) days from the date of the decision in question.
2. The appellant shall be entitled to a hearing before the Board at its next regularly scheduled meeting, if the appeal is received at least fourteen (14) days prior to that meeting. If the appeal is received within fourteen (14) days of the next regularly scheduled meeting, the appeal shall be heard at the subsequent meeting. The Township shall thereafter affirm, modify, or reverse the aforesaid decision. The hearing may be postponed for a good cause shown by the appellant or the Township. Additional evidence may be introduced at the hearing provided that it is submitted with the written notice of appeal.
3. A decision shall be rendered in writing within forty-five (45) days of the date of the hearing. If a decision is not rendered within forty-five (45) days, the release sought by the appellant shall be deemed granted.



Penalties. Any person failing to comply with any provisions of this Ordinance shall be subject to a fine of not less than one hundred dollars (\$100) and costs, and not more than three hundred dollars (\$300) and costs, or in default thereof shall be confined in the county jail for a period of not more than thirty (30) days. Each day of noncompliance shall constitute a separate offense.

Repealer. If any section or clause of this Ordinance shall be adjudged invalid, such adjudication shall not affect the validity of the remaining provisions which shall be deemed severable therefrom.

All Ordinances or parts of Ordinances and all Resolutions or parts of Resolutions that are inconsistent with this Ordinance shall be and the same expressly repealed.

EAST HANOVER TOWNSHIP

BOARD OF SUPERVISORS

BY:

Kenneth R. Umrlsch  
Chairman

John E. Thell  
Supervisor

Paul A. Longenecker  
Supervisor

ATTEST:

Nora J. Schaffer  
Secretary

(SEAL)







**TOWNSHIP OF EAST HANOVER  
DAUPHIN COUNTY, PENNSYLVANIA**

**ORDINANCE NO. 2009-02**

**AN ORDINANCE PURSUANT TO SECTION 2502 OF THE  
SECOND CLASS TOWNSHIP CODE, AS AMENDED,  
PROVIDING FOR THE ESTABLISHMENT OF  
PROCEDURES AND CHARGES FOR THE RESERVATION  
OF SANITARY SEWER SYSTEM AND TREATMENT  
PLANT CAPACITY WITHIN EAST HANOVER  
TOWNSHIP, EFFECTIVE FIVE DAYS FROM  
ENACTMENT.**

AND NOW, this 20<sup>th</sup> day of May, 2009, the Board of Supervisors of East Hanover Township (Township) hereby enacts and ordains as follows:

**Section 1. Title.** This Ordinance shall be cited to as the “East Hanover Township Sewer Capacity Reservation Ordinance.”

**Section 2. Statement of Findings.** The Township has determined that it has limited available capacity in its wastewater treatment plant, and expects demand for sewer connection permits that potentially will be in excess of its available treatment capacity. The Township has further determined that allocation and reservation of sanitary sewer system capacity for future use creates an unreasonable and inequitable economic burden upon the Township and the existing users connected to the sanitary sewer system for the following reasons:

- a. Until such time as a developer or landowner who has been granted capacity in the Township’s sanitary sewer system chooses to make use of such capacity, the Township and the existing users of the sewer system are required to amortize the costs of the reserved facilities; and
- b. Such reserved capacity remains unavailable to other persons who may have an immediate need for capacity.

**Section 3. Purpose.** It is in the best interest of the Township, the existing users of the sanitary sewer system, and potential users without reserve capacity, that developers and landowners desiring or required to reserve sanitary sewer system capacity pay a charge designed and calculated to amortize the cost of the current debt service and fixed operating costs in proportion to the amount of sewer system capacity that is reserved. The purpose of this Ordinance is to establish procedures for the imposition and collection of such charges, which shall be known as Sewer Reservation Fees, pursuant to Pennsylvania law.



**Section 4.**     **Applicability.** This Ordinance shall apply to all areas of the Township.

**Section 5.**     **Reservation of Sewer Capacity.** Upon approval of its Planning Module by the Department of Environmental Protection (DEP), a developer or landowner shall be entitled to reservation of a specific amount of capacity in the East Hanover Township sanitary sewer collection system and treatment facilities (hereinafter called Allocated Capacity). If a land development plan is required for the proposed project to be completed, Allocated Capacity shall be reserved only after the developer or landowner also submits the land development plan to the Township for review.

For purposes of billing and administration, the Allocated Capacity is converted to Equivalent Dwelling Units (EDUs).

**Section 6.**     **Sewer Reservation Fee.** Upon reservation of Allocated Capacity, the developer or landowner shall be assessed a quarterly Sewer Reservation Fee. This fee shall be payable to the Township and shall begin on the date the developer or landowner receives DEP approval of its Planning Module. The initial quarterly Sewer Reservation Fee shall be prorated based on the days remaining in the quarter during which DEP approval occurs. The Sewer Reservation Fee shall be applied to all non-connected EDUs in accordance with the "Powers and Authorities Act of December 30, 2003, No. 57" (Act 57).

The Sewer Reservation Fee shall be applicable and shall continue in effect until the first of the following events occurs:

- a.     The total Allocated Capacity has been utilized by the developer or landowner, or its successors in title; or
- b.     Any unused Allocated Capacity has been cancelled by the developer or landowner, or by the Township as hereinafter provided.

**Section 7.**     **Calculation of Sewer Reservation Fee.** The Sewer Reservation Fee is comprised of those debt service and fixed operating costs associated with the sewer collection and treatment capacity reserved for each developer or landowner. These costs will not exceed sixty percent (60%) of the average quarterly standard sewer customer bill. The Township will provide a list or summary of the items included in and/or a breakdown of the amount of the Sewer Reservation Fee to the developer or landowner prior to its execution of the Allocated Capacity Agreement.

**Section 8.**     **Property Subject to Allocated Capacity; Additional Connections.** The developer or landowner's Allocated Capacity shall be reserved for and used only in connection with the property identified in the Allocated Capacity Agreement or DEP Planning Module, as the Township shall elect. Allocated Capacity is not transferable to other properties, even if such other properties are owned, in whole or in part, by the same developer or landowner.

The reservation of Allocated Capacity for one or more connections within a planned subdivision or land development area does not entitle the developer or landowner to connections



for the entire project. Allocated Capacity shall be reserved only for individual eligible connections, and the Township expressly disclaims any obligation to provide sanitary sewer capacity or connections for an entire project upon the reservation of Allocated Capacity for a part of a project proposed by a developer of landowner.

**Section 9. Tapping Fee.** At such time as the developer or landowner applies for a Township Building Permit, a “Tapping Fee” shall be payable to the Township, which Tapping Fee shall include all applicable fees and charges defined and permitted under Act 57.

**Section 10. Issuance of Permits.** The Township shall not issue a Building Permit, a Sewer Connection Permit, or an Occupancy Permit to any developer or landowner until full payment is made of all applicable fees, as they may be set from time to time by the Township’s Board of Supervisors in accordance with applicable law.

**Section 11. Connection to Sanitary Sewer System; Conversion to Customer Bill.** Once the developer or landowner connects a lot for which Allocated Capacity has been reserved to the Township’s sanitary sewer system, and a Sewer Connection or Occupancy Permit has been issued, the Sewer Reservation Fee for that lot will automatically convert to a standard sewer customer bill. Such bill shall be subject to the Township rate for sewage service in effect at the time of connection, as such rate may be amended from time to time.

**Section 12. Adjustment of Sewer Reservation Fee.** The developer or landowner may apply to the Township to have the Sewer Reservation Fee adjusted to reflect the Allocated Capacity the developer or landowner has connected to the Township’s sanitary sewer system during the preceding quarter. Such adjustment shall be made by removing from the calculation of the Sewer Reservation Fee all lots that have been connected to the sewer system following all applicable Township procedures, rules and regulations.

**Section 13. Adjustment of Allocated Capacity.** In the event the Township, in its sole discretion, shall determine that the Allocated Capacity reserved for a developer or landowner is insufficient, the developer or landowner shall request (or shall be deemed to have requested) additional Allocated Capacity. In such event, the Township may adjust the developer or landowner’s Allocated Capacity and Sewer Reservation Fee. The developer or landowner shall begin to pay the adjusted Sewer Reservation Fee commencing with the next calendar quarter after such adjustment is made.

**Section 14. Cancellation of Allocated Capacity; No Refund.** If DEP notifies the developer or landowner that its Planning Module has been denied or cancelled, the developer or landowner shall provide written notice to the Township of such denial or cancellation within twenty (20) days of DEP’s notification, and the Allocated Capacity assigned to the developer or landowner that remains at the time of such notice shall be cancelled. Such cancellation shall be effective as of the start of the next quarter, provided that notice of denial or cancellation of the DEP Planning Module shall have been given to the Township at least fifteen (15) days prior thereto.



The Township may cancel all or any portion of the Allocated Capacity assigned to a developer or landowner if DEP shall cancel, revoke or stay the effectiveness of any permit issued to the Township, the developer and/or the landowner for any reason, or if DEP shall impose a ban on connections to or extensions of the Township's sanitary sewer system, or if the Township is unable to allow the developer or landowner to connect to the Township's sanitary sewer system for any reason whatsoever.

The developer or landowner may, at any time and for any reason, voluntarily cancel and relinquish all rights to any unused portion of its Allocated Capacity by providing written notice of such cancellation to the Township. Simultaneously with such notice, written notice shall be provided to DEP by the developer or landowner of its intent to cancel any unused portion of sewer capacity allocation identified in its DEP Planning Module, with a copy of such notice provided to the Township. For purposes of the Township's records, cancellation of the developer or landowner's Allocated Capacity shall be effective upon the Township's receipt of the written notice described above.

Cancellation of all or any portion of the assigned Allocated Capacity, for any reason, shall not entitle the developer or landowner to any refund of fees paid to the Township.

**Section 15.** **Applicability of Other Fees.** The Sewer Reservation Fee is not a substitute for, and specifically does not eliminate or modify in any way, the developer or landowner's obligation to pay any other fee imposed by the Township and/or Pennsylvania law in connection with the Township's provision of sanitary sewage collection and treatment services; including, but not limited to, a Building Permit Fee, Sewer Connection Permit Fee, Customer Facilities Fee, or Tapping Fee, as such fees may be defined in other Township ordinances, or in the Municipality Authorities Act, 53 Pa.C.S. §§5601, *et seq.*, as amended by Act 57.

**Section 16.** **Repealer.** Any other Township ordinances or resolutions, or any part thereof, that is inconsistent or conflicting with any part of this Ordinance is hereby repealed to the extent of such inconsistency or conflict.

**Section 17.** **Severability.** If any provision, paragraph, sentence, clause, word or section of this Ordinance is invalidated by any court of competent jurisdiction for any reason whatsoever, the remaining provisions, paragraphs, sentences, clauses, words or sections shall not be effected or impaired by such invalidation and shall continue in full force and effect.



**Section 18. Effective Date.** This Ordinance shall become effective five (5) days from the date of its enactment by the Board of Supervisors of East Hanover Township.

ENACTED and ORDAINED this 20<sup>th</sup> day of May, 2009.

ATTEST:

BOARD OF SUPERVISORS OF  
EAST HANOVER TOWNSHIP

Secretary

Robert A. Espuskel

Marie Beaudet

David Marshall

W. J. Kelly

Thomas J. Smith







## **APPENDIX 2.0 – EXISTING SEWAGE TREATMENT**

- 2.1 Wastewater Treatment Facilities**
- 2.2 Sanitary Needs Survey – Letter To Residents (2009)**
- 2.3 Sanitary Needs Survey – Sample Of Survey Sheet (2006)**
- 2.4 Sampling Requirements Summary Table**
- 2.5 Well Water Sampling and Field-Verification Table**







EXISTING WWTF's IN EAST HANOVER TOWNSHIP

PUBLIC & COMMERCIAL WWTF's

NAME	OPERATIONAL?	PERMIT NO.	MOST RECENT PERMIT RENEWAL	NPDES CAPACITY (AAF)	TREATMENT PROCESS	WATER-SHED	RECEIVING STREAM	EFFLUENT REQUIREMENTS FOR:	PROBLEMS	QTY. SLUDGE DISPOSED (DRY TONS PER YEAR)	SLUDGE DISPOSAL METHOD
DAIRY LANE WWTF	Y	PA0247464	12/11/2009	0.25 MGD	SBR'S with BNR	7-D	BOW CREEK	pH, D.O., TSS, CBOD5, NH3-N, P, FC, TN, TKN, NO3-NO2	NONE	20	HAULED TO LARGER MUNICIPAL WWTF; AG UTILIZATION
MOUNTAINVIEW THOROUGHbred RACING ASSOC. WWTF	Y	PA0081264	SUBMITTED TO DEP & UNDER REVIEW	0.23 MGD	SBR'S FOLLOWED BY TERTIARY FILTRATION	7-D	UNT to UNT to SWATARA CREEK	pH, D.O., TSS, CBOD5, NH3-N, P, FC, TN, TRC	NONE	40	WASTE HAULED TO MUNICIPAL WWTF'S
SHADYBACK ACRES MHP WWTF	Y	PA0087696	SUBMITTED TO DEP & UNDER REVIEW	2750 GPD	CHROMAGLASS BATCH TRMT UNITS FOLLOWED BY INTERMITTENT SAND FILTERS	7-D	UNT to MANADA CREEK	pH, D.O., TSS, CBOD5, NH3-N, FC, TRC	O&M PROBLEMS BEING WORKED THRU AT PRESENT TIME	<1	HAULED TO LARGER MUNICIPAL WWTF
MANADA CREEK MHP WWTF	Y	PA0085502	9/21/2009	12,000 GPD	EXTENDED AERATION-FILTRATION	7-D	UNT to MANADA CREEK	pH, D.O., TSS, CBOD5, NH3-N, FC, TRC	NONE	1	HAULED TO LARGER MUNICIPAL WWTF

ABBREVIATION KEY

AAF	annual average flow	P	phosphorus
BNR	biological nutrient removal	SBR	sequencing batch reactors
CBOD5	carbonaceous biochemical oxygen demand	SFSTF	small flow sewage treatment facility
D.O.	dissolved oxygen	TKN	total kjeldahl nitrogen
FC	fecal coliform	TN	total nitrogen
GPD	gallons per day	TRC	total residual chlorine
MGD	million gallons per day	TSS	total suspended solids
N/A	not applicable	UNT	unnamed tributary
NH3-N	ammonia nitrogen	WWTF	wastewater treatment facility
NO3 - NO2	nitrate - nitrite		



EXISTING WWTF's IN EAST HANOVER TOWNSHIP

PRIVATE SINGLE RESIDENCE WWTF's

NAME	OPERATIONAL?	PERMIT NO.	MOST RECENT PERMIT RENEWAL	NPDES CAPACITY (AAF)	TREATMENT PROCESS	WATER-SHED	RECEIVING STREAM	EFFLUENT REQUIREMENTS FOR:	PROBLEMS	QTY. SLUDGE DISPOSED (DRY TONS PER YEAR)	SLUDGE DISPOSAL METHOD
SFSTF #1	Y	PAG043671	1/13/2006	*	*	7-D	*	pH, TSS, BOD5, FC, TRC	*	*	*
SFSTF #2	*	PA0247901	11/10/2005	*	*	7-D	*	pH, TSS, BOD5, FC, TRC	*	*	*
SFSTF #3	Y	PAG043679	9/11/2001	500 GPD	DUAL SEPTIC TANKS-BURIED SAND FILTER-TABLET CHLORINATOR	7-D	UNT to MANADA CREEK	pH, TSS, BOD5, FC, TRC	NONE NOTED	N/A	PRIVATE HAULER
SFSTF #4	Y	PAG043535	1/11/2001	400 GPD	DUAL SEPTIC TANKS-BURIED SAND FILTER-TABLET CHLORINATOR	7-D	UNT to MANADA CREEK	pH, TSS, BOD5, FC, TRC	NONE NOTED	N/A	PRIVATE HAULER
SFSTF #5	Y	PAG043583	6/6/2008	400 GPD	AEROBIC TANK-FREE ACCESS SAND FILTER	7-D	UNT to MANADA CREEK	pH, TSS, BOD5, FC, TRC	NONE	N/A	PRIVATE HAULER
SFSTF #6	Y	PAG043560	5/4/2005	400 GPD	DUAL SEPTIC TANKS-BURIED SAND FILTER-TABLET CHLORINATOR	7-D	UNT to MANADA CREEK	pH, TSS, BOD5, FC, TRC	NONE	N/A	PRIVATE HAULER
SFSTF #7	Y	PA0246824	1/16/2009	1200 GPD	SEPTIC TANK-AEROBIC TANK-FREE-ACCESS SAND FILTERS-TABLET CHLORINATOR	7-D	UNT to SWATARA CREEK	pH, TSS, BOD5, FC, TRC	NONE NOTED	N/A	PRIVATE HAULER
SFSTF #8	Y	PAG043652	11/14/2001	400 GPD	AEROBIC TANK-SAND FILTER	7-D	UNT to SWATARA CREEK	pH, TSS, BOD5, FC, TRC	PERMIT EXPIRED	N/A	PRIVATE HAULER
SFSTF #9	*	PAG043519	5/31/2005	400 GPD	*	7-D	MANADA CREEK	pH, TSS, BOD5, FC, TRC	*	N/A	*
SFSTF #10	Y	PAG043568	10/5/2006	400 GPD	SEPTIC TANK-BURIED SAND FILTER-TABLET CHLORINATOR	7-D	MANADA CREEK	pH, TSS, BOD5, FC, TRC	NONE	N/A	PRIVATE HAULER

\* RECORDS FOR THIS INFORMATION COULD NOT BE LOCATED

ABBREVIATION KEY

AAF	annual average flow	P	phosphorus	TN	total nitrogen
BNR	biological nutrient removal	SBR	sequencing batch reactors	TRC	total residual chlorine
CBOD5	carbonaceous biochemical oxygen demand	SFSTF	small flow sewage treatment facility	TSS	total suspended solids
D.O.	dissolved oxygen	N/A	not applicable	UNT	unnamed tributary
FC	fecal coliform	NH3-N	ammonia nitrogen	WWTF	wastewater treatment facility
GPD	gallons per day	NO3 - NO2	nitrate - nitrite		
MGD	million gallons per day	TKN	total kjeldahl nitrogen		



## EAST HANOVER TOWNSHIP BOARD OF SUPERVISORS

DAUPHIN COUNTY, PENNSYLVANIA  
8848 JONESTOWN ROAD, GRANTVILLE, PA 17028-9545  
(717) 469-0833 FAX (717) 469-1442

March 23, 2009

East Hanover Township Property Owner

RE: Well Water and Sewage Needs Survey

Dear East Hanover Township Property Owner:

As you may remember from efforts in 2006 and 2007, East Hanover Township is in the process of updating its Act 537 Sewage Facilities Plan. The Act 537 Sewage Facilities Plan is an adopted municipal document outlining the current situation and planning for future management of sewage. The Pennsylvania Department of Environmental Protection (PA DEP) requires that all municipalities update their Act 537 Plans on a regular basis.

An important part of the planning process is gathering information about the condition of existing wells and on-lot sewage disposal systems so that the sewage disposal needs throughout the Township can be accurately determined. This information was gathered from many homes in the form of a Sewage Needs Survey administered in 2006. The second part of this process requires the Township to field-verify the information for a major portion of these surveys and acquire well water samples to locate areas of concern. As we have reached this important phase of the project, we are asking for your participation to complete this task.

Your participation would involve accepting a visit from a LTL Consultants representative (wearing a photo identity badge) at your home, to ask you a few questions, take a brief look at your septic system, and obtain a well water sample. Well water samples will be taken to a certified laboratory to evaluate the presence of harmful nitrates and coliform bacteria that could contaminate the community's drinking water. Should it be determined that your system has a malfunction or there is contamination found in your sample you will be notified, but no enforcement action will occur as a result of this survey. Your participation in this project is voluntary, but essential for creating an effective assessment for the community.

As a benefit of fully participating in the survey, you will receive a confidential drinking water analysis free of charge. At the completion of the lab testing (earlier if you have coliform contamination), you will receive an official report of the results. Sampling hours are Monday through Thursday from 8:00 am to 2:00 pm. Special arrangements (evenings and Sundays) may be made by phone. As samples may be limited, **those who desire a water sample are advised to make appointments as soon as possible.** For questions and appointments please contact Mary Anne McCarthy at LTL Consultants' toll free number, 1-888-987-8886.

Thank you for your participation in this project.

Sincerely,  
East Hanover Township Board of Supervisors



SEWAGE NEEDS  
MAIL SURVEY  
05/05/06

RECEIVED

MAY 16 2006

East Hanover Township is conducting a survey to determine what sewage problems may exist in this area. The survey results will be used to determine if sewage problems exist, and the best and most economical way of correcting the problems. Please complete the form to the best of your ability and return it by May 22, 2006, to the municipal office at: 8848 Jonestown Road or send it to the Township Engineer's office in the postage-paid envelope provided.

If you have any questions please contact Tammie S. Myers, P.E., at (717) 901-7055.

Please Note: This survey may be followed by a partial or whole door to door survey. Thank you for your time and assistance.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: [REDACTED]

PHONE: [REDACTED]

ADDRESS: [REDACTED]

1. How many people live in your house? 1 SEASONAL / ALL YEAR?
2. How large is your lot? 1+ Ac.
3. Do you have more than one sewage system on your lot? YES or NO  
If yes, explain: \_\_\_\_\_
4. What kind of water system do you have? WELL? SPRING? PUBLIC? OTHER? \_\_\_\_\_  
Do you treat your water? YES or NO If yes, how? \_\_\_\_\_  
If you have a well: Is it DUG or DRILLED? How deep? 180 ft. Cased? YES or NO  
5. How far is the well or spring from the sewage drain field 80 ft. Is the well UP/DOWN SLOPE \_\_\_\_\_  
Have you ever had your water tested? YES or NO When? 1990  
What were the results? ACCEPTABLE
6. What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)  

<u>SEPTIC TANK</u>	<u>INGROUND BED</u>	COMMUNITY SEWER
CESSPOOL	INGROUND TRENCH	STORM SEWER
OLD WELL	ELEVATED SAND MOUND	PIPE TO DITCH
HOLDING TANK	SEEPAGE PIT	PIPE TO STREAM
PRIVY	BORE HOLE	PIPE TO SURFACE
PUBLIC SEWER	OTHER _____	
7. Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)  

<u>SEPTIC TANK</u>	INGROUND BED	COMMUNITY SEWER
CESSPOOL	INGROUND TRENCH	STORM SEWER
OLD WELL	ELEVATED SAND MOUND	PIPE TO DITCH
HOLDING TANK	SEEPAGE PIT	PIPE TO STREAM
PRIVY	BORE HOLE	PIPE TO SURFACE
PUBLIC SEWER	OTHER _____	
8. How old is your septic system? UNKNOWN Was it permitted? Y / N When? UNKNOWN
9. Have you ever noticed any of the following near your septic system? NO  

GREEN LUSH GRASS	WETNESS OR SPONGY AREAS
ODORS	WATER PONDING OR SURFACING
SLUGGISH DRAINS	WASTEWATER BACKING INTO THE HOME
SYSTEM OVERFLOW	OTHER _____
10. Was your system ever pumped out? YES or NO How often? 5 YEARS Last time? MAR 06  
If it was pumped, was it inspected for cracks or broken baffles? YES
11. Was your system ever repaired? YES or NO When? \_\_\_\_\_ By permit? YES / NO  
What part was repaired or replaced?  
TANK REPAIRED/REPLACED      LINE REPAIRED/REPLACED      DRAIN FIELD REPAIRED/REPLACED
12. Are there any other sewage problems you are aware of? NO
13. Would you allow a representative of Benatec to obtain a water sample from your well? YES / NO
14. COMMENTS: #13 ONLY IF I GET A COPY OF THE RESULTS.



# **EAST HANOVER TOWNSHIP ACT 537: SAMPLING REQUIREMENTS SUMMARY**

**STUDY AREA PROPERTIES**

**1594**

**MAIL-IN SURVEY:**

<i><b>TOTAL REQUIRED</b></i> (15% OF STUDY AREA PROPERTIES)	<b>239</b>
<i><b>SURVEYS MAILED</b></i>	<b>1594</b>
<i><b>SURVEYS RETURNED</b></i>	<b>546</b>
<i><b>Englewood And Partridge Hills Returns*</b></i>	<b>51</b>
<i><b>Unidentifiable Survey Returns</b></i>	<b>29</b>
<i><b>TOTAL USABLE SURVEYS**</b></i>	<b>466</b>

**FIELD VERIFICATION OF SURVEYS:**

<i><b>TOTAL REQUIRED</b></i> (MUST BE 15% OF USABLE STUDY AREA PROPERTIES***)	<b>239</b>
<i><b>VERIFIED 2009</b></i>	<b>239</b>

**WELL WATER SAMPLING:**

<i><b>TOTAL REQUIRED</b></i> (15% OF STUDY AREA PROPERTIES)	<b>239</b>
<i><b>SAMPLED 2009</b></i>	<b>240</b>

**NOTES:**

\* PER DIRECTION FROM PADEP - ALL RESULTS FROM THE ENGLEWOOD AND PARTRIDGE HILLS STUDY WERE OMITTED FROM THE NEEDS ANALYSIS FOR THIS VERSION OF THE PLAN.

\*\* SANITARY SURVEYS RETURNED AND ENTERED INTO THE SURVEY DATABASE EXCEED THE REQUIRED PERCENTAGE BY 227 SURVEYS. THE NEGATIVE FIGURE REPRESENTS THE DIFFERENCE BETWEEN RETURNED AND REQUIRED SURVEYS

\*\*\* PER DIRECTION FROM PADEP (MARCH 18, 2009) - MUST USE 15 PERCENT OF THE STUDY AREA PROPERTIES (NOT RETURNED SURVEYS) TO ASSURE RANDOM SAMPLING.



**EAST HANOVER TOWNSHIP, ACT 537 PLAN UPDATE**  
**WELL WATER SAMPLING AND FIELD VERIFICATION SUMMARY**

**WELL WATER SAMPLING**

**FIELD VERIFICATION**

DATE SAMPLE WAS TAKEN	TOTAL SAMPLES TAKEN	LAB RESULTS RECEIVED	SAMPLE REQUESTED IN 2006 NEEDS SURVEY	SAMPLE REQUESTED IN 2009	FIELD VERIFICATION ONLY	TOTAL FIELD VERIFIED
2-Apr	8	7-Apr	4	4	0	8
6-Apr	11	21-Apr	7	4	0	11
7-Apr	14	21-Apr	8	5	0	13
8-Apr	7	21-Apr	3	4	0	7
9-Apr	7	21-Apr	5	2	0	7
13-Apr	10	21-Apr	6	4	0	10
14-Apr	15	21-Apr	11	3	1	15
15-Apr	6	21-Apr	3	2	1	6
16-Apr	12	21-Apr	10	2	0	12
20-Apr	10	29-Apr	10	0	0	10
21-Apr	14	28-Apr	14	0	0	14
22-Apr	10	29-Apr	9	1	0	10
27-Apr	10	5-May	8	2	0	10
28-Apr	9	6-May	6	2	1	9
30-Apr	8	6-May	8	0	0	8
5-May	5	11-May	5	0	0	5
13-May	13	22-May	13	0	0	13
20-May	13	4-Jun	12	1	0	13
27-May	13	10-Jun	9	2	2	13
28-May	6	10-Jun	6	0	0	6
7-Jun	4	16-Jun	3	1	0	4
8-Jun	8	16-Jun	7	1	0	8
9-Jun	4	18-Jun	4	0	0	4
11-Jun	11	18-Jun	9	1	1	11
16-Jun	12	22-Jun	10	2	0	12
	240		190	43	6	239



**APPENDIX 3.0 – MAPS**

- 3.1 East Hanover Township Study Area**
- 3.2 USDA Soil Map Units**
- 3.2A Prime Farmland**
- 3.3 Geologic Features**
- 3.4 Floodplains /Steep Slopes**
- 3.5 Public Water Supplies**
- 3.6 Wetlands And Hydric Soils**
- 3.7 Existing Wastewater Treatment Facilities**
- 3.8 Study Sectors**
- 3.9 On-Lot Disposal System (Olds) Malfunctions**
- 3.10 Well Water Sampling – Nitrate Contamination**
- 3.11 Well Water Sampling – Coliform Contamination**
- 3.12 Suitability For On Lot Systems**
- 3.13 Problem Areas / Weighted Sum Analysis**
- 3.14 Zoning Districts**
- 3.15 Subdivisions And Land Developments**
- 3.16 Future Growth Potential**
- 3.17 Buildout Analysis 70% Efficiency**
- 3.18 Future Sewer Service Areas**
- 3.19 Prime Agricultural Soils**
- 3.20 GIS Data Layer Descriptions**







## GIS DATA LAYER DESCRIPTIONS

LAYER NAME	DATA ORIGIN	DATE OF DOWNLOAD OR COMPLETION	PROCESS DESCRIPTION	LAYER NOTES
BUILDOUT 70% EFFICIENCY	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/20/10	CREATED BASED ON SELECTED PARCEL DATA FROM DAUPIN COUNTY GIS DEPARTMENT. DATA WAS EDITED BASED ON REDUCTION OF BUILDABLE LAND BASED ON NATURAL AND MAN MADE RESTRICTIONS WITH AN ADDITIONAL 30 PERCENT REMOVED FOR EASEMENT OR OTHER REQUIREMENTS. THE DATASET WAS FURTHER ANALYZED BASED ON NUMBER OF PERMISSABLE BUILDABLE LOTS BASED ON EHT ZONING DISTRICT REGULATIONS.	USED TO CALCULATE A POTENTIAL BUILDOUT FOR ENTIRE TOWNSHIP.
CAPACITY / PLAN INCLUSION REQUESTS	DAUPHIN COUNTY GIS DEPARTMENT, MODIFIED BY LTL CONSULTANTS	04/12/10	PROPERTIES WERE SELECTED FROM THE DAUPHIN COUNTY PARCEL SHAPEFILE BASED ON WRITTEN REQUESTS	THIS LAYER SHOWS FROM PROPERTY OWNERS TO THE TOWNSHIP FOR SEWAGE TREATMENT CAPACITY, CONNECTION TO THE SYSTEM, OR CONSIDERATION FOR INCLUSION IN THE ACT 537 PLAN REVISION OF 2010.
COUNTY BOUNDARIES	PENNDOT	09/01/09	COUNTY BOUNDARIES	DATA DOWNLOADED FROM SOURCE AND MAPPED WITHOUT MANIPULATION
EAST HANOVER TOWNSHIP EXISTING SEWER LAYERS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	POINT, LINE, AND POLYGON DATASETS DERIVED FROM EHT AS BUILT DRAWINGS	DIGITIZED FROM SCANNED AND CAD DRAWING SETS PROVIDED BY EHT - MANHOLES, SEWER MAINS, PUMP STATIONS AND TREATMENT PLANTS.
EAST HANOVER TOWNSHIP SEWER SERVICE AREAS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/22/10	CREATED BASED ON SELECTION OF PARCELS IN REQUIRED PROXIMITY TO PROPOSED SEWER, ENGINEERING CALCULATIONS FOR CONNECTIONS OF HOMES, EXISTING USERS, AND TYPE OF SEWER MAINS (COLLECTION SYSTEM MAINS ONLY) INTERCEPTOR AND TRANSFER MAINS ARE NOT INCLUDED.	USED TO DELINEATE POTENTIAL SEWER SERVICE AND ON LOT MANAGEMENT AREAS.
FLOODPLAIN OVERLAY ZONE	LTL CONSULTANTS, DIGITIZED IN HOUSE.	09/01/09	POLYGON LAYERS REPRESENTING THE FEMA 100 YEAR FLOODPLAIN AND EAST HANOVER TOWNSHIP DELINEATED FLOODPLAIN OVERLAY	CREATION OF THE FLOODPLAIN LAYER BASED ON EHT ZONING REGULATIONS FRO FLOODPLAIN OVERLAY ZONE
FUTURE DEVELOPMENT PROPERTIES	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/20/10	CREATED BASED ON SELECTED PARCEL DATA FROM DAUPIN COUNTY GIS DEPARTMENT. DATA WAS SELECTED BASED ON OWNERSHIP, LAND USE CODE, AND AREA ATTRIBUTES., PROPERTIES ALSO REQUESTING CONSIDERATION IN THE PLAN OR FUTURE CONNECTIONS WERE ALSO ADDED.	USED TO REPRESENT POTENTIAL AREAS WHERE DEVELOPMENT MAY OCCUR IN THE FUTURE.
GEOLOGIC FEATURES	PA NATURAL RESOURCES AND CONSERVATION SERVICE	09/01/09	POLYGON DATA FOR BEDROCK ROCK FORMATION AND CORRESPONDING LITHOLOGY FOR PENNSYLVANIA	DATA DOWNLOADED FROM SOURCE AND MAPPED WITHOUT MANIPULATION
LAKES / RIVERS / PONDS	DAUPHIN COUNTY GIS DEPARTMENT	09/01/09	POLYGON DATA REPRESENTING PONDS, LAKES AND RIVER BOUNDARIES FOR MAJOR WATERBODIES IN DAUPHIN COUNTY	DATA DOWNLOADED FROM SOURCE AND MAPPED WITHOUT MANIPULATION
MAJOR ROADS	PENNDOT	09/01/09	MAJOR ROADS DATASET SHOWING ROAD CENTERLINES AND CHARACTERISTICS FOR ALL STATE AND NATIONAL ROADS IN PENNSYLVANIA	DATA DOWNLOADED FROM SOURCE AND MAPPED WITHOUT MANIPULATION
MUNICIPAL BOUNDARIES	DAUPHIN COUNTY GIS DEPARTMENT	09/01/09	DAUPHIN COUNTY MUNDICPAL BOUNDAIRES	DATA DOWNLOADED FROM SOURCE AND MAPPED WITHOUT MANIPULATION



## GIS DATA LAYER DESCRIPTIONS

LAYER NAME	DATA ORIGIN	DATE OF DOWNLOAD OR COMPLETION	PROCESS DESCRIPTION	LAYER NOTES
NATURAL RESTRICTIONS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	POLYGON DATASET DERRIVED FROM RESTRICTIVE AREAS BASED ON EHT LAND USE REGULATIONS	MERGE OF FLOODPLAIN OVERLAY, STREAM BUFFER, NWI, AND STEEP SLOPE DATA SETS
OLDS MALFUNCTIONS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	POINT DATA DERRIVED FROM THE MAPPING OF 2006 SANITARY NEEDS SURVEY AND 2009 FIELD VERIFICATIONS	MAPPED BASED ON NEW SANITARY NEEDS DATABASE COMPLETED AT TIME OF WELL WATER SAMPLING.
OLDS SUITABILITY RANKING	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	RASTER DATA DERRIVED FROM RANKING SOIL SUITABILITY FOR OLDS (CONVENTIONAL) FROM SSURGO DATABASE	SUITABILITY CALCULATED BY RANKING EACH LAYER DERRIVED USING USDA SOIL DATA VIEWER SOFTWARE AND OVERLAID & RE-RANKED.
PARCEL BOUNDARIES	DAUPHIN COUNTY GIS DEPARTMENT	09/01/09	PARCEL BOUNDARIES AND ASSESSMENT DATA FOR EAST HANOVER TOWNSHIP	DATA DOWNLOADED FROM SOURCE AND MAPPED WITHOUT MANIPULATION
POTENTIAL FUTURE LAND DEVELOPMENT	DAUPHIN COUNTY GIS DEPARTMENT, MODIFIED BY LTL CONSULTANTS	04/12/10	PROPERTIES WERE SELECTED FROM THE DAUPHIN COUNTY PARCEL SHAPEFILE BASED ON ANALYSIS OF DAUPHIN COUNTY LAND USE CODES, AERIAL PHOTOGRAPHIC CONFIRMATION, AND INFORMATION PROVIDED BY TOWNSHIP	THIS LAYER SHOWS LAND POTENTIALLY AVAILABLE FOR DEVELOPMENT UNDER DAUPHIN COUNTY BOARD OF ASSESSMENT AND RECORDER OF DEEDS INFO.
PUBLIC WATER SUPPLIES	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	POINT LAYER CREATED USING DATA DERRIVED FROM PADEP PERMIT RECORDS	DATA MAPPED BASED ON LOCATION INFORMATION IN PADEP RECORDS
PUBLIC WELL SUPPLY AREAS	PAGWIS (SEE ABOVE)	04/19/10	PARCELS SELECTED AND DISOVLED BASED ON MAPPING REQUIREMENTS	IDENTIFIES THE BASIC SERVICE AREA (BASED ON PARCEL BOUNDARIES ALONE) OF THE HIGHLIGHTED PAGWIS PUBLIC WELLS
PUBLIC WELLS	PENNSYLVANIA GROUND WATER INFORMATION SYSTEM (PAGWIS)	04/19/10	DOWNLOADED AND SORTED TABLE BASED ON WELL USE AND WATER USE FIELDS. WITHDRAW WELL USE AND PUBLIC USE WATER USE WERE SELECTED AND MAPPED BASED ON XY COORDINATES. CORRECTED USING AERIAL PHOTOGRAPHY. WELLS THAT DID NOT FIT PADEP DESCRIPTION OF PUBLIC WATER USE WERE ELIMINATED.	IDENTIFIES WELL LOCATIONS BASED ON DRILLER RECORDS.
RESIDENTIAL HOLDING TANKS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	POINT DATA DERRIVED FROM THE MAPPING OF 2006 SANITARY NEEDS SURVEY, SEO RECORDED MALFUNCTIONS, AND 2009 FIELD VERIFICATIONS	MAPPED BASED ON NEW SANITARY NEEDS DATABASE COMPLETED AT TIME OF WELL WATER SAMPLING.
SRBC WATERSHEDS	SUSQUEHANNA RIVER BASIN COMMISSION	04/03/10	POLYGON DATA SHOWING MINOR WATERSHED BOUNDARIES IN EAST HANOVER TOWNSHIP	DATA DOWNLOADED FROM SOURCE AND MAPPED WITHOUT MANIPULATION
STEEP SLOPE AREAS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	09/01/09	POLYGON LAYERS BASED ON DATA FROM USGS DIGITAL ELEVATION MODELS (30 METER)	SLOPE CALCULATED USING SPATIAL ANALYST AND CONVERTED TO POLYGONS, DIVIDED INTO 15% AND 25% CATEGORIES AS INDICATED BY THE EHT ZONING ORDINANCE.
STREAM CENTERLINES	DAUPHIN COUNTY GIS DEPARTMENT	09/01/09	STREAM CENTERLINE AND ATTRIBUTE DATA FOR ALL STREAMS IN DAUPHIN COUNTY	DATA DOWNLOADED FROM SOURCE AND MAPPED WITHOUT MANIPULATION



## GIS DATA LAYER DESCRIPTIONS

LAYER NAME	DATA ORIGIN	DATE OF DOWNLOAD OR COMPLETION	PROCESS DESCRIPTION	LAYER NOTES
STUDY SECTORS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	POLYGON DATA DERRIVED FROM SRBC WATERSHEDS AND PENN DOT ROAD CENTERLINES DATA	DIGITIZED BASED ON RESTRICTIONS TO FLOW OF WATER
SUBDIVISIONS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/12/10	DATA WAS DIGITIZED BASED ON DAUPHIN COUNTY PARCEL BOUNDARIES (2009) AND INFORMATION PROVIDED BY TOWNSHIP STAFF, REVIEWED BY TOWNSHIP ENGINEER, AND STAFF.	SHOWS ACTIVE SUBDIVISION AND LAND DEVELOPMENT BOUNDARIES THAT ARE PERTINENT TO THE WATER AND WASTEWATE PLANNING PROCESS.
USDA SOILS DATA	USDA / NRCS SOIL SURVEY GEOGRAPHIC DATABASE (SSURGO)	09/01/09	SOILS DATA USED IN ALL SOIL MAPPING APPLICATIONS	VARIOUS SOILS LAYERS HAVE BEEN GENERATED USING THIS DATABASE. SOIL DATA HAS BEEN MANIPULATED USING USDA SOIL DATA VIEWER SOFTWARE. THESE LAYERS INCLUDE MAP UNITS, PRIME FARMLAND, PRIME AGRICULTURAL SOILS, ON LOT SYSTEM SUITABILITY, AND HYDRIC SOILS.
WASTEWATER TREATMENT FACILITIES	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	POINT LAYER CREATED USING DATA DERRIVED FROM PADEP PERMIT RECORDS	DATA MAPPED BASED ON LOCATION INFORMATION IN PADEP RECORDS
WEIGHTED SUM ANALYSIS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	RASTER DATA DERRIVED FROM POINT DATA FOR MALFUNCTIONS, NITRATE, AND COLIFORM CONTAMINATION.	POINT DATA WAS INTERPOLATED USING SPATIAL ANALYST SOFTWARE, THE RESULTING RASTERS WERE RANKED AND NORMALIZED. THESE LAYERS WERE THEN RUN THROUGH SPATIAL ANALYST WEIGHTED SUM ANALYSIS SOFTWARE TO COMPILE AND RE RANK.
WELL WATER SAMPLING (NITRATES AND COLIFORM) DATASETS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/03/10	POINT AND POLYGON DATA DERRIVED FROM THE WELL WATER SAMPLING, PARCEL CENTROIDS AND GPS LOCATION IN THE FIELD.	LAYERS CREATED BASED ON PADEP REQUIREMENTS FOR REPORTING WELL WATER CONTAMINATION AND BUFFERS FOR POINTS WITH ELEVATED NITRATES.
WETLANDS	NATIONAL WETLAND INVENTORY	04/03/10	POLYGON DATA DERRIVED FROM NWI DATA DOWNLOADED FROM PENNSYLVANIA SPATIAL DATA ACCESS WEBSITE (PASDA)	DATA DOWNLOADED FROM SOURCE AND MAPPED WITHOUT MANIPULATION
ZONING DISTRICTS	LTL CONSULTANTS, DIGITIZED IN HOUSE.	04/22/10	DIGITIZED BASED ON ORIGINAL ZONING MAP AND ADDITIONAL CHANGES TO ZONING DISTRICTS THROUGH ORDINANCE	ZONING LAYERS ARE REPORTED AS CURRENT BY TOWNSHIP ENGINEER







## **APPENDIX 4.0 – TECHNICAL ALTERNATIVES**

- 4.1 Alternative Maps**
- 4.2 Pennsylvania Natural Diversity Inventory**
- 4.3 Pennsylvania Historical And Museum Commission**
- 4.4 PA DEP – Preliminary Treatment Requirements**
- 4.5 Alternative Cost Estimate Worksheets**
- 4.6 Alternative Economic Analysis**

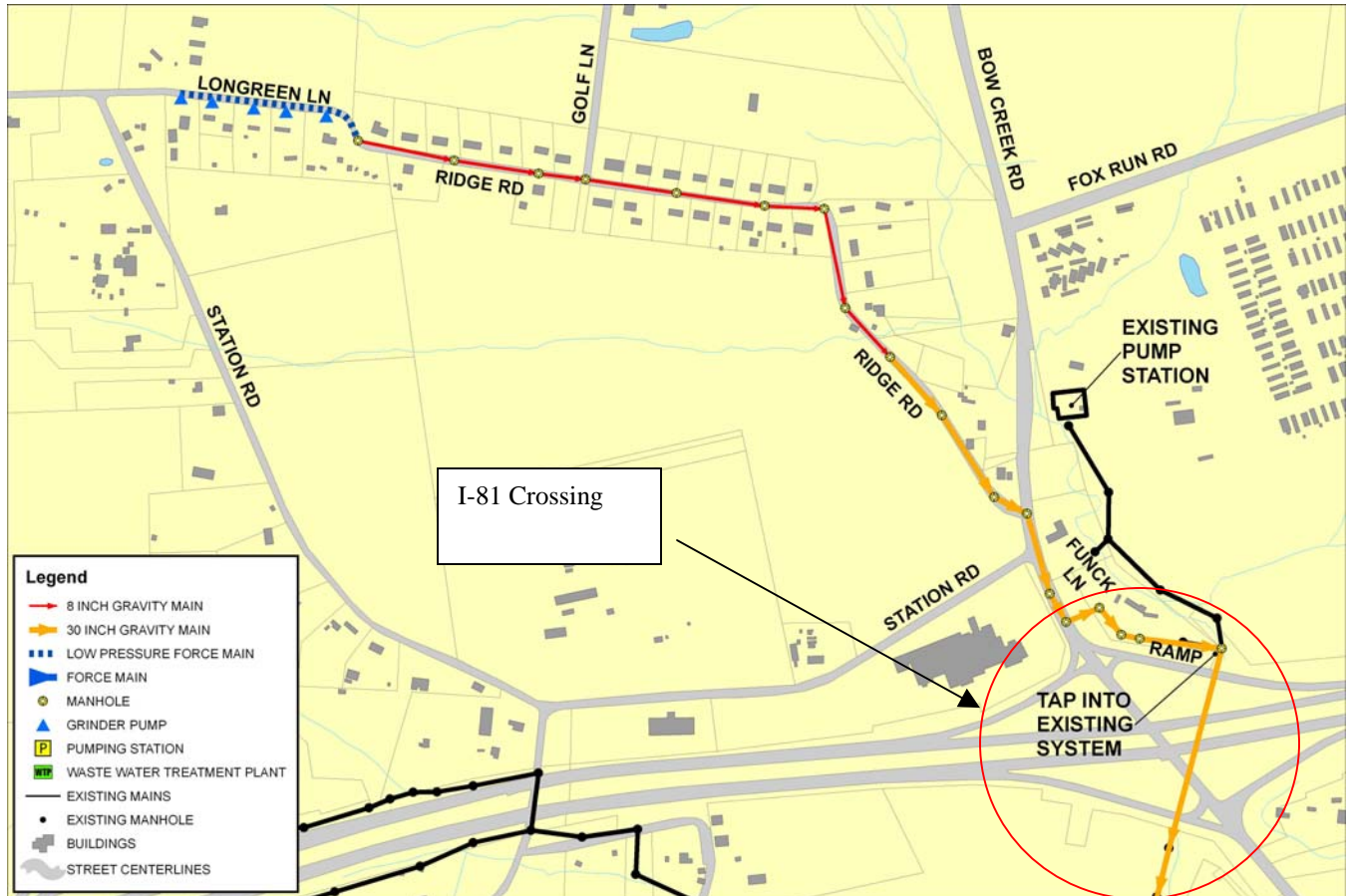






# APPENDIX 4.1. TECHNICAL ALTERNATIVES: MAPS

## ALTERNATIVES 1.A.1 – RIDGE ROAD EXTENSION



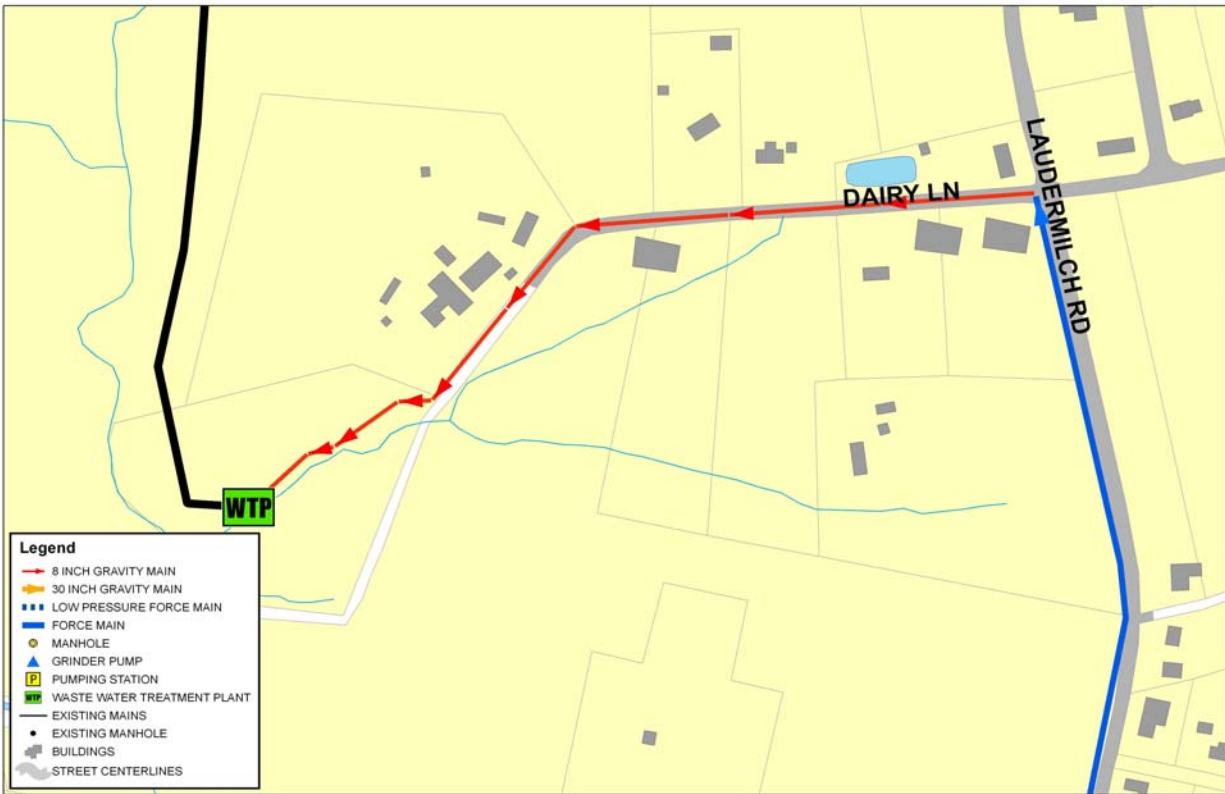


## ALTERNATIVE 1.A.2 & 1.A.3 – I-81 CROSSING

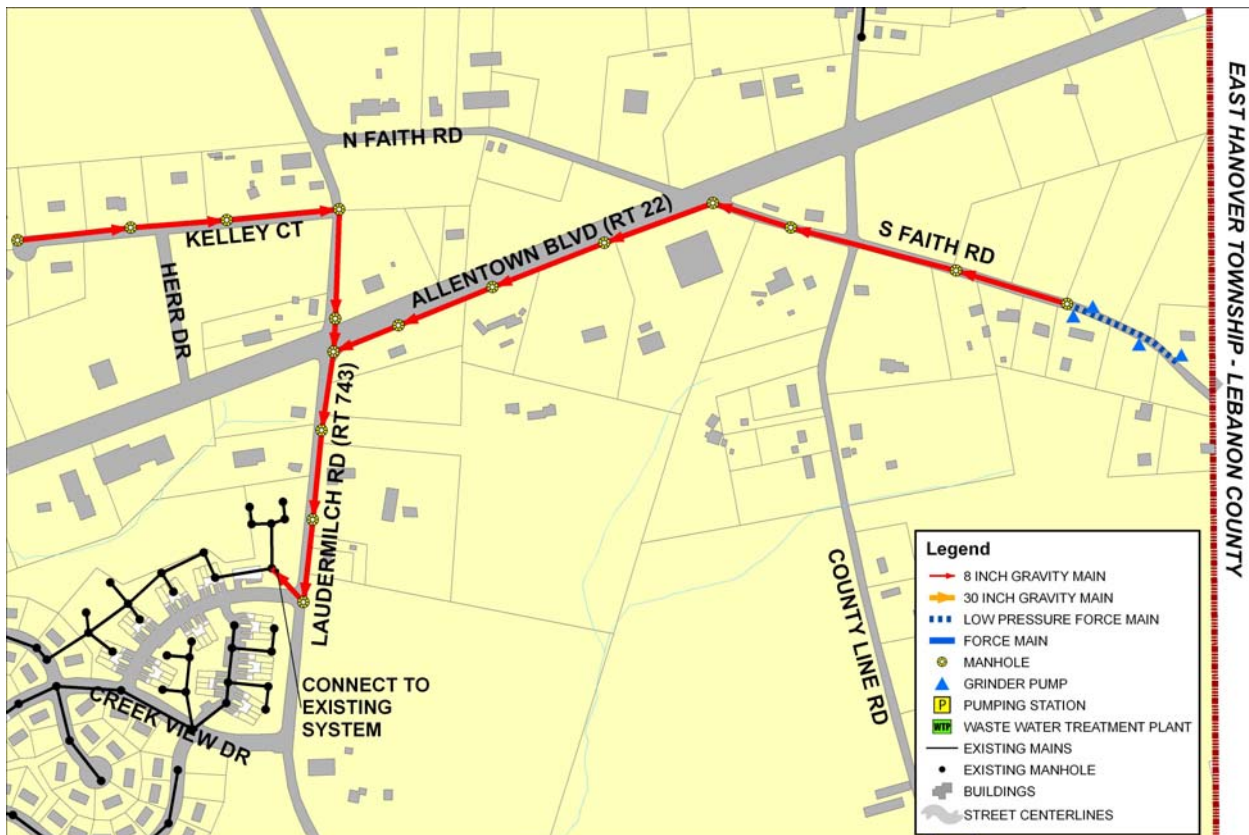




## ALTERNATIVE 2.A – DAIRY LANE

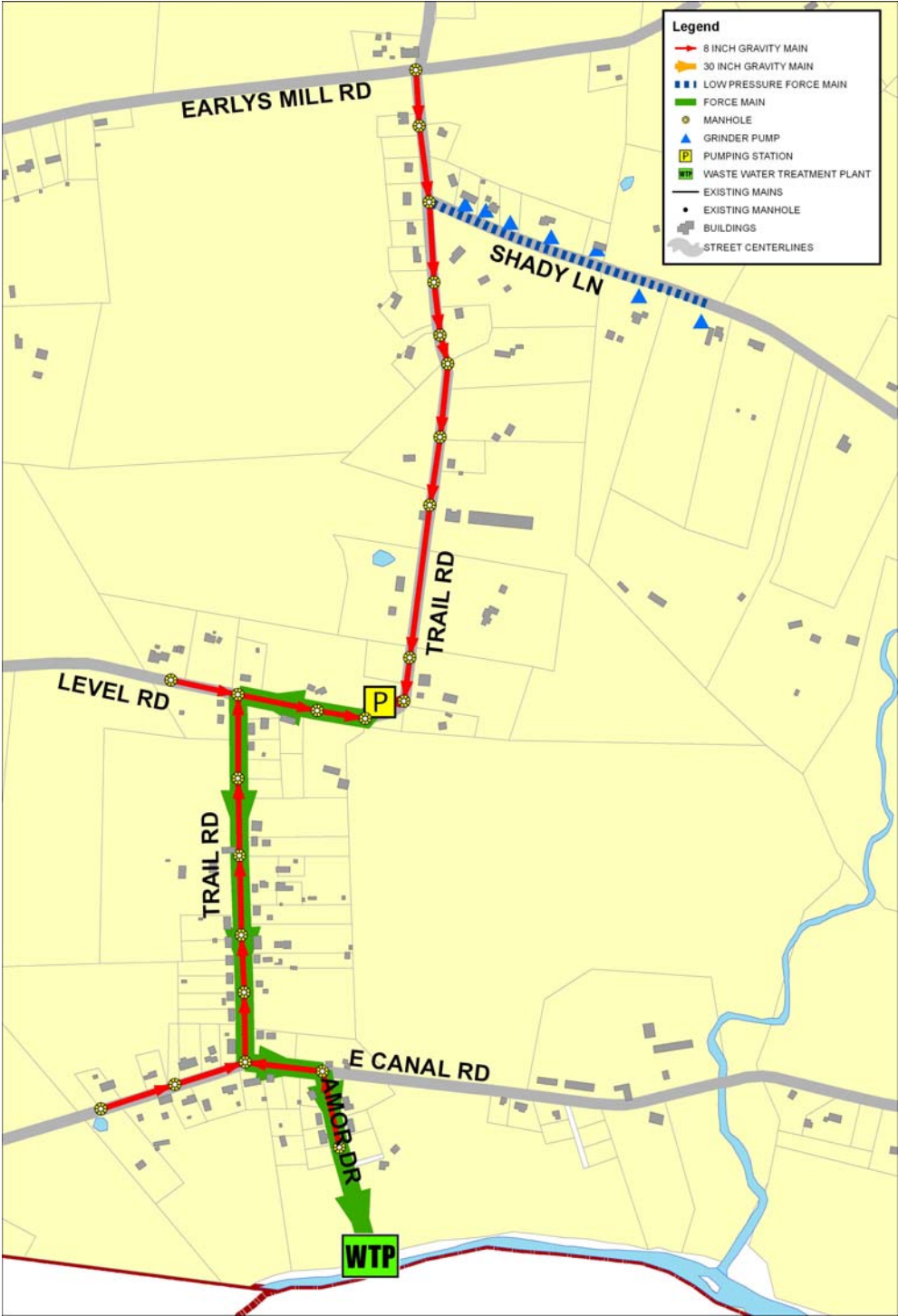


## ALTERNATIVE 2.B



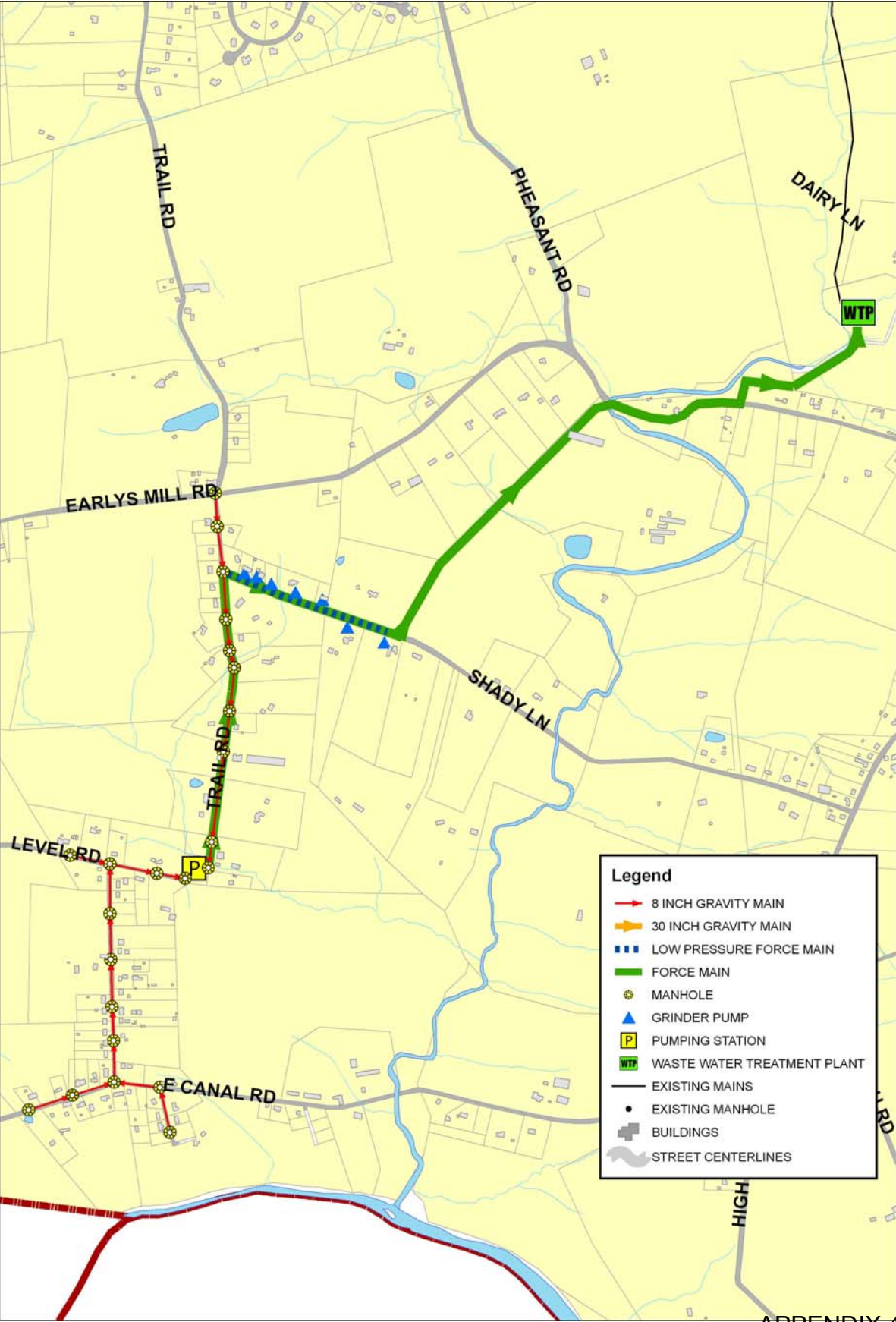


ALTERNATIVE 2.C



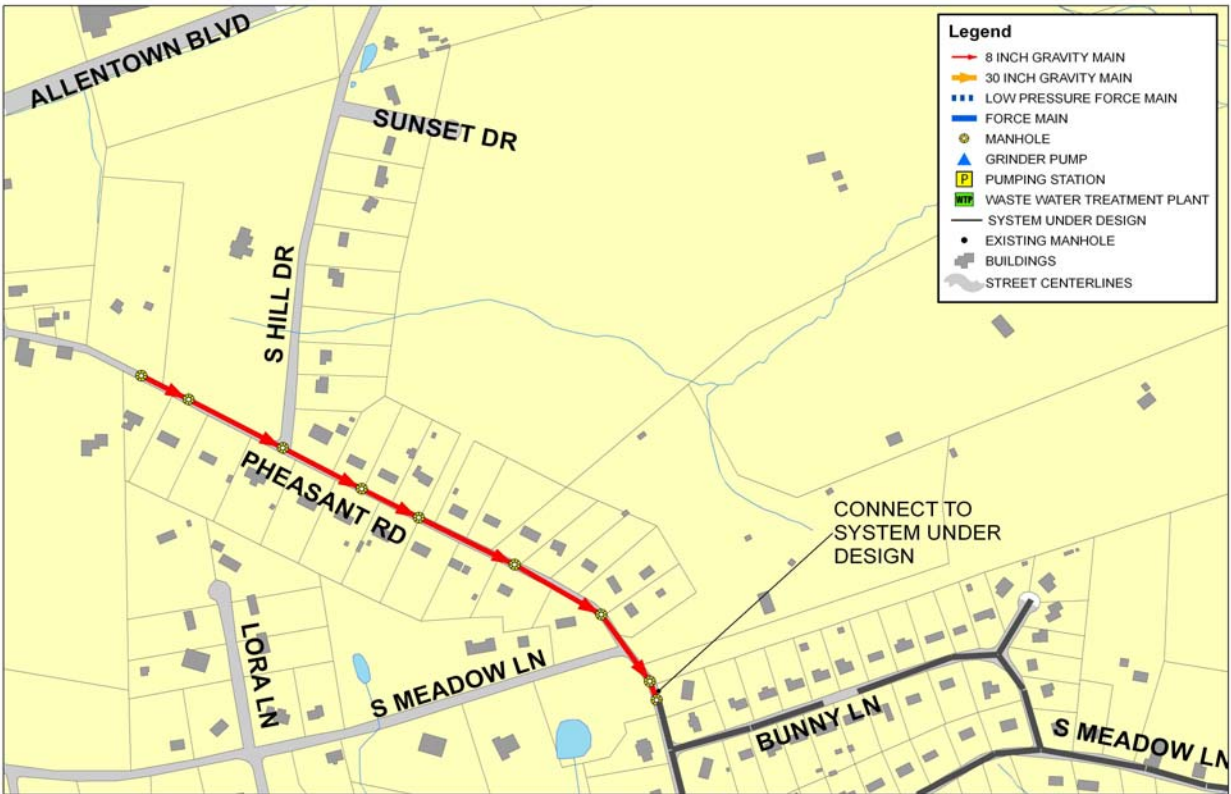


ALTERNATIVE 2.D

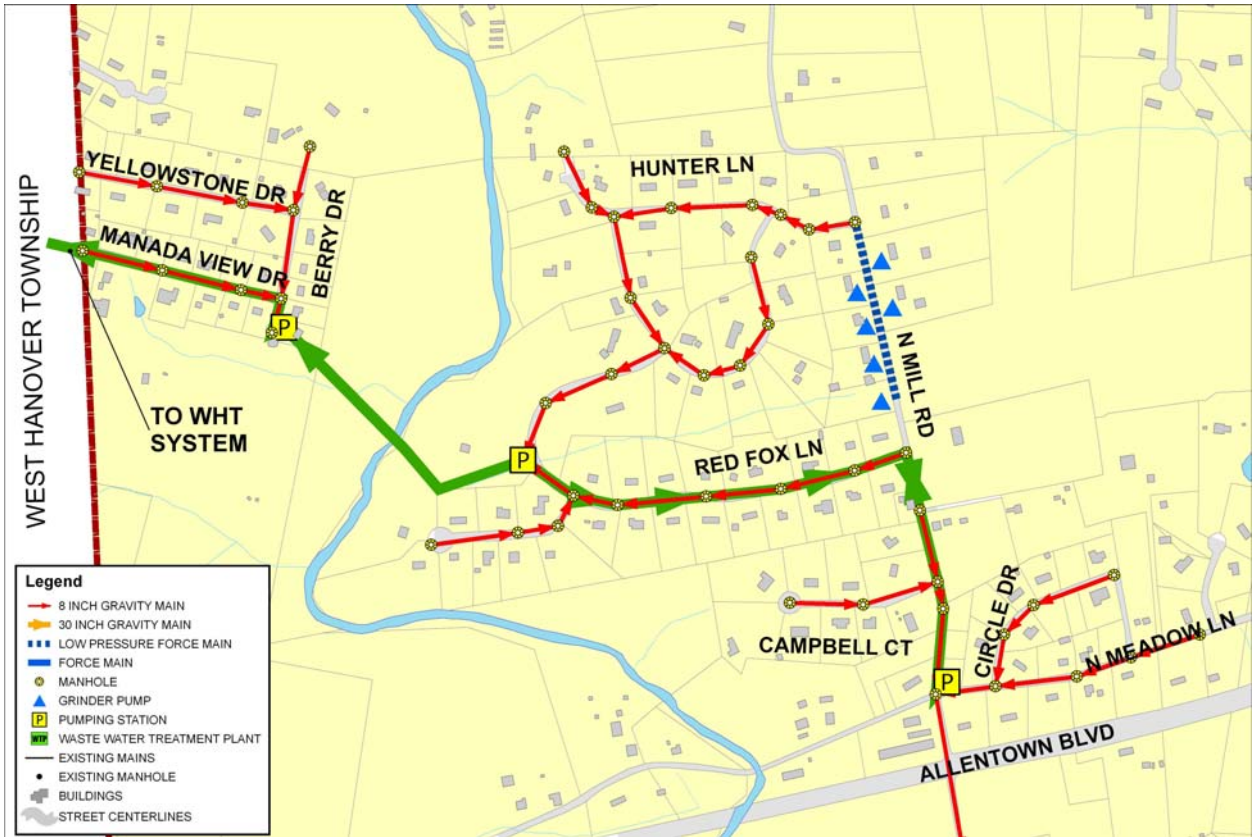




ALTERNATIVE 2.E

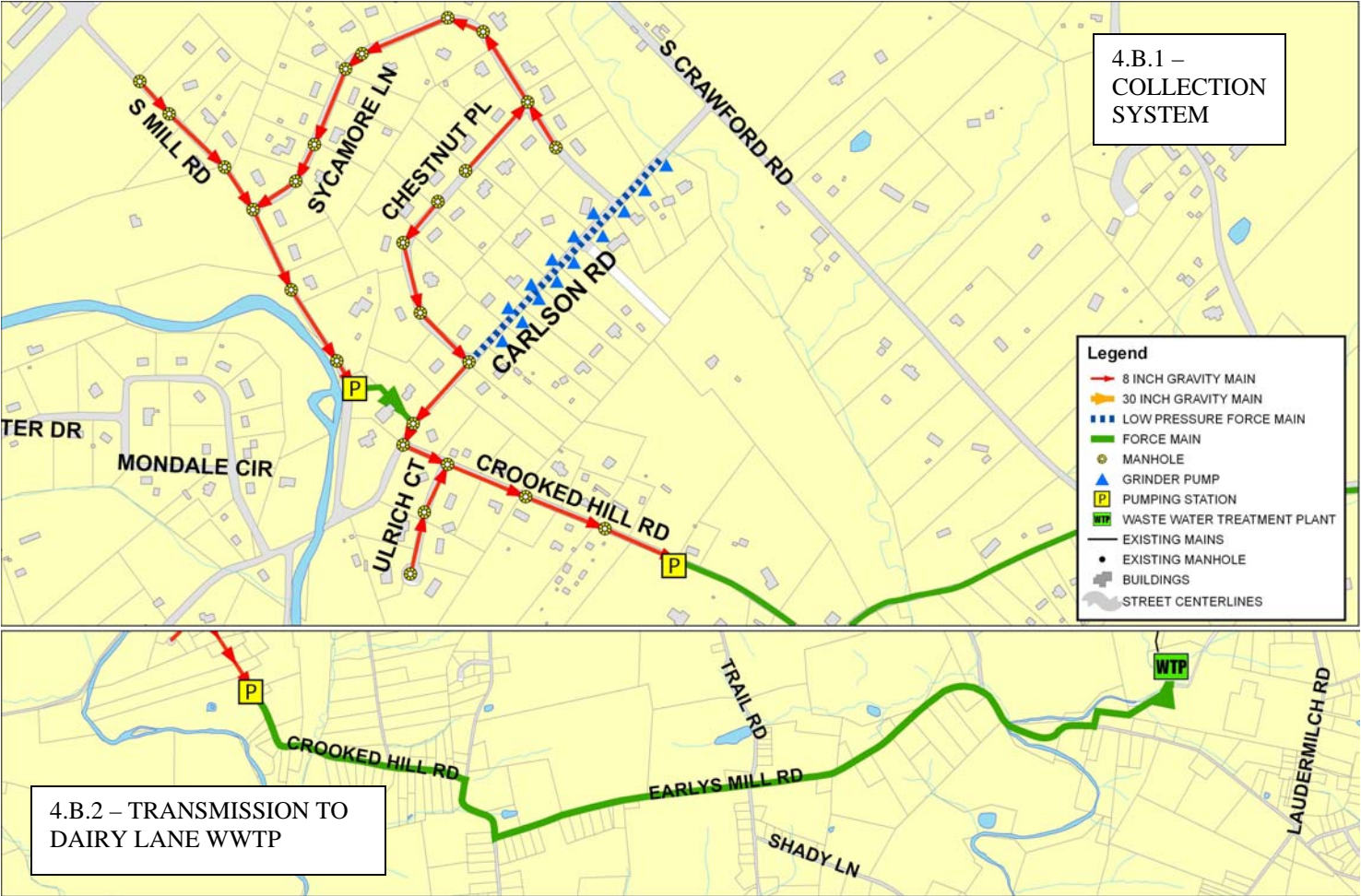


ALTERNATIVES 4.A.1 & 4.A.2



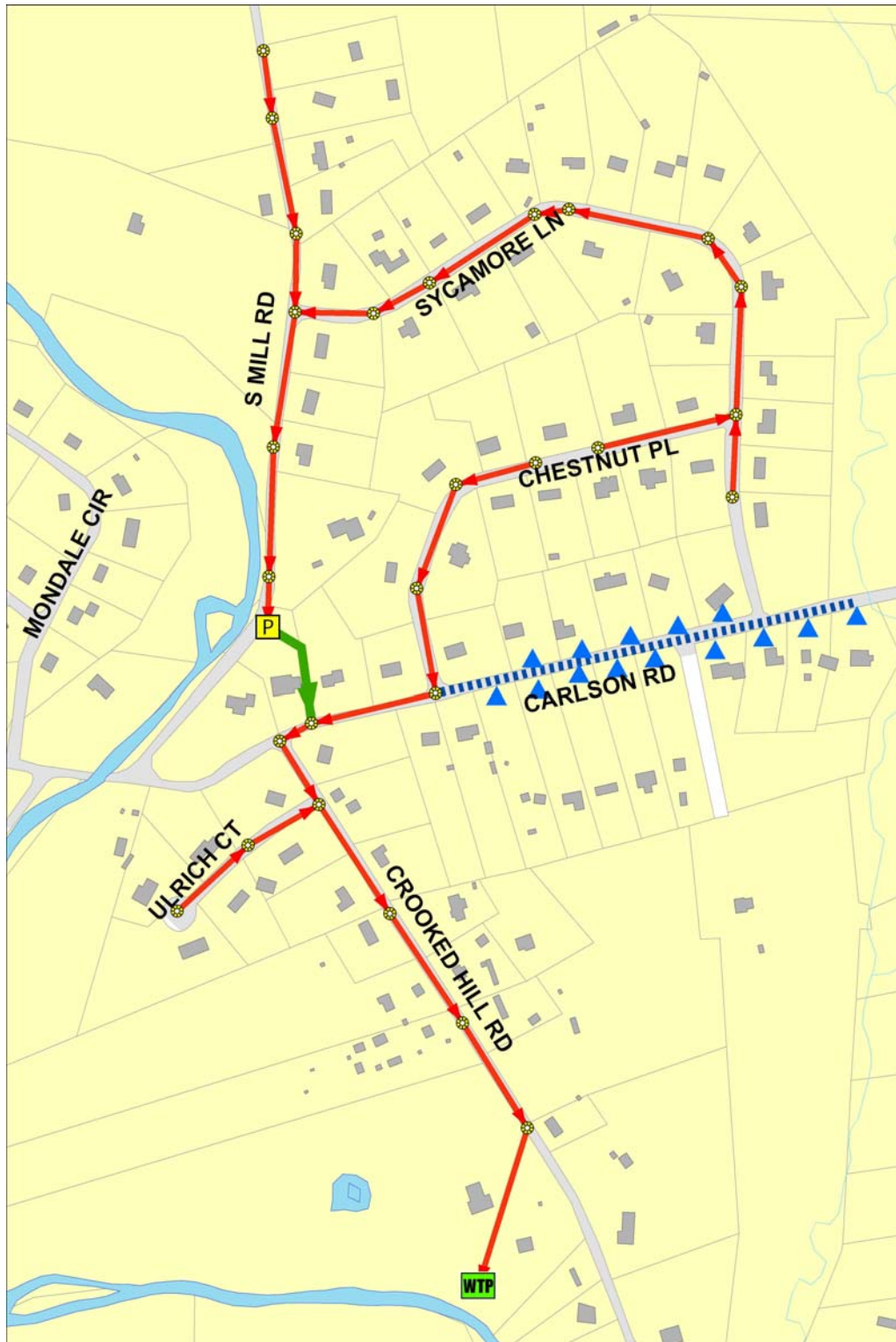


ALTERNATIVE 4.B.1 & 4.B.2



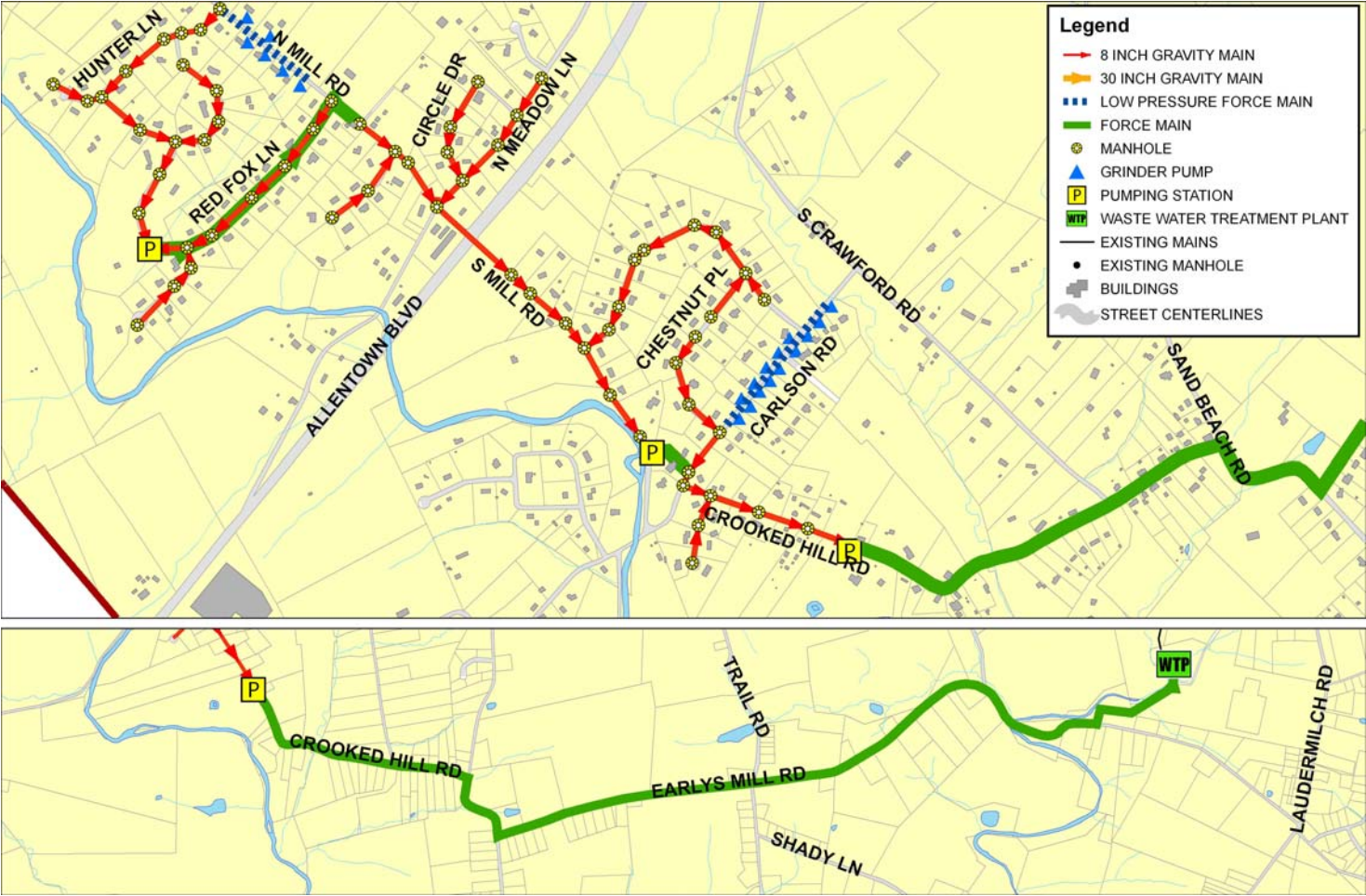


# ALTERNATIVE 4.C





ALTERNATIVE 4.F









## 1. PROJECT INFORMATION

Project Name: **EHT 537 AREA A**

Date of review: **4/25/2010 8:39:22 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**

Project Area: **130.0 acres**

County: **Dauphin Township/Municipality: East Hanover**

Quadrangle Name: **HERSHEY ~ ZIP Code: 17028, 17112**

Decimal Degrees: **40.347525 N, -76.698389 W**

Degrees Minutes Seconds: **40° 20' 51.1" N, -76° 41' 54.2" W**



## 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.



### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for one year** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt.

#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### U.S. Fish and Wildlife Service

**RESPONSE:** No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

### 4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt, a completed PNDI form and a USGS 7.5 minute quadrangle map with the project boundaries delineated on the map. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.



## 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

## 6. AGENCY CONTACT INFORMATION

### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

### U.S. Fish and Wildlife Service

Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please.

### PA Fish and Boat Commission

Division of Environmental Services  
450 Robinson Lane, Bellefonte, PA. 16823-7437  
NO Faxes Please

### PA Game Commission

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

## 7. PROJECT CONTACT INFORMATION

Name: \_\_\_\_\_  
Company/Business Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone:(\_\_\_\_\_) \_\_\_\_\_ Fax:(\_\_\_\_\_) \_\_\_\_\_  
Email: \_\_\_\_\_

## 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

\_\_\_\_\_  
applicant/project proponent signature

\_\_\_\_\_  
date



## 1. PROJECT INFORMATION

Project Name: **EHT 537 AREA B**

Date of review: **5/3/2010 12:07:18 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**

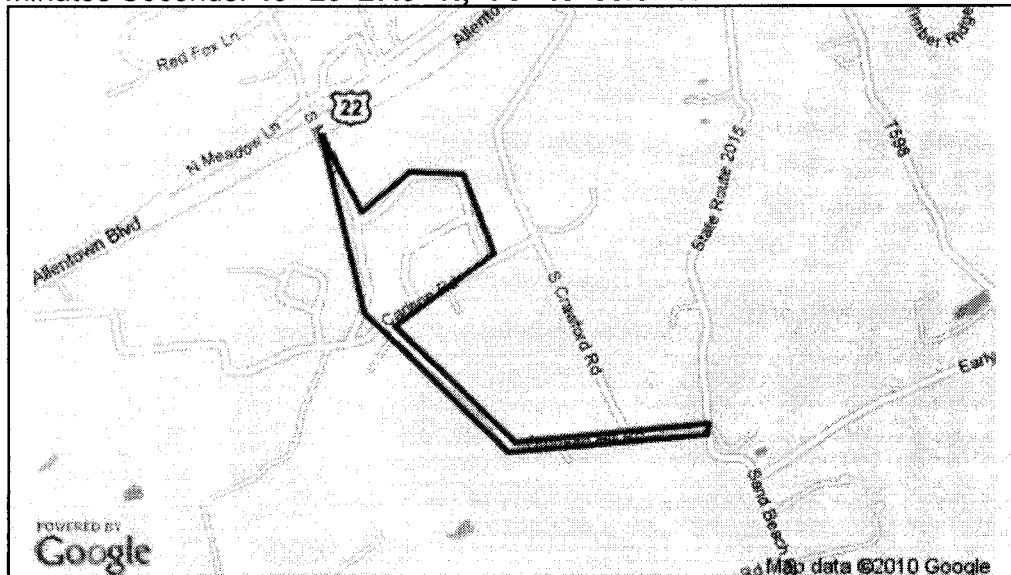
Project Area: **72.7 acres**

County: **Dauphin Township/Municipality: East Hanover**

Quadrangle Name: **HERSHEY** ~ ZIP Code: **17036**

Decimal Degrees: **40.340918 N, -76.682381 W**

Degrees Minutes Seconds: **40° 20' 27.3" N, -76° 40' 56.6" W**



## 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.



### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for one year** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt.

#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### U.S. Fish and Wildlife Service

**RESPONSE:** No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

### 4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt, a completed PNDI form and a USGS 7.5 minute quadrangle map with the project boundaries delineated on the map. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.



## 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

## 6. AGENCY CONTACT INFORMATION

### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

### U.S. Fish and Wildlife Service

Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please.

### PA Fish and Boat Commission

Division of Environmental Services  
450 Robinson Lane, Bellefonte, PA. 16823-7437  
NO Faxes Please

### PA Game Commission

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

## 7. PROJECT CONTACT INFORMATION

Name: \_\_\_\_\_  
Company/Business Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone:( ) \_\_\_\_\_ Fax:( ) \_\_\_\_\_  
Email: \_\_\_\_\_

## 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

\_\_\_\_\_  
applicant/project proponent signature

\_\_\_\_\_  
date



## 1. PROJECT INFORMATION

Project Name: **EHT 537 AREA C**

Date of review: **5/3/2010 12:31:39 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**

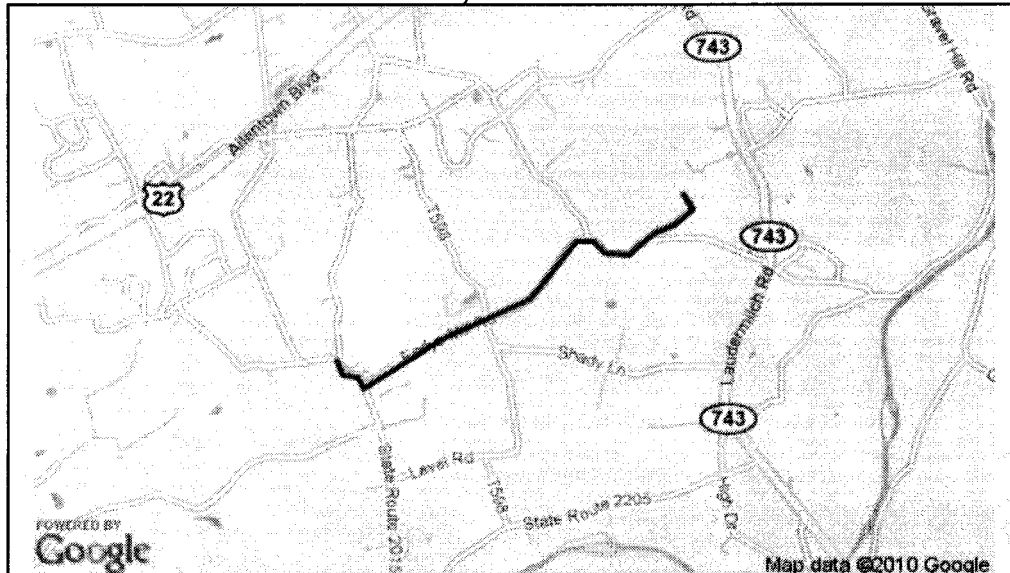
Project Length: **11528.0 feet**

County: **Dauphin Township/Municipality: East Hanover**

Quadrangle Name: **HERSHEY** ~ ZIP Code: **17078, 17036**

Decimal Degrees: **40.341049 N, -76.655645 W**

Degrees Minutes Seconds: **40° 20' 27.8" N, -76° 39' 20.3" W**



## 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.



### 3. AGENCY COMMENTS

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#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### U.S. Fish and Wildlife Service

**RESPONSE:** No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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## 5. ADDITIONAL INFORMATION

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## 6. AGENCY CONTACT INFORMATION

### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

### U.S. Fish and Wildlife Service

Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please.

### PA Fish and Boat Commission

Division of Environmental Services  
450 Robinson Lane, Bellefonte, PA. 16823-7437  
NO Faxes Please

### PA Game Commission

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

## 7. PROJECT CONTACT INFORMATION

Name: \_\_\_\_\_  
Company/Business Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone:(\_\_\_\_\_) \_\_\_\_\_ Fax:(\_\_\_\_\_) \_\_\_\_\_  
Email: \_\_\_\_\_

## 8. CERTIFICATION

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\_\_\_\_\_  
applicant/project proponent signature

\_\_\_\_\_  
date



## 1. PROJECT INFORMATION

Project Name: **EHT 537 AREA D**

Date of review: **5/3/2010 12:36:01 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**

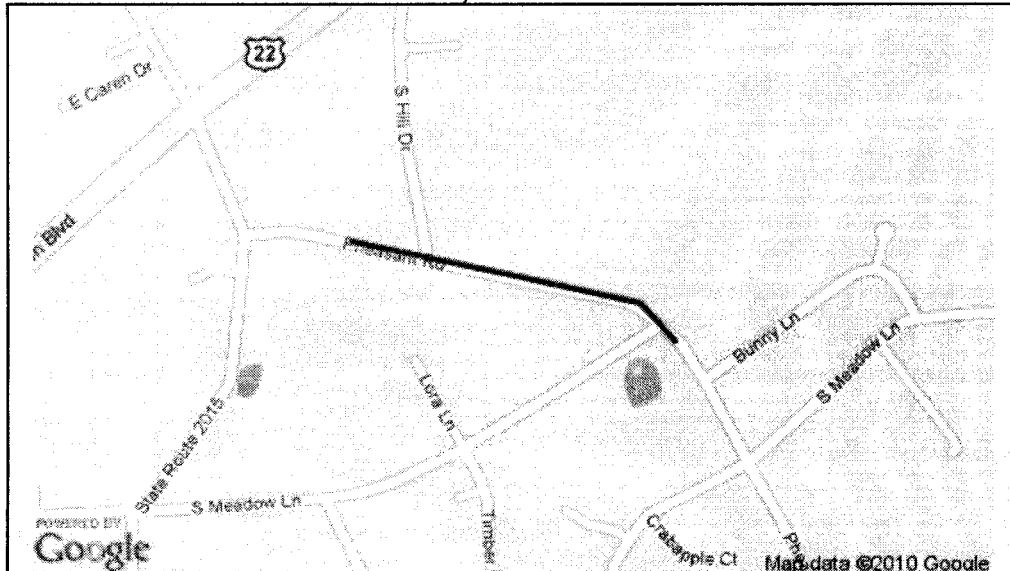
Project Length: **2160.9 feet**

County: **Dauphin Township/Municipality: East Hanover**

Quadrangle Name: **HERSHEY** ~ ZIP Code: **17028**

Decimal Degrees: **40.355374 N, -76.663455 W**

Degrees Minutes Seconds: **40° 21' 19.3" N, -76° 39' 48.4" W**



## 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.



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#### PA Game Commission

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#### PA Department of Conservation and Natural Resources

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### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

### U.S. Fish and Wildlife Service

Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please.

### PA Fish and Boat Commission

Division of Environmental Services  
450 Robinson Lane, Bellefonte, PA. 16823-7437  
NO Faxes Please

### PA Game Commission

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

## 7. PROJECT CONTACT INFORMATION

Name: \_\_\_\_\_  
Company/Business Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone:(\_\_\_\_\_) \_\_\_\_\_ Fax:(\_\_\_\_\_) \_\_\_\_\_  
Email: \_\_\_\_\_

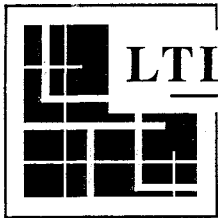
## 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

\_\_\_\_\_  
applicant/project proponent signature

\_\_\_\_\_  
date





# LTL CONSULTANTS, LTD. • ENGINEERS & CODE OFFICIALS

PO BOX 241 • ONE TOWN CENTRE DRIVE • OLEY, PA 19547  
(610) 987-9290 • FAX: (610) 987-9288

April 26, 2010

Mr. Douglas C. McLearen  
PA Historical and Museum Commission  
Bureau for Historic Preservation  
400 North Street, Second Floor  
Harrisburg, PA 17120-0093

RE: Act 537 Plan Update  
East Hanover Township  
Dauphin County

Dear Mr. McLearen:

On behalf of East Hanover Township, Dauphin County, LTL Consultants, Ltd. is requesting a project review for potential historical and archaeological resources, for the chosen sewer alternatives in East Hanover Township's pending Act 537 Plan Update.

Enclosed you will find the Cultural Resources Notice, project area descriptions and a map of the proposed project areas, depicting the proposed locations of the sewer lines. Most of the sewers will be in the roadway or rights-of-way.

Please review and contact me should you need any further information.

Sincerely,

Lisa A. Sweigert  
LTL Consultants, Ltd.  
East Hanover Township Engineer

**CERTIFIED MAIL #7006 0100 0003 9439 1885**

Enclosure

cc: East Hanover Township Bd. of Supervisors (for Township distribution)  
File: M:\Engineering\East Hanover Township - 07\0507-0803 ACT 537 UPDATE\SEC VI ALT  
ANALYSIS\PHMC review request 042610.doc  
0507-0803



**CULTURAL RESOURCE NOTICE****DEP USE ONLY**

Date Received

**Read the instructions before completing this form.**

<b>SECTION A. APPLICANT IDENTIFIER</b>			
Applicant Name	East Hanover Township		
Street Address	8848 Jonestown Road, PO Box 4323		
City	Grantville	State	PA Zip 17028-8650
Telephone Number	717-469-0833		
Project Title	Act 537 Plan Update		
<b>SECTION B. LOCATION OF PROJECT</b>			
Municipality	East Hanover Township	County Name	Dauphin DEP County Code 22
<b>SECTION C. PERMITS OR APPROVALS</b>			
Name of Specific DEP Permit or Approval Requested: Act 537 Plan			
Anticipated federal permits:			
<input type="checkbox"/>	Surface Mining	<input type="checkbox"/>	404 Water Quality Permit
<input type="checkbox"/>	Army Corps of Engineers	<input type="checkbox"/>	Federal Energy Regulatory Commission
<input type="checkbox"/>	401 Water Quality Certification	<input type="checkbox"/>	Other: _____
<b>SECTION D. GOVERNMENT FUNDING SOURCES</b>			
<input checked="" type="checkbox"/>	State: (Name) PENNVEST	<input type="checkbox"/>	Local: (Name) _____
<input type="checkbox"/>	Federal: (Name) _____	<input type="checkbox"/>	Other: (Name) _____
<b>SECTION E. RESPONSIBLE DEP REGIONAL, CENTRAL, DISTRICT MINING or OIL &amp; GAS MGMT OFFICE</b>			
DEP Regional Office Responsible for Review of Permit Application		<input type="checkbox"/> Central Office (Harrisburg)	
<input type="checkbox"/>	Southeast Regional Office (Norristown)	<input type="checkbox"/>	Northeast Regional Office (Wilkes-Barre)
<input checked="" type="checkbox"/>	Southcentral Regional Office (Harrisburg)	<input type="checkbox"/>	Northcentral Regional Office (Williamsport)
<input type="checkbox"/>	Southwest Regional Office (Pittsburgh)	<input type="checkbox"/>	Northwest Regional Office (Meadville)
<input type="checkbox"/>	District Mining Office: _____	<input type="checkbox"/>	Oil & Gas Office: _____
<b>SECTION F. RESPONSIBLE COUNTY CONSERVATION DISTRICT, if applicable.</b>			
County Conservation District		Telephone Number, if known	
Dauphin			
<b>SECTION G. CONSULTANT</b>			
Consultant, if applicable	LTL Consultants, Ltd., ATTN: Lisa Sweigert		
Street Address	PO Box 241		
City	Oley	State	PA Zip 19547
Telephone Number	610-987-9290		



**SECTION H. PROJECT BOUNDARIES AND DESCRIPTION****REQUIRED**

Indicate the total acres in the property under review. Of this acreage, indicate the total acres of earth disturbance for the proposed activity.

Attach a 7.5' U.S.G.S. Map indicating the defined boundary of the proposed activity.

Attach photographs of any building over 50 years old. Indicate what is to be done to all buildings in the project area.

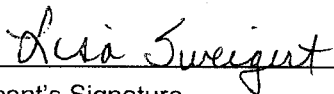
Attach a narrative description of the proposed activity.

Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission.

**REQUESTED**

Attach photographs of any building over 40 years old.

Attach site map, if available.

**SECTION I. SIGNATURE BLOCK**

Applicant's Signature

04/26/10

Date of Submission of Notice to PHMC



# CULTURAL RESOURCES NOTICE – EHT ACT 537 PLAN UPDATE

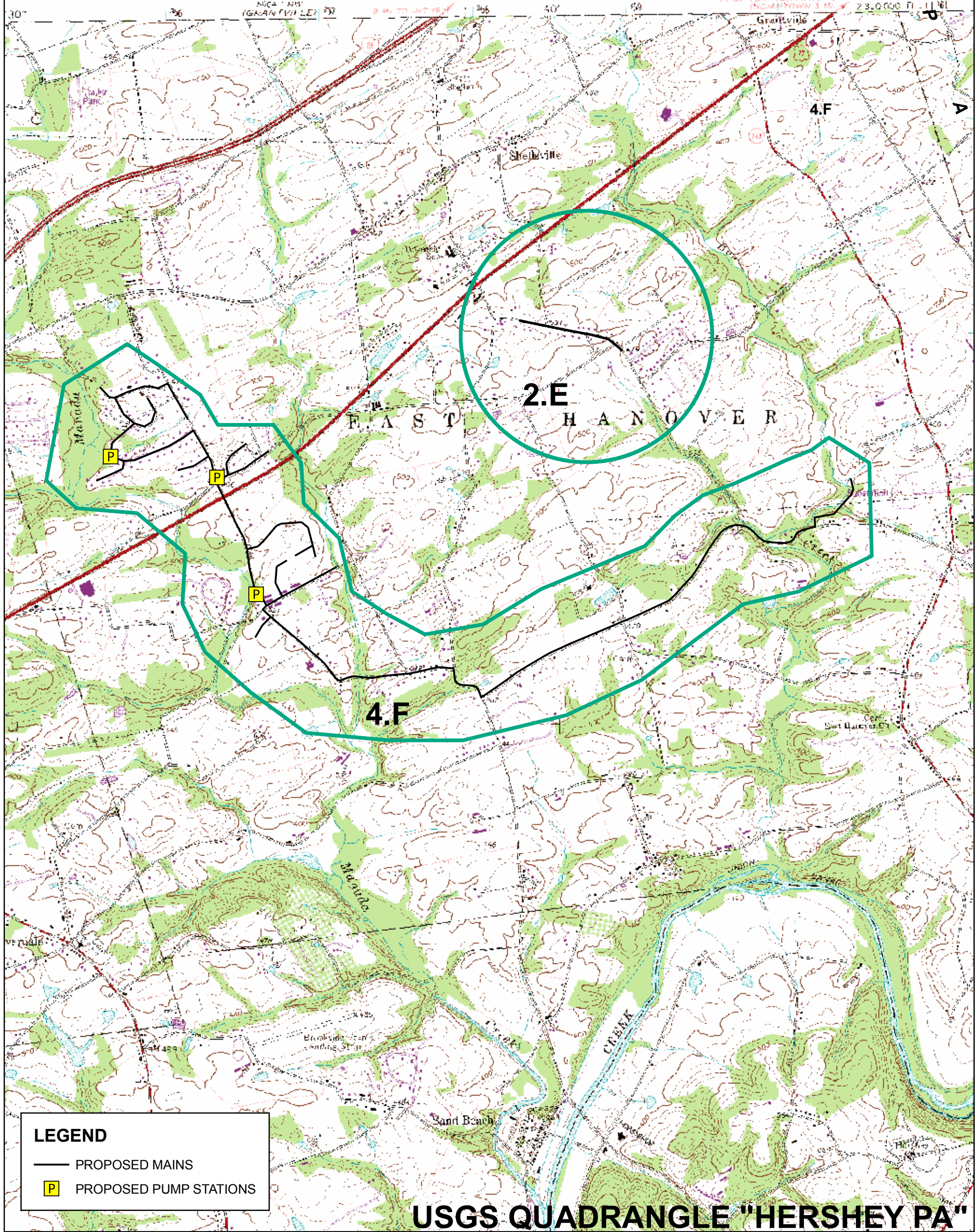
## TECHNICAL ALTERNATIVE: 2.E

MATERIALS	DESCRIPTION OF CONVEYANCE / TREATMENT	EDUs SERVED
2350 LF 8" SDR Pipe in Roadway and Shoulder 7 Manholes 1500 LF 1 1/2" LPFM 1450 LF 6" Sewer Laterals 9 Grinder Pump Systems 4200 LF Roadway Restoration	An extension of the 8" gravity line from the proposed Partridge Hills Project westward along Pheasant Road to connect 22 EDU's. An additional 9 EDU's on Hill Drive would connect into the gravity main at the Pheasant Road intersection via grinder pumps.	31 EDU's

## TECHNICAL ALTERNATIVE: 4.F

MATERIALS	DESCRIPTION OF CONVEYANCE / TREATMENT	EDUs SERVED
20500 LF 8" SDR Pipe in Roadway and Shoulder 69 Manholes 2100 LF 1 1/2" LPFM 6050 LF 6" Sewer Laterals 20 Grinder Pump Systems 3 Pump Stations 17000 LF 4" Forcemain 6 Air Release Valves 37800 LF Roadway Restoration 6300 LF Easement Restoration	6 Properties on Mill Road utilize grinder pumps to flow to Hunter Lane. Properties on Hunter Lane, Stirrup Lane, Red Fox Lane and Steeplechase Lane (total 59 EDU) flow by gravity to a Pump Station located near the creek at the bottom of Red Fox Lane. The Pump Station will force flow up to Mill Road where it will flow by gravity across Route 22. Properties along Campbell Court and Circle Drive (total 35 EDU) will connect by gravity before crossing Route 22. Gravity flow continues along Mill Road, picking up connections from Sycamore Lane to another Pump Station that will force flow through an easement to Carlson Road. Additional connections from Chestnut Place and Carlson Road, including 14 via grinder pumps tie in at this point. Gravity flow continues down Crooked Hill Road to a third and final Pump Station. Total EDU's connected are 180. The Pump Station will then force flow through a 4" forcemain almost 3 miles to the east to the existing Dairy Lane WWTP.	180 EDU's













Commonwealth of Pennsylvania  
Pennsylvania Historical and Museum Commission  
**Bureau for Historic Preservation**  
Commonwealth Keystone Building, 2nd Floor  
400 North Street  
Harrisburg, PA 17120-0093  
[www.phmc.state.pa.us](http://www.phmc.state.pa.us)

MAY 25 2010

May 20, 2010

Lisa A. Sweigert  
LTL Consultants, Ltd.  
PO Box 241  
One Town Centre Drive  
Oley, PA 19547

Re: File No. ER 2010-1381-043-A  
PV: Act 537 Plan Update, Proposed  
Sewer Line Locations, East Hanover  
Twp., Dauphin Co.

Dear Ms. Sweigert:

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 instructions for conducting Phase I surveys are available on our web site at <http://www.phmc.state.pa.us/bhp/Inventories/ArchaeologyGuidelines.pdf> or from our office upon request.

There may be historic buildings/structures/districts/objects eligible for the National Register of Historic Places located in the project area. However, due to the nature of the activity, it is our opinion that there will be no effect on these properties. Should the scope and/or nature of the project activities change, the Bureau for Historic Preservation should be contacted immediately.



Page 2  
May 20, 2010  
Lisa A. Sweigert

If you need further information in this matter please consult Doug McLearen at (717) 772-0925.

Sincerely,



Douglas C. McLearen, Chief  
Division of Archaeology &  
Protection

cc: DEP, Southcentral Regional Office

DCM/tmw



## Preliminary Treatment Requirements Received from DEP 1/28/2010

Scenario No.	Existing	I	II A	II B	III	IV A	IV B
Scenario Name (service area)	Dairy Lane WTP PA0247464 (local)	New Manada Creek WTP (local)	New Swatara Creek WTP (local)	New Swatara Creek WTP (regional)	Dairy Lane WTP (regional)	Dairy Lane WTP (local)	Dairy Lane WTP (regional)
Lat	40°20'51"	40°20'10"	40°19'25"	40°19'25"	40°20'51"	40°20'20"	40°20'20"
Long	76°38'40"	76°41'07"	76°39'17"	76°39'17"	76°38'40"	76°37'23"	76°37'23"
Q, mgd	0.25	0.0627	0.0852	0.5	0.5	0.25	0.5
Receiving Stream	Bow Creek	Manada Creek	Swatara Creek (south)	Swatara Creek (south)	Bow Creek	Swatara Creek (north)	Swatara Creek (north)
Stream Code	9635	9546	9361	9361	9635	9361	9361
Preliminary Treatment Requirements							
CBOD <sub>5</sub> , mg/l	25	25	25	25	20	25	25
NH <sub>3</sub> -N, mg/l	5.25	25	25	25	3	25	25
TRC, mg/l	UV	0.5/1.6	0.5/1.6	0.5/1.6	0.15/0.49	0.5/1.6	0.5/1.6
DO, mg/l	5	5	5	5	5	5	5
Fecal	200/2000	200/2000	200/2000	200/2000	200/2000	200/2000	200/2000
TP, mg/l	2	NA	NA	NA	2	NA	NA
TN, lbs/yr	M&R	0*	0*	0**	5004***	0**	0**
TP, lbs/yr	M&R	0*	0*	0**	834***	0**	0**

Calculate annual mass Chesapeake Bay loading for existing flow at existing discharge point two ways, use the most restrictive

1 TN = 6 mg/l or  $6 * 8.34 * 0.4 \text{ MGD} * 365 = 7306 \text{ lbs TN/yr}$ ; TP = 0.8 mg/l or  $0.8 * 8.34 * 0.4 * 365 = 974 \text{ lbs/yr}$

2 Current Performance:

Use 8/05 flow and existing concentrations. If you don't have existing concentrations, use 22 TN mg/l and 4 TP mg/l

Assume current performance of TP as 2 mg/l (permit limit) and 12 TN mg/l (L. Sweigert email 1/27/10)

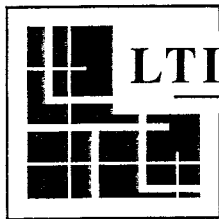
Assumes annual average flow on August, 2005 of 0.137 MGD (L. Sweigert email 1/27/10)

\* 0 allocation because new discharge

\*\* 0 allocation even though 250,000 gpd is existing, it has moved.

\*\*\*  $0.137 * 8.34 * 12 * 365 = 5004 \text{ TN lbs/yr}$  less than 7306;  $0.137 * 8.34 * 2 * 365 = 834 \text{ TP lbs/yr}$  less than 974 lbs/yr





# LTL CONSULTANTS, LTD. • ENGINEERS & CODE OFFICIALS

PO BOX 241 • ONE TOWN CENTRE DRIVE • OLEY, PA 19547  
(610) 987-9290 • FAX: (610) 987-9288

January 20, 2010

Pascal Kwedza  
PA Department of Environmental Protection  
Water Management Program  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200

Re: Preliminary Treatment Requirements  
for Act 537 Study  
East Hanover Township, Dauphin County

Dear Mr. Kwedza

As part of the Act 537 Sewage Facilities Planning process, East Hanover Township is considering multiple alternatives to meet the sewage needs of the Township. These alternatives involve the potential construction of new treatment facilities and the potential expansion of the Dairy Lane Wastewater Treatment Facility (WWTF). As required by Act 537, East Hanover Township is preparing an evaluation to determine the consistency with the Clean Streams Law, Clean Water Act, and feasibility regarding Water Quality Standards for these alternatives.

There are four potential discharge points with varying discharge rates as shown in the following table. The Roman numerals below correspond to the four (4) discharge points indicated on the enclosed maps.

Scenario	Description	Potential Discharge Rate (gpd)
I.	New Manada Creek WWTF	62,700 (AAF)
II.A	New Swatara Creek WWTF (local service)	85,200 (AAF)
II.B	New Swatara Creek WWTF (regional service)	500,000 (AAF)
III.	Dairy Lane WWTF at existing Bow Creek discharge (regional service)	500,000 (AAF)
IV.A	Dairy Lane WWTF w/Swatara Creek discharge (local service)	250,000 (AAF)
IV.B	Dairy Lane WWTF w/Swatara Creek discharge (regional service)	500,000 (AAF)



East Hanover Township respectfully requests preliminary treatment requirements for the above scenarios. These requirements are key to our decision-making process. We hope you can assist us in this matter. Please contact me at the number above if you have any questions or require more information.

Sincerely,



Lisa A. Sweigert  
LTL Consultants, Ltd.  
Water and Wastewater Department  
East Hanover Township Engineer

cc: Chris Hannum

File: M:\Engineering\East Hanover Township - 07\0507-0803 ACT 537 UPDATE\SEC VI ALT  
ANALYSIS\PTR request 012010.doc

File: W:\East Hanover\SEWER\2010\PTR request Act 537 update 012010.doc  
0507-0803



**Lisa Sweigert**

**From:** Lisa A. Sweigert [lasweigert@ltlconsultants.com]  
**Sent:** Friday, January 22, 2010 12:07 PM  
**To:** Davis, Richard  
**Subject:** East Hanover Township  
**Attachments:** PTR MAP 012210.pdf

Byron,

Attached is a 8.5 x14 color pdf with the discharge points indicated with coordinates. You may have to zoom-in to read the coordinates. Below is a table with the new flows indicated in RED for each scenario.

Alternative No.	Description	Potential Discharge Rate (gpd)
I.	New Manada Creek WWTF	62,700 (AAF) ALL NEW
II.A	New Swatara Creek WWTF (local service)	85,200 (AAF) ALL NEW
II.B	New Swatara Creek WWTF (regional service)	500,000 (AAF) HALF NEW
III.	Dairy Lane WWTF at existing Bow Creek discharge (regional service)	500,000 (AAF) HALF NEW
IV.A	Dairy Lane WWTF w/Swatara Creek discharge (local service)	250,000 (AAF) ALL EXISTING
IV.B	Dairy Lane WWTF w/Swatara Creek discharge (regional service)	500,000 (AAF) HALF NEW

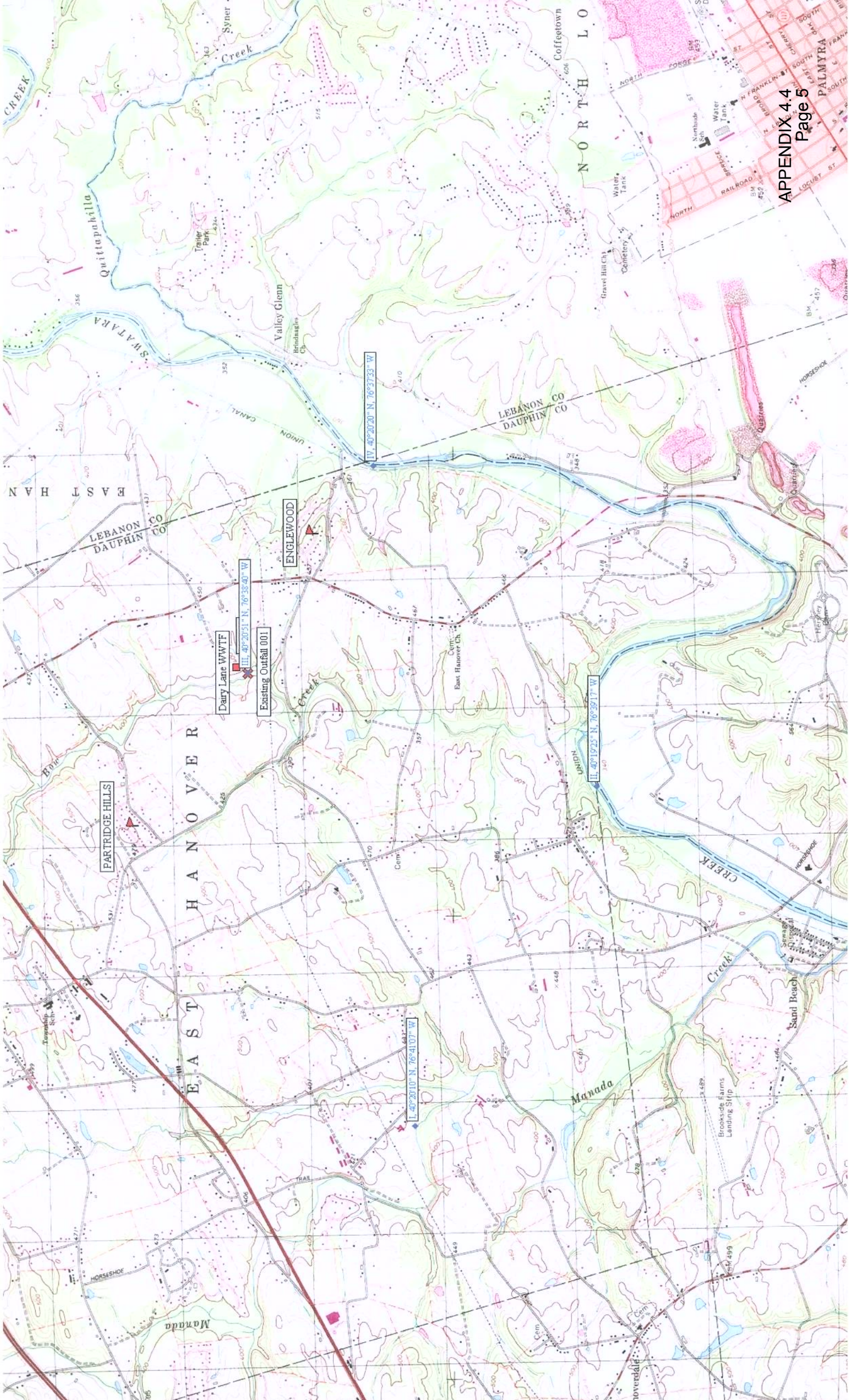
By the way, Pascal re-issued the NPDES last month, so III. should be relatively easy.

If you need anything else just let me know. Thanks.

*Lisa*

Lisa A. Sweigert  
Municipal Engineer  
LTL Consultants, Ltd.  
610-987-9290











# Area 1 - Ridge Road Extension

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (7-10' depth)	2900	LF	\$85	\$246,500
4	Furnish and Install 30" SDR-35 Sewer Line in Township Roadway and shoulder (7-10' depth)	1400	LF	\$250	\$350,000
5	Furnish and Install 30" SDR-35 Sewer Line in easement areas (7-10' depth)	800	LF	\$150	\$120,000
6	Stream Crossings (quantity measured by length of concrete encasement)	50	LF	\$200	\$10,000
7	Sewer Manholes	17	EA	\$5,000	\$85,000
8	Furnish and Install 1 1/2" LPFM (including wyes)	900	LF	\$35	\$31,500
9	Furnish and Install 6" SDR-35 Sewer laterals, all depths	1425	LF	\$50	\$71,250
10	Furnish and install 8" x 6" Wye fittings for house laterals	37	EA	\$60	\$2,220
11	Grinder Pump System, including connection of electrical hook-ups and alarms	5	EA	\$8,500	\$42,500
12	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$5,000	\$5,000
13	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	5650	LF	\$22	\$124,300
14	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	1720	LF	\$5	\$8,600
15	Permanent Roadway 1 1/2" wearing course	6950	SY	\$8	\$55,600
16	Inspection and Testing Allowance	1	Allowance	\$10,000	\$10,000
<b>SUBTOTAL =</b>				<b>\$1,189,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$297,250</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$297,250</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$1,790,000</b>	



## ***Area 1 - Install new 30" alongside 10"***

<b>Item</b>	<b>Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Extended Price</b>
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 30" SDR-35 Sewer Line in Arch Culvert	922	LF	\$500	\$461,000
4	Furnish and Install 30" SDR-35 Sewer Line in easement areas (to PS#3)	4100	LF	\$250	\$1,025,000
5	Stream Crossings (quantity measured by length of concrete encasement)	1100	LF	\$200	\$220,000
6	Upgrade PS #3	1	LS	\$150,000	\$150,000
7	Sewer Manholes	16	EA	\$5,000	\$80,000
8	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$20,000	\$20,000
9	Inspection and Testing Allowance	1	Allowance	\$15,000	\$15,000
<b><i>SUBTOTAL =</i></b>				<b><i>\$1,998,000</i></b>	
<b><i>Engineering/Admin/Legal/ROW (25%) =</i></b>				<b><i>\$499,500</i></b>	
<b><i>CONTINGENCY (25%) =</i></b>				<b><i>\$499,500</i></b>	
<b><i>TOTAL ESTIMATE =</i></b>				<b><i>\$3,000,000</i></b>	



## Area 2 - Connections on Dairy Lane

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Furnish and Install 6" SDR-35 Sewer laterals, all depths	200	LF	\$50	\$10,000
2	Furnish and install 8" x 6" Wye fittings for house laterals	8	EA	\$60	\$480
3	Landscaping Allowance, to be used as directed by Engineer for new trees, bushes, etc.	1	Allowance	\$1,000	\$1,000
4	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	100	LF	\$22	\$2,200
5	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	100	LF	\$5	\$500
6	Permanent Roadway 1 1/2" wearing course	50	SY	\$8	\$400
<b>SUBTOTAL =</b>				<b>\$14,600</b>	
<b>Engineering/Admin/Legal/ROW (5%) =</b>				<b>\$750</b>	
<b>CONTINGENCY (10%) =</b>				<b>\$1,500</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$16,850</b>	



## Area 2 - Kelly Court & Faith Road

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (10-14' depth)	5600	LF	\$95	\$532,000
4	Stream Crossings (quantity measured by length of concrete encasement)	40	LF	\$200	\$8,000
5	Sewer Manholes	17	EA	\$5,000	\$85,000
6	Furnish and Install 1 1/2" LPFM (including wyes)	500	LF	\$35	\$17,500
7	Furnish and Install 6" SDR-35 Sewer laterals, all depths	1000	LF	\$50	\$50,000
8	Furnish and install 8" x 6" Wye fittings for house laterals	24	EA	\$60	\$1,440
9	Grinder Pump System, including connection of electrical hook-ups and alarms	4	EA	\$8,500	\$34,000
10	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$5,000	\$5,000
11	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	6390	LF	\$22	\$140,580
12	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	665	LF	\$5	\$3,325
13	Permanent Roadway 1 1/2" wearing course	8150	SY	\$8	\$65,200
14	Inspection and Testing Allowance	1	Allowance	\$10,000	\$10,000
<b>SUBTOTAL =</b>				<b>\$979,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$244,750</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$244,750</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$1,470,000</b>	



## Area 2 - Shady Ln, Canal Rd & Trail Rd (WWTP)

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (10-14' depth)	8100	LF	\$100	\$810,000
4	Stream Crossings (quantity measured by length of concrete encasement)	400	LF	\$200	\$80,000
5	Sewer Manholes	24	EA	\$5,000	\$120,000
6	Furnish and Install 4" Force Main (same trench)	3700	LF	\$35	\$129,500
7	Furnish and Install 4" Force Main	400	LF	\$50	\$20,000
8	Install Air Release Valves	2	LS	\$10,000	\$20,000
9	Furnish and Install 6" SDR-35 Sewer laterals, all depths	2475	LF	\$50	\$123,750
10	Install Pump Station	1	LS	\$150,000	\$150,000
11	Install WWTP	1	LS	\$750,000	\$750,000
12	Furnish and install 8" x 6" Wye fittings for house laterals	75	EA	\$60	\$4,500
13	Grinder Pump System, including connection of electrical hook-ups and alarms	6	EA	\$8,500	\$51,000
14	Furnish and Install 1 1/2" LPFM (including wyes)	1600	LF	\$35	\$56,000
15	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$20,000	\$20,000
16	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	11700	LF	\$22	\$257,400
17	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	1000	LF	\$7	\$7,000
18	Permanent Roadway 1 1/2" wearing course	14400	SY	\$8	\$115,200
19	Inspection and Testing Allowance	1	Allowance	\$10,000	\$10,000
<b>SUBTOTAL =</b>				<b>\$2,751,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$687,750</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$687,750</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$4,130,000</b>	

APPENDIX 4.5

Page 5



## Area 2 - Shady Ln, Canal Rd & Trail Rd (PS)

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (10-14' depth)	8100	LF	\$100	\$810,000
4	Stream Crossings (quantity measured by length of concrete encasement)	400	LF	\$200	\$80,000
5	Sewer Manholes	24	EA	\$5,000	\$120,000
6	Furnish and Install 4" Force Main (same trench)	2700	LF	\$35	\$94,500
7	Furnish and Install 4" Force Main	7000	LF	\$80	\$560,000
8	Install Air Release Valves	8	LS	\$10,000	\$80,000
9	Furnish and Install 6" SDR-35 Sewer laterals, all depths	2475	LF	\$50	\$123,750
10	Install Pump Station	1	LS	\$150,000	\$150,000
11	Furnish and install 8" x 6" Wye fittings for house laterals	75	EA	\$60	\$4,500
12	Grinder Pump System, including connection of electrical hook-ups and alarms	6	EA	\$8,500	\$51,000
13	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$20,000	\$20,000
14	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	11700	LF	\$22	\$257,400
15	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	5700	LF	\$7	\$39,900
16	Permanent Roadway 1 1/2" wearing course	14400	SY	\$8	\$115,200
17	Inspection and Testing Allowance	1	Allowance	\$10,000	\$10,000
<b>SUBTOTAL =</b>				<b>\$2,543,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$635,750</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$635,750</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$3,820,000</b>	



## Area 2 - Pheasant Road

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (7-10' depth)	2350	LF	\$85	\$199,750
2	Sewer Manholes	7	EA	\$5,000	\$35,000
3	Furnish and Install 6" SDR-35 Sewer laterals, all depths	2200	LF	\$60	\$132,000
4	Furnish and install 8" x 6" Wye fittings for house laterals	22	EA	\$60	\$1,320
5	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$10,000	\$10,000
6	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	1	LS	\$105,600	\$105,600
7	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	2560	LF	\$5	\$12,800
8	Permanent Roadway 1 1/2" wearing course	5500	SY	\$8	\$44,000
9	Inspection and Testing Allowance	1	Allowance	\$5,000	\$5,000
<b>SUBTOTAL =</b>				<b>\$545,000</b>	
<b>Engineering/Admin/Legal/ROW (30%) =</b>				<b>\$163,500</b>	
<b>CONTINGENCY (35%) =</b>				<b>\$190,750</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$900,000</b>	



## Area 4 - Berry Dr w/ PS to W. Hanover Twp

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (7-10' depth)	3000	LF	\$85	\$255,000
4	Sewer Manholes	10	EA	\$5,000	\$50,000
5	Furnish and Install 6" SDR-35 Sewer laterals, all depths	725	LF	\$50	\$36,250
6	Furnish and install 8" x 6" Wye fittings for house laterals	29	EA	\$60	\$1,740
7	Install Pump Station	1	LS	\$100,000	\$100,000
8	Furnish and Install 4" Force Main	1200	LF	\$40	\$48,000
9	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$5,000	\$5,000
10	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	3350	LF	\$22	\$73,700
11	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	450	LF	\$5	\$2,250
12	Permanent Roadway 1 1/2" wearing course	4000	SY	\$8	\$32,000
13	Inspection and Testing Allowance	1	Allowance	\$5,000	\$5,000
<b>SUBTOTAL =</b>				<b>\$636,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$159,000</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$159,000</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$960,000</b>	



## Area 4 - Berry Dr w/ Grinders to W. Hanover

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 1 1/2" LPFM (including wyes)	3000	LF	\$35	\$105,000
4	Furnish and Install Grinder laterals, all depths	2900	LF	\$40	\$116,000
5	Grinder Pump System, including connection of electrical hook-ups and alarms	29	EA	\$8,500	\$246,500
6	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$25,000	\$25,000
7	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	3350	LF	\$22	\$73,700
8	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	2550	LF	\$5	\$12,750
9	Permanent Roadway 1 1/2" wearing course	4000	SY	\$8	\$32,000
10	Inspection and Testing Allowance	1	Allowance	\$5,000	\$5,000
<b>SUBTOTAL =</b>				<b>\$643,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$160,750</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$160,750</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$970,000</b>	



## Area 4 - Hunter Ln, Red Fox Ln, Mill Rd

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (10-14' depth)	8000	LF	\$100	\$800,000
4	Stream Crossings (quantity measured by length of concrete encasement)	100	LF	\$200	\$20,000
5	Sewer Manholes	29	EA	\$5,000	\$145,000
6	Furnish and Install 1 1/2" LPFM (including wyes)	800	LF	\$35	\$28,000
7	Furnish and Install 6" SDR-35 Sewer laterals, all depths	2225	LF	\$50	\$111,250
8	Furnish and install 8" x 6" Wye fittings for house laterals	65	EA	\$60	\$3,900
9	Grinder Pump System, including connection of electrical hook-ups and alarms	6	EA	\$8,500	\$51,000
10	Install Pump Station	1	LS	\$120,000	\$120,000
11	Furnish and Install 4" Force Main	1600	LF	\$65	\$104,000
12	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$10,000	\$10,000
13	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	9600	LF	\$22	\$211,200
14	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	3000	LF	\$5	\$15,000
15	Permanent Roadway 1 1/2" wearing course	11750	SY	\$8	\$94,000
16	Inspection and Testing Allowance	1	Allowance	\$10,000	\$10,000
<b>SUBTOTAL =</b>				<b>\$1,750,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$437,500</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$437,500</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$2,630,000</b>	



## Area 4 - Campbell Court & Circle Drive

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (7-10' depth)	3500	LF	\$85	\$297,500
4	Sewer Manholes	12	EA	\$5,000	\$60,000
5	Furnish and Install 6" SDR-35 Sewer laterals, all depths	825	LF	\$50	\$41,250
6	Furnish and install 8" x 6" Wye fittings for house laterals	35	EA	\$60	\$2,100
7	Install Pump Station	1	LS	\$120,000	\$120,000
8	Furnish and Install 4" Force Main	1200	LF	\$40	\$48,000
9	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$5,000	\$5,000
10	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	4000	LF	\$22	\$88,000
11	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	455	LF	\$5	\$2,275
12	Permanent Roadway 1 1/2" wearing course	5400	SY	\$8	\$43,200
13	Inspection and Testing Allowance	1	Allowance	\$5,000	\$5,000
<b>SUBTOTAL =</b>				<b>\$739,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$184,750</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$184,750</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$1,110,000</b>	



## Area 4 - Berry Dr, Hunter Ln, Red Fox Ln, Mill Rd, Campbell Ct & Circle Dr to West Hanover

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (7-10' depth)	6500	LF	\$85	\$552,500
4	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (10-14' depth)	8000	LF	\$100	\$800,000
5	Stream Crossings (quantity measured by length of concrete encasement)	100	LF	\$200	\$20,000
6	Sewer Manholes	51	EA	\$5,000	\$255,000
7	Furnish and Install 6" SDR-35 Sewer laterals, all depths	3775	LF	\$50	\$188,750
8	Furnish and install 8" x 6" Wye fittings for house laterals	129	EA	\$60	\$7,740
9	Install Pump Station	3	LS	\$120,000	\$360,000
10	Furnish and Install 4" Force Main	4000	LF	\$45	\$180,000
11	Grinder Pump System, including connection of electrical hook-ups and alarms	6	EA	\$8,500	\$51,000
12	Furnish and Install 1 1/2" LPFM (including wyes)	800	LF	\$35	\$28,000
13	Capacity Fee to West Hanover	129	EA	\$5,000	\$645,000
14	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$20,000	\$20,000
15	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	16950	LF	\$22	\$372,900
16	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	3905	LF	\$5	\$19,525
17	Permanent Roadway 1 1/2" wearing course	21150	SY	\$8	\$169,200
18	Inspection and Testing Allowance	1	Allowance	\$20,000	\$20,000
<b>SUBTOTAL =</b>				<b>\$3,717,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$929,250</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$929,250</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$5,580,000</b>	

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## Area 4 - Sycamore, Chestnut, Carlson,

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (10-14' depth)	8000	LF	\$100	\$800,000
4	Sewer Manholes	26	EA	\$5,000	\$130,000
5	Furnish and Install 1 1/2" LPFM (including wyes)	1300	LF	\$35	\$45,500
6	Furnish and Install 6" SDR-35 Sewer laterals, all depths	3000	LF	\$50	\$150,000
7	Furnish and install 8" x 6" Wye fittings for house laterals	80	EA	\$60	\$4,800
8	Grinder Pump System, including connection of electrical hook-ups and alarms	14	EA	\$8,500	\$119,000
9	Install Pump Station	1	LS	\$120,000	\$120,000
10	Furnish and Install 4" Force Main	350	LF	\$60	\$21,000
11	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$15,000	\$15,000
12	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	10260	LF	\$22	\$225,720
13	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	2630	LF	\$5	\$13,150
14	Permanent Roadway 1 1/2" wearing course	12400	SY	\$8	\$99,200
15	Inspection and Testing Allowance	1	Allowance	\$12,000	\$12,000
<b>SUBTOTAL =</b>				<b>\$1,782,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$445,500</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$445,500</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$2,680,000</b>	



# Area 4 - Sycamore Ln, Chestnut Pl, Carlson Rd, Hunter Lane, Mill Rd, Red Fox Ln, Campbell Ct & Circle Dr to south

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (10-14' depth)	20500	LF	\$95	\$1,947,500
4	Sewer Manholes	69	EA	\$5,000	\$345,000
5	Furnish and Install 1 1/2" LPFM (including wyes)	2100	LF	\$35	\$73,500
6	Furnish and Install 6" SDR-35 Sewer laterals, all depths	6050	LF	\$50	\$302,500
7	Furnish and install 8" x 6" Wye fittings for house laterals	180	EA	\$55	\$9,900
8	Grinder Pump System, including connection of electrical hook-ups and alarms	20	EA	\$8,200	\$164,000
9	Install Pump Station	2	LS	\$120,000	\$240,000
10	Furnish and Install 4" Force Main	2200	LF	\$60	\$132,000
11	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$25,000	\$25,000
12	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	24800	LF	\$21	\$520,800
13	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	4500	LF	\$5	\$22,500
14	Permanent Roadway 1 1/2" wearing course	29550	SY	\$8	\$236,400
15	Inspection and Testing Allowance	1	Allowance	\$20,000	\$20,000
<b>SUBTOTAL =</b>				<b>\$4,066,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$1,016,500</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$1,016,500</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$6,100,000</b>	

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## Area 4 - Forcemain to Dairy Lane WWTP

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Install Air Release Valves	6	LS	\$10,000	\$60,000
2	Install Pump Station	1	LS	\$200,000	\$200,000
3	Furnish and Install 4" Force Main	14800	LF	\$75	\$1,110,000
4	Stream Crossings (quantity measured by length of concrete encasement)	300	LF	\$200	\$60,000
5	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$15,000	\$15,000
6	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	13000	LF	\$22	\$286,000
7	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	1800	LF	\$7	\$12,600
8	Permanent Roadway 1 1/2" wearing course	17333	SY	\$8	\$138,664
9	Inspection and Testing Allowance	1	Allowance	\$20,000	\$20,000
<b>SUBTOTAL =</b>				<b>\$1,902,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$475,500</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$475,500</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$2,860,000</b>	



## Area 4 - WWTP on Manada Creek

Item	Description	Quantity	Unit	Unit Price	Extended Price
1	Furnish and Install 8" SDR-35 Sewer Line in Township Roadway and shoulder (7-10' depth)	700	LF	\$85	\$59,500
2	Install WWTP	1	LS	\$750,000	\$750,000
3	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$5,000	\$5,000
4	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	300	LF	\$22	\$6,600
5	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	400	LF	\$7	\$2,800
6	Permanent Roadway 1 1/2" wearing course	400	SY	\$8	\$3,200
7	Inspection and Testing Allowance	1	Allowance	\$5,000	\$5,000
<b>SUBTOTAL =</b>				<b>\$832,000</b>	
<b>Engineering/Admin/Legal/ROW (25%) =</b>				<b>\$208,000</b>	
<b>CONTINGENCY (25%) =</b>				<b>\$208,000</b>	
<b>TOTAL ESTIMATE =</b>				<b>\$1,250,000</b>	



## ***X.1 - Outfall along Earlys Mill Road***

<b>Item</b>	<b>Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Extended Price</b>
1	Bonds and Insurance	1	Lump Sum	\$15,000	\$15,000
2	Mobilization and Demobilization	1	Lump Sum	\$12,000	\$12,000
3	Install Air Release Valves	4	LS	\$10,000	\$40,000
4	Install Pump Station	1	LS	\$200,000	\$200,000
5	Furnish and Install 12" Force Main	8800	LF	\$90	\$792,000
6	Stream Crossings (quantity measured by length of concrete encasement)	50	LF	\$200	\$10,000
7	Landscaping Allowance, to be used as directed by Engineer for new trees	1	Allowance	\$15,000	\$15,000
8	Permanent Roadway (paved and/or gravel) and Shoulder restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	5800	LF	\$22	\$127,600
9	Easement Restoration, mains and laterals (not including 1 1/2" wearing course)(temporary restoration incidental)	3000	LF	\$5	\$15,000
10	Permanent Roadway 1 1/2" wearing course	7800	SY	\$8	\$62,400
11	Inspection and Testing Allowance	1	Allowance	\$15,000	\$15,000
<b><i>SUBTOTAL =</i></b>				<b><i>\$1,304,000</i></b>	
<b><i>Engineering/Admin/Legal/ROW (25%) =</i></b>				<b><i>\$326,000</i></b>	
<b><i>CONTINGENCY (25%) =</i></b>				<b><i>\$326,000</i></b>	
<b><i>TOTAL ESTIMATE =</i></b>				<b><i>\$1,960,000</i></b>	







OPTION		Alternative Description	OPTION SCHEDULE	EDU's	Estimated Cost	Current Tapping Fee / EDU	Tapping Fee Generated Revenue	Estimated Yearly Operating Costs	EXISTING TOWNSHIP SEWER				Project Cost Less				Project					
									Existing Sewer Rate	Existing Debt Service	Existing Operating Costs	Current EDUs	Future Project Cost	Future Reserve Balance	Tapping Fee and Reserve Balance	Future Sewer Rate	Future Sewer Revenue	Future Operating Cost	Existing Debt Service	Remaining Future Revenue	20-Year Debt Service	Remaining Revenue
1.A		Extend sewer to existing properties along Ridge Road and connect before crossing I-81	10	37	\$ 1,790,000	\$ 3,484	\$ 128,908	\$10,286	\$640	\$345,473	\$ 228,379	822	\$ 2,291,351	\$ 2,914,891	\$ (788,553)	\$ 1,224	\$1,184,949	\$344,300	\$358,728	\$481,920	-\$60,621	\$542,541
2.A		Connect properties along Dairy Lane as part of the Englewood Sewer Project	10	8	\$ 16,850	\$ 3,484	\$ 27,872	\$2,224	\$640	\$345,473	\$ 228,379	822	\$ 21,569	\$ 2,914,891	\$ (2,929,000)	\$ 1,224	\$1,149,449	\$333,980	\$358,728	\$456,741	-\$225,170	\$681,911
2.B		Connect Kelly Court and Faith Road to existing system in Preserve at Bow Creek Phase I	10	24	\$ 1,470,000	\$ 3,484	\$ 83,616	\$6,672	\$640	\$345,473	\$ 228,379	822	\$ 1,881,724	\$ 2,914,891	\$ (1,140,202)	\$ 1,224	\$1,169,035	\$339,674	\$358,728	\$470,633	-\$87,654	\$558,287
2.D		Install gravity mains to serve Shady Lane, Canal Road and Trail Road along with a Pump Staion to Dairy Lane WWTP	10	75	\$ 3,820,000	\$ 3,484	\$ 261,300	\$20,850	\$640	\$345,473	\$ 228,379	822	\$ 4,889,923	\$ 2,914,891	\$ 1,640,546	\$ 1,224	\$1,231,465	\$357,823	\$358,728	\$514,914	\$126,119	\$388,795
2.E		Extend proposed Partridge Hills Sewer system to Pheasant Road	10	31	\$ 900,000	\$ 3,484	\$ 108,004	\$8,618	\$640	\$345,473	\$ 228,379	822	\$ 1,152,076	\$ 2,914,891	\$ (1,901,069)	\$ 1,224	\$1,177,604	\$342,165	\$358,728	\$476,711	-\$146,147	\$622,857
4.F		Connect properties along Hunter Ln, Red Fox Ln, Mill Rd, Campbell Ct, Circle Dr, Sycamore Ln, Chestnut Pl, Carlson Rd and Crooked Hill Rd via PS to Dairy Lane WWTP	10	180	\$ 8,960,000	\$ 3,484	\$ 627,120	\$50,040	\$640	\$345,473	\$ 228,379	822	\$ 11,469,558	\$ 2,914,891	\$ 7,751,900	\$ 1,224	\$1,359,998	\$395,189	\$358,728	\$606,081	\$595,936	\$10,145
		<b>NOTE: Financing based on a term of 20-years at a rate of 4%</b> Assumed Sewer Rate Increase: 6.7% Assumed Rate of Return 3.5%																				