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VIA eFiling – **Public Version**

July 17, 2023

Rosemary Chiavetta, Secretary
Commonwealth of Pennsylvania
Pennsylvania Public Utility Commission
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120

In re: Application of Pennsylvania-American Water Company under Sections 1102(a) and 1329 of the Pennsylvania Public Utility Code, 66 Pa C.S. §§ 1102(a) and 1329, for approval of (1) the transfer, by sale, to Pennsylvania-American Water Company, of substantially all of the assets, properties and rights related to the wastewater collection and treatment system owned and operated by Towamencin Township and Towamencin Municipal Authority, and (2) the rights of Pennsylvania-American Water Company to begin to offer or furnish wastewater service to the public in the Township of Towamencin and portions of the Townships of Franconia, Lower Salford and Worcester and the Borough of Lansdale, all in Montgomery County, Pennsylvania

Docket No: A-2023-3039900

**Pennsylvania-American Water Company Responses to the
Bureau of Technical Utility Services Deficiencies – June 30, 2023**

Dear Secretary Chiavetta:

Enclosed for filing with the Commission are the Responses of Pennsylvania-American Water Company to the 66 Pa. C.S. Section 1329 Application Completeness Review of Pennsylvania-American Water Company – Wastewater Division Acquisition of Towamencin Township Wastewater System Assets at Docket No. A-2023-3039900. Please note some responses are **CONFIDENTIAL** and should be treated as such. The **CONFIDENTIAL** version of the responses will be uploaded to the Commission's SharePoint site.

Copies are being served upon the advocates in accordance with the attached Certificate of Service and in accordance with the Commission's Final Supplemental Implementation Order entered February 28, 2019 at Docket No. M-2016-2543193.

Rosemary Chiavetta, Secretary

July 17, 2023

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Re: Pennsylvania-American Water Company Responses to the
Bureau of Technical Utility Services Deficiencies dated June 30, 2023
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Thank you for your attention to this matter. If you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Teresa K. Harrold". The signature is fluid and cursive, with a large initial "T" and "H".

Teresa K. Harrold

Enclosure

cc: Certificate of Service
Sean Donnelly, Bureau of Technical Utility Services

66 Pa. C.S. Section 1329 Application Completeness Review
Pennsylvania-American Water Company – Wastewater Division
Acquisition of Towamencin Township Wastewater System Assets
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1. Checklist Item No. 12 – The Application’s Appendix A-18-b included a copy of Towamencin Township’s (Towamencin’s) rates, rules, and regulations (Towamencin’s Rates). Towamencin’s Rates, Section 127-35 indicates that “[e]xclusion from the sewer system and treatment plant of nonprocess, nonsanitary waters not requiring treatment may be required by the Township or such exclusion may be optional with the property owner if not required by the Township. When such waters are not discharged to the sewer system, sewer rentals shall be based upon total water consumption less waters not discharged to the sewer system. Waters not discharged to the sewer system may be determined from meters installed and maintained by the owner[.]”. However, the pro forma tariff supplement included in the Application’s Appendix A-12 (Pro Forma Tariff) does not include a provision that allows for the continued use of these additional water meters (Deduct Meters) for customers whose bills are determined based on water usage. Please amend the Application’s Appendix A-12 to provide a proposed tariff containing a rate equal to the existing rates of the seller at the time of acquisition, including provisions to allow for the continued use of Deduct Meters for customers whose bills are determined based on water usage.

Response: The Pro Forma Tariff provides that metered charges are “Based on Water Usage or Sewage Flows, determined at PAWC’s discretion.” PAWC applies this language as allowing for the continued use of deduct meters where necessary. See **Appendix A-12**, Supplement No. XX to Tariff Wastewater PA P.U.C. No. 16, Seventh Revised Page 11.14. Therefore, additional changes to the Pro Forma Tariff to permit the continued use of deduct meters are unnecessary.

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2. Checklist Item Nos. 12 and 18.c. – Page 11.14 of the Pro Forma Tariff identified that proposed rates include flat or service charge rates per equivalent dwelling unit (EDU). Also, Page 22 of PAWC-WD’s effective wastewater tariff defines the term EDU as “For existing customers acquired by [PAWC-WD] through a purchase or acquisition, the number of equivalent dwelling units is available at the following link: www.amwater.com/paaw”. However, the Pro Forma Tariff does not show PAWC-WD’s rates and rules to determine the number of EDUs for Towamencin customers. Please amend the Application’s Appendix A-12 to include a proposed tariff containing a rate equal to the existing rates of the seller at the time of acquisition, including PAWC-WD rates and rules for service based on EDUs (i.e., an EDU schedule).

Response: As part of PAWC’s last base rate filing, the Commission approved the following new language within the PAWC’s wastewater tariff: “For existing customers acquired by the Company through a purchase or acquisition, the number of equivalent dwelling units is available at the following link: www.amwater.com/paaw.” The purpose of this change was to include all EDU definitions for system acquisitions at this external website rather than within the Company’s tariff. Similarly, the Company will include the EDU calculation methodology for current Towamencin customers at this website. An example of the Towamencin EDU calculation methodology that will be included at the website is attached as **Attachment 2-A**. No further changes to PAWC’s Pro Forma Tariff are required.

PENNSYLVANIA-AMERICAN WATER COMPANY

Related to Section A, Rule 26. Equivalent Dwelling Units or EDU

Unit Schedule for the Towamencin service area	
Category	Units
For the purposes of residential use, the number of EDUs applicable shall consist of the total number of residential dwelling units, together with the EDUs applicable to any common-use areas calculated as set forth herein for nonresidential use. Every building or use connected to the sewer shall constitute at least one EDU.	1
For the purposes of a nonresidential use, the number of EDUs applicable to that use shall consist of the actual or estimated total gallonage discharge of wastewater at the property per day divided by 200. Every building or use connected to the sewer shall constitute at least one EDU.	1

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3. Checklist Item No. 12 – Revised Page 11.14 of the Pro Forma Tariff identified metered charges for commercial customers consisting of a service charge of \$49.16 per month plus a usage charge per 100 gallons over 6,100 gallons per month of \$0.8082. However, Ordinance No. 23-04 and the draft Towamencin Township Resolution “23 -”, provided in the Application as Appendices A-18.a.2 and A-18-a-3, respectively, do not appear to establish a commercial customer usage charge. Please either revise the Application’s Appendix A-18-a to provide evidence this commercial customer charge is in Towamencin’s current rates or Appendix A-12 to provide a proposed tariff containing a rate equal to the existing rates of the seller at the time of acquisition that does not contain the noted customer charge.

Response: Please refer to **Appendix A-18-a.3** for the establishment of the annual fixed charge of \$590, or \$49.16 per month. This charge applies to commercial customers.

Towamencin defines an EDU as 200 gallons per day and bills bi-annual for a minimum of one EDU. See Sections 127-1 and 127-35 of the Township Code (**Appendix A-18-b**).

The calculation for this EDU is as follows:

$$200 \text{ gallons per day} \times 365 \text{ days} / 2 \text{ (for bi-annual billing)} = 36,500 \text{ gallons}$$

36,500 gallons is equivalent to 4,880 cubic feet. Because Towamencin bills for a minimum of one EDU, PAWC’s rates are stated as a minimum charge to include 1/6 of the 4,880 cubic feet, or 6,100 gallons.

The usage charge per 100 gallons of usage over 6,100 gallons per month of \$0.8082 was determined as follows: \$590 annually / 2 = \$295 biannually. \$295 / 4,880 cubic feet = a rate per cubic foot of \$0.06045. This rate was converted into a 100 gallon rate by dividing by 7.48 and multiplying by 100. $\$0.06045 / 7.48 * 100 = \0.8082 per 100 gallons.

In reviewing the tariff language to respond to these deficiencies, the Company identified that a modification was needed to the Usage Charges applicable to commercial customers to accurately reflect Towamencin’s existing rates. Specifically, on Tariff Page 11.14, the usage blocks were modified to state “First 6,100 gallons per month **per EDU**” and “All over 6,100 gallons per month **per EDU**.” The revised tariff provided as **Amended Appendix A-12** incorporates this change.

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4. Checklist Item Nos. 12 and 18.a. – The Application’s Appendix A-18-a and A-18-a.1 through A-18-a-3 identified the current rates of Towamencin. However, Revised Page 11.14 of the Pro Forma Tariff included an additional special rate charge for Clemens Food Group, at \$0.7409 per 100 gallons, which is not identified in the Application’s Appendix A-18-a. If the Pro Forma Tariff is equal to the seller’s rate for Clemens Food Group at the time of acquisition, amend the Application’s Appendix A-18-a to include copies of Towamencin’s effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts for Clemens Food Group’s rate. Otherwise, amend the Application’s Appendix A-12 to provide a proposed tariff containing a rate equal to the existing rates of the seller at the time of acquisition that does not contain the noted special rate.

Response: See **Amended Appendix A-18-a.4 CONFIDENTIAL**, which includes an Agreement executed on September 22, 1988 between Towamencin Township, Upper Gwynedd-Towamencin Municipal Authority, and Hatfield Quality Meats, Inc. (Clemens).

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5. Checklist Item No. 12 – Revised Page 83 of the Pro Forma Tariff included proposed language that changes PAWC-WD’s industrial loading fee rate so that industrial waste discharge permits or other agreements may specify different Typical Domestic Pollutant Concentrations that are used to determine PAWC-WD’s industrial loading fee rate. Specifically, the Revised Page 83 of the Pro Forma Tariff added the rate language “unless otherwise specified in an IWDP or other agreement”. However, the applicability of PAWC-WD’s proposed rate change is not limited to PAWC-WD’s proposed rates for customers within the Application’s requested territory. Please amend the Application’s Appendix A-12 to provide a proposed tariff containing a rate equal to the existing rates of the seller at the time of acquisition, including provisions that limit the applicability of the proposed change in PAWC-WD’s industrial loading fee rate to PAWC-WD’s rates for customers within the Application’s requested service territory.

Response: See **Amended Appendix A-12.**

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6. Checklist Item No. 12 – Revised Page 83 of the Pro Forma Tariff included proposed language to change PAWC-WD’s industrial loading fee rate so that industrial waste discharge permits or other agreements may specify different Typical Domestic Pollutant Concentrations that are used to determine PAWC-WD’s industrial loading fee rate. Also, Towamencin established permitted pollutant concentrations for some individual customers through industrial waste discharge permits or agreements. However, the Pennsylvania Public Utility Code requires that tariffs show all rates established by the public utility. Please amend the Application’s Appendix A-12 to provide a proposed tariff containing a rate equal to the existing rates of the seller at the time of acquisition including the Typical Domestic Pollutant Concentrations for each existing permit or agreement.

Response: See **Amended Appendix A-12.**

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7. Checklist Item No. 12 – Revised Page 83 of the Pro Forma Tariff included proposed language to add a clean water discount rate that may be available for nonresidential customers with a minimum average daily flow of 300,000 gallons per day. However, clean water discount rate applicability is not limited to PAWC-WD’s proposed rates for customers within the Application’s requested service territory. Please amend the Application’s Appendix A-12 to provide a proposed tariff containing a rate equal to the existing rates of the seller at the time of acquisition including provisions that limit clean water discount rate applicability to PAWC-WD’s proposed rates for customers within the Application’s requested service territory.

Response: See Amended Appendix A-12.

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8. Checklist Item No. 12 – Revised Page 83 of the Pro Forma Tariff included proposed language that, “Typical Domestic Pollutant Concentrations are as follows unless otherwise specified in an [industrial waste discharge permit] or other agreement”. However, the Typical Domestic Pollutant Concentrations identified on Revised Page 83 do not match the pollutant concentrations and “surcharge limit” identified in Towamencin’s Rates, Sections 127-63.B. and C. Please amend the Application’s Appendix A-12 to provide a proposed tariff containing a rate equal to the existing rates of the seller at the time of acquisition including proposed Typical Domestic Pollutant Concentration values that match Towamencin’s existing pollutant concentration and “surcharge limit” values identified in Towamencin’s Rates, Sections 127-63.B. and C.

Response: See **Amended Appendix A-12.**

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9. Checklist Item Nos. 12 and 18.a. – The Application’s Appendix A-4.1 contained a response to Standard Data Request (SDR) Item No. 6, which listed several customers receiving free service from Towamencin and indicated, “Under Towamencin ownership, the [customers] listed below are not being billed. Upon closing, PAWC will begin billing these entities[.]”. Please amend the Application’s Appendix A-18-a include copies of Towamencin’s effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts to modify rates to begin billing customers identified in SDR Item No. 6 prior to closing. Otherwise, please amend the Application’s Appendix A-12 to provide a proposed tariff containing a rate equal to the existing rates of the seller at the time of acquisition.

Response: No resolution or ordinance currently exists providing free service to the customers listed in SDR Item No. 6. Instead, free service is provided as a courtesy. Therefore, PAWC will begin billing these entities at its approved tariff rates post-closing.

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10. Checklist Item No. 16.f. – The Application’s Appendix A-15-a, Towamencin Township Sewage Facilities Engineering Assessment and Original Cost (Engineering Assessment), indicated the Hollis Hills Pump Station pumps wastewater through 5,740 linear feet of four-inch force main to Towamencin’s existing gravity collection system at Manhole 533. However, this section of force main does not appear to be depicted on the map provided in the Application’s Appendix A-16-f, Location of Wastewater Assets (Confidential). Please revise the Application’s Appendix A-16-f to include the identified force main.

Response: Please see the revised **Amended Appendix A-16-f**.

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11. Checklist Item No. 16.f. – The Engineering Assessment’s Appendix A included a copy of a map entitled “Sewer System Asset Cost Study Map” (System Study Map) dated July 2022. The System Study Map depicted a section of force main located in Worcester Township near Wentz Church Road between Molly’s Country Kennels private pump station and Towamencin’s existing gravity collection system at Manhole 6.5. However, this section of force main does not appear to be depicted on the map provided in the Application’s Appendix A-16-f, Location of Wastewater Assets (Confidential). Please revise the Application’s Appendix A-16-f to include the identified force main.

Response: The force main located in Worcester Township near Wentz Church Road between Molly’s Country Kennels private pump station and Towamencin’s existing gravity collection system at Manhole 6.5 is a privately owned force main. This force main was not included in the assets owned by Towamencin in the Engineer’s Assessment.

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12. Checklist Item No. 18.a. – The Pro Forma Tariff specified on Page 15.1 wastewater plant, residential septage and commercial waste disposal rates for five Towamencin Service Area customers. However, the Application’s Appendix A-18-a does not include copies of the effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts establishing these rates. Please amend the Application’s Appendix A-18-a to include copies of Towamencin’s effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts establishing wastewater plant, residential septage and commercial waste disposal rates.

Response: Towmanecin is currently providing residential septage and commercial waste disposal service to these customers via verbal agreement. Accordingly, Towamencin sent a letter to each of these customers requesting signed confirmation of their rates. Please see **Amended Appendix A-18-a.5**.

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13. Checklist Item No. 18.a. – The Pro Forma Tariff specified on Revised Page 84 a clean water discount rate may be available for nonresidential customers with a minimum average daily flow of 300,000 gallons per day. However, the Application’s Appendix A-18-a does not include a copy of the effective ordinance, resolution, tariff, agreement, permit, and/or contract establishing this rate. Please amend the Application’s Appendix A-18-a to include copies of Towamencin’s effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts establishing the clean water discount rate.

Response: Please see **Amended Appendix A-18-a.4 CONFIDENTIAL**, which includes the Sewer Treatment Agreement dated October 27, 2015 among Towamencin Township, Towamencin Municipal Authority, and Clemens Food Group, and the related First Amendment dated October 26, 2022.

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14. Checklist Item No. 18.a. – The Pro Forma Tariff specified on Revised Page 90 a strength surcharge rate of \$0.62 per pound of BOD5 or COD, NH3-N, TP, and TSS, and \$0.868 per pound of copper and zinc. Also, Towamencin’s Rates, Section 127-63.C. noted “The strength surcharge shall be based on the operating costs for the Authority’s POTW during the previous calendar year. A cost per pound of pollutant shall be determined by dividing the total annual operating costs, [...] by the total pounds of pollutants [...] treated during the same period[.]”. However, the Application’s Appendix A-18-a does not include copies of the effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts establishing strength surcharge rates. Please amend the Application’s Appendix A-18-a to include copies of Towamencin’s effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts establishing strength surcharge rates.

Response: See Sections 127-63 and 127-64 of the Township Code (**Appendix A-18-b**) for the strength and flow surcharge formulas. Example invoices applying the formulas based on the Authority’s operating costs are attached as **Attachment 14-A CONFIDENTIAL**.

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15. Checklist Item No. 18.a. – Towamencin’s Rates, Section 127-64.A.3. stated that Towamencin’s flow surcharge rate is based on a cost per gallon “as reflected in the Discharge Permit”. However, the Application’s Appendix A-18-a does not include copies of the effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts establishing flow surcharge rates. Please amend the Application’s Appendix A-18-a to include copies of Towamencin’s effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts establishing flow surcharge rates.

Response: See Sections 127-63 and 127-64 of the Township Code (**Appendix A-18-b**) for the strength and flow surcharge formulas. Example invoices applying the formulas based on the Authority’s operating costs are attached as **Attachment 14-A CONFIDENTIAL**.

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16. Checklist Item No. 18.a. – The Pro Forma Tariff specified on Page 11.14 unmetered flat rates of \$49.16 and \$36.87 per EDU per month, and metered rates that include a service charge of \$49.16 per EDU per month and a usage charge of \$0.8082 per 100 gallons over 6,100 gallons per month. However, the Application’s Appendix A-18-a does not include a copy of the effective ordinances, resolutions, tariffs, agreements, permits, and/or contracts establishing these rates. Please amend the Application’s Appendix A-18-a to include copies of Towamencin’s effective ordinances, resolutions, tariffs, agreements, permits and/or contracts establishing unmetered flat rates of \$49.16 and \$36.87 per EDU per month, and metered rates that include a service charge of \$49.16 per EDU per month and a usage charge of \$0.8082 per 100 gallons over 6,100 gallons per month.

Response: Please refer to the response to number 3 regarding the \$49.16 monthly rate and usage rate of \$0.8082.

The \$36.87 rate applicable to Upper Gwynned Township is 75% of the rate applicable to other Towamencin customers, calculated as follows: Annual rate of \$590 (see **Appendix A-18-a-3**) x 75% / 12 months = \$36.87. See the agreement with Upper Gwynned Township (**Appendix A-25.5**, p. 5) which states that the rate is calculated using a treatment factor of 0.75.

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17. Checklist Item No. 20.b. – The Application’s Appendix A-20-b provided copies of the water quality management (WQM) and National Pollutant Discharge Elimination System (NPDES) permits for the Towamencin wastewater collection and conveyance system (Collection System) and the wastewater treatment plant (WWTP). Please provide responses to the following:
- a. Appendix A-20-b included a copy of the DEP-approved NPDES Permit No. PA0039004, effective on September 1, 2014, and expired on August 31, 2019, for the WWTP. However, the Application’s Appendix A-24-a.1, Asset Purchase Agreement (APA), Schedule 4.14 indicated a new NPDES permit was expected to be issued in 2022. Provide a copy of the current and unexpired DEP-approved NPDES Permit for the WWTP along with the DEP approval letter.
- Response:** NPDES Permit No. PA0039004, effective on September 1, 2014, and expired on August 31, 2019 is the most current NPDES permit for the WWTP.
- b. The APA’s Schedule 4.14 listed WQM Permit No. 4679446 as a permit to be transferred to the Buyer. However, the Application’s Appendix A-20-b does not appear to include a copy of WQM Permit No. 4679446. Provide a copy of WQM Permit No. 4679446.
- Response:** The reference to WQM Permit No. 4679446 in **Appendix A-20-b** was included in error. There is no WQM Permit No. 4679446 associated with Towamencin. Schedule 4.14 will be updated to correct this typo at closing.
- c. **Appendix A-20-b** included copies of Part II WQM Permit Applications dated May 3, 2023, submitted to DEP for the Hollis Hills and Milestone Pump Stations. Please provide copies of the DEP-approved WQM Permits for the Hollis Hills and Milestone pump stations along with the DEP approval letters.
- Response:** DEP is presently reviewing the Permit applications for the Hollis Hills and Milestone Pump Stations. Based on the most recent timing update from DEP, we expect these permits to be issued in July.
- d. Identify and provide a copy of the DEP-approved WQM Permit that includes the Rittenhouse Road Pump Station.
- Response:** Please see **Appendix A-20-b** which includes the WQM Permit 4687464 for the Skippack Pump Station, later renamed the Rittenhouse Road Pump Station.

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18. Checklist Item No. 20.k. – The Application’s Appendix A-20-k indicated that the Application’s Appendix A-14-a, Direct Testimony of Michael J. Guntrum, PAWC Statement No. 2 (Statement No. 2), Page 6, provided a statement quantifying the distance in miles the acquisition is from the buyer’s existing system or facilities. However, Statement No. 2 did not provide the aforementioned statement. Please provide a revised Appendix A-20-k that includes a statement quantifying the distance in miles the acquisition is from the buyer’s existing system or facilities.

Response: Please see **Amended Appendices A-20-k** and **A-14-a**.

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19. Checklist Item No. 22.a. – The Application’s Appendix A-22-a included a copy of a letter (Act 537 Plan Compliance Letter) to Towamencin prepared by William K. Dingman, P.E., Gilmore & Associates, Inc. dated May 4, 2023, regarding Towamencin’s Act 537 Plan compliance. The Act 537 Plan Compliance Letter indicated the overall Towamencin Act 537 Plan service area was last amended (2017 Act 537 Plan) by the diversion of some flows from a portion of Upper Gwynedd Township served by Towamencin to Upper Gwynedd Township, as approved by DEP in September 2017. Additionally, the Act 537 Plan Compliance Letter also indicated DEP issued approximately ten Act 537 sewage facilities planning modules for various land developments and sewer connections throughout the Towamencin sewer service area since the 2017 Act 537 Plan. Please provide responses to the following:

- a. Provide a copy of the DEP-approved 2017 Act 537 Plan that amended the Towamencin wastewater service area along with a copy the DEP approval letter and copies of the approval resolutions from the affected municipalities; and

Response: Please see **Attachment 19-A**.

- b. Provide copies of all DEP approved sewage facilities planning modules issued for the Towamencin wastewater system subsequent to the 2017 Act 537 Plan along with copies of the DEP approval letters.

Response: Please see **Attachment 19-B**.

UPPER GWYNEDD TOWNSHIP
ACT 537 SEWAGE FACILITIES PLAN - SPECIAL STUDY

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PLAN SUMMARY

INTRODUCTION

Upper Gwynedd Township (UGT or The Township) is currently served by two wastewater treatment plants (WWTP). These are the UGT WWTP and the Towamencin Municipal Authority (TMA) WWTP. The TMA WWTP was formerly known as the Upper Gwynedd Towamencin Municipal Authority (UGTMA) WWTP. UGT owns and operates the UGT WWTP. TMA owns and operates the TMA WWTP.

UGT has a sanitary sewer collection system that serves the entire Township. A ridge line runs mostly north south through UGT and divides the Township into two service areas. The ridge line starts just north of where Church Road intersects with Hancock Road and extends south to a point just west of the intersection of Broad Street and Morris Road. The UGT WWTP serves the portion of UGT that is east of this ridge line. The TMA WWTP serves the portion of UGT west of the ridge line. Reference is made to the map attached in Appendix A.

The UGT WWTP service area has two main interceptor sewer lines that collect flow. These are the Southwest Interceptor and the East Interceptor. The Kriebel Road Interceptor serves the portion of the UGT service area that flows to the TMA WWTP. Once again, reference is made to the map in Appendix A.

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A. SERVICE AREA ISSUES

UGT feels that it will better serve the needs of its residents and other customers by treating all flow from the Township at the UGT WWTP. This consolidation of flow will lead to more efficiency for UGT and is in the best interests of its residents.

B. CORRECTIVE ALTERNATIVES

UGT will physically divert a significant majority of flow in the Township that currently goes to the TMA (formerly Upper Gwynedd Towamencin Municipal Authority (UGTMA)) WWTP, to the UGT WWTP. This will require modifications to the UGT collection system and the UGT WWTP. These modifications are described in Section V.

As will be documented in this Act 537 Plan-Special Study (Special Study or Act 537 Plan), an Agreement was negotiated and finalized between UGT and Towamencin Township (TT) to divert UGT flow that currently goes to the TMA WWTP, to the UGT WWTP. In this Agreement, TT agreed to support UGT's efforts to divert flow. This Agreement was the document which provided for UGT to leave the UGTMA. The Agreement is attached in Appendix B.

C. COST OF IMPLEMENTING CORRECTIVE ACTION ALTERNATIVES

Over the next approximately four years, it is estimated that diverting UGT's flow will cost \$27,000,000 and require approximately fifteen million dollars in financing (reference is made to Section VI). However, there is significant, long term benefit that will accrue to UGT to help pay for this project.

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Very significant expenditures will be required in the future to maintain and upgrade the TMA WWTP and the Kriebel Road Interceptor, and also to meet anticipated future, stricter Pennsylvania Department of Environmental Protection (PADEP) discharge limits. UGT’s share of these costs would be significant. An independent study authorized by both UGT and TT was performed by a nationally recognized engineering consulting firm, Hazen & Sawyer. Based on this study, the UGT share of the cost is \$33,800,000. Instead of spending money at the TMA WWTP and on the Kriebel Road Interceptor, UGT will invest in its own collection system and WWTP to better serve its customers.

In addition, UGT received \$7,100,000 as part of the legal agreement included in Appendix B which will help pay for the Flow Diversion project.

D. MUNICIPAL COMMITMENT

As stated above, UGT has finalized a legal agreement with TT to provide for the flow diversion project. UGT is fully committed to this project. UGT is making a commitment to adopt annual budgets and secure the funding necessary to successfully implement the project. UGT plans on a bond issue to help finance the project.

E. IMPLEMENTATION SCHEDULE

The project schedule is attached as Appendix C. This schedule includes all significant milestones and incorporates all regulatory and other outside entity approval.

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F. AGENCY AND PUBLIC COMMENT DOCUMENTATION

UGT will make sure that all required public and agency comments are solicited. This includes a 30 day public comment period, comments from the Montgomery County Planning Commission and Health Department, and the UGT and TT Planning Commissions. Evidence of soliciting comments will be provided including Proof of Publication for the public comment period. UGT will address all comments and will include both the comments and responses to comments prior to submission to the PADEP. After addressing comments, UGT and TT will adopt resolutions prior to sending the completed Special Study to the PADEP for review and approval.

G. REFERENCE TO APPENDICES OF SUPPORTING DOCUMENTATION

The following required supporting documentation has been included in Appendices to this Report:

- Appendix D - Montgomery County Planning Commission and Health Department notification
- Appendix E - UGT and TT Planning Commissions notification
- Appendix F - Proof of Publication of Public Notice
- Appendix G – Agency and Public Comments and the municipal response to comments
- Appendix H - Original signed and sealed Resolutions by UGT and TT
- Appendix I – PADEP Act 537 Plan Content Checklist

Please note that the documentation for Appendix G and Appendix H will not be available until after the comment periods.

I. PREVIOUS WASTEWATER PLANNING

I.A. SEWAGE FACILITIES PLANNING

In order to establish wastewater facility planning objectives and needs, a review of previously completed wastewater planning information is necessary. In addition, existing and proposed wastewater treatment planning and projected growth for the service area must be considered.

Previous wastewater planning for Upper Gwynedd Township has included previous Act 537 Plans, two Act 537 Plan Special Studies, various Sewage Facilities Planning Modules for individual development projects, annual Chapter 94 Wasteload Management Reports, and a Corrective Action Plan (CAP).

The most recent Act 537 document on record is the Act 537 Plan - Special Study done as part of UGT's CAP. This Special Study was published for public comment in June 2016 and was submitted to PADEP in August 2016 for review and approval.

This Act 537 Plan - Special Study focuses on the Flow Diversion project which will divert flow from UGT that currently goes to the TMA WWTP, to the UGT WWTP.

II. PHYSICAL DESCRIPTION OF PLANNING AREA

II.A PLANNING AREA

Sewage collection in Upper Gwynedd Township is delineated into two service areas. (Refer to Appendix A). The service area east of the ridge line flows to the UGT WWTP. Flow to the west of the ridge line flows to the TMA WWTP.

A significant majority of the flow that currently goes to the TMA WWTP is proposed to be diverted to the UGT WWTP. The service area east of the ridge line will continue to flow to the UGT WWTP. Flow from the service area west of the ridge line is proposed to be diverted to the UGT WWTP.

II.B WETLANDS AND 100 YEAR FLOOD PLAIN

The diversion of flow that currently goes to the TMA WWTP, to the UGT WWTP will require two pump stations and two force mains. This will be described in greater detail in Section V. The proposed pump stations and force main routes are shown in Appendix A and Appendix J.

II.B.1 WETLANDS

Construction of the force main in the area adjacent to Musket Drive and in areas between North Wales Road and the UGT WWTP is expected to temporarily disturb existing wetlands. When the design is being prepared, a formal wetlands delineation for all disturbed areas will be performed. Any construction activity disturbing wetlands will be

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performed in accordance with the Permit conditions issued by the Montgomery County Conservation District. Construction will be done while minimizing the impact to wetlands. Wetlands will be restored after construction is completed to minimize impact on the environment.

II.B.2 100 YEAR FLOOD PLAIN

The pump stations will be constructed outside the 100 year flood plain. Some force main construction will occur within the flood plain. Any manholes located within the flood plain will have water-tight covers or will be raised to a height above the 100 year flood plain elevation.

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III. EVALUATION OF EXISTING WASTEWATER FACILITIES

III.A UPPER GWYNEDD TOWNSHIP WASTEWATER TREATMENT FACILITIES

Domestic and industrial wastewater generated within Upper Gwynedd Township is treated at the Upper Gwynedd Township Wastewater Treatment Plant and the Towamencin Municipal Authority Wastewater Treatment Plant.

The approximate dividing line for the two service areas within UGT is located on a ridge line shown in Appendix A. The flow east of the ridge line flows to the UGT WWTP and the flow to the west of the ridge line flows to the TMA WWTP. This Special Study includes a description of only the UGT WWTP. A flow schematic of the existing UGT WWTP is included in Appendix K.

The WWTP includes the following treatment unit operations:

- Headworks
- Flow Equalization
- Primary Clarification
- Activated sludge secondary treatment
- Tertiary phosphorus treatment
- Secondary clarification
- UV disinfection

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The UGT WWTP has adequate capacity to handle the existing flow. Adequate capacity also exists for projected, future growth from new development. However, additional capacity will be needed for the Flow Diversion. This will be discussed further in Sections IV and V.

Using flow data from the UGT 2015 Chapter 94 report, the current, available capacity is 0.803 MGD and the projected five year future, available capacity is 0.643 MGD. The available capacity does not factor in capacity needed for the flow diversion.

There have been no operating problems with the UGT WWTP. There is no expansion or upgrade of treatment processes currently in progress. There will be treatment plant modifications that are needed to handle the flow being diverted. This will be discussed in Sections V and VI.

UGT WWTP

Location:	Township Line Road west of Swedesford Road Upper Gwynedd Township
NPDES Permit No.:	PA 0023256
Clean Streams Law Permit No.	WQM Permit #4691420
Receiving Stream & Classification:	Wissahickon Creek; TSF (Trout Stocking) MF (Migratory Fishes)
Hydraulic Design Capacity:	6.5 Million Gallons Per Day (MGD)

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Annual Average Flow for Effluent

Limit Calculations: 5.7 MGD

A complete copy of the current NPDES permit for the Upper Gwynedd WWTP is included in Appendix L.

III.B UPPER GWYNEDD TOWNSHIP COLLECTION SYSTEM

The UGT collection system serves the entire Township. As stated earlier, UGT is currently served by two wastewater treatment plants. The portion of the UGT collection system that flows to the TMA WWTP is located west of the ridge line. The portion of the collection system that flows to the UGT WWTP is located east of the ridge line. The UGT collection system is located entirely within the Township and is owned by Upper Gwynedd. Reference is made to Appendix A which includes the UGT Collection System.

III.B.1 UGT WASTEWATER TREATMENT PLANT SERVICE AREA

The UGT WWTP service area is served by two main interceptors.

1. The Southwest Interceptor (known as the Northwest Interceptor north of Sumneytown Pike) service area includes the central and southwestern portions of the Township and includes flow from North Wales Borough and portions of Worcester, Whitpain, and Montgomery Townships. The Southwest Interceptor starts north of Sumneytown Pike as an

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18” pipe. It changes to a 24” pipe once it crosses Sumneytown Pike and then gradually increases in size until it becomes a 42” sewer line before connecting to the UGT WWTP.

Most flow through the Southwest Interceptor is by gravity. There are also several pump stations which are used to get flow to this interceptor.

2. The East Interceptor service area serves the eastern portion of the Township and a small portion of Lower Gwynedd Township. Wastewater from a portion of the Foulkeways community in Lower Gwynedd Township is pumped via a force main to this interceptor. The East Interceptor starts out as a 10” sewer line, increases in size to a 15” line, and finally to an 18” sewer line. The East Interceptor flows to the Southwest Interceptor just upstream of where the Southwest Interceptor connects with the UGT WWTP.

III.B.2 TMA WASTEWATER TREATMENT PLANT SERVICE AREA IN UGT

The TMA service area in UGT is served by the Kriebel Road Interceptor (KRI). All flow from UGT to the TMA WWTP is by gravity.

The KRI starts in UGT, north of Sumneytown Pike and east of Route 363 (Valley Forge Road). The KRI starts as a 10” pipe and changes to a 15” pipe just before it crosses Sumneytown Pike. Once the KRI crosses Route 363, wastewater from Towamencin Township flows to the KRI. The pipe increases in size to 20” before ending at the TMA WWTP.

III.B.3 COLLECTION SYSTEM DIVERSION AREAS

There are four points where the flow from UGT crosses Valley Forge Road (Route 363) from UGT into TT. These four crossing points are shown in Appendix A on the UGT Collection System map.

The first crossing point is just south of the Sunney Forge Shopping Center located at the corner of Sunneytown Pike and Valley Forge Road. This crossing point contains approximately eighty to eighty five percent (80-85%) of the total flow from UGT to the TMA WWTP.

The second crossing point is at Jacks Lane. This contains approximately six percent (6%) of the total flow from UGT to the TMA WWTP.

The third crossing point is located at Anders Road. This contains the smallest amount of flow of the four crossing points, approximately one percent (1%) of the total flow.

The fourth crossing point is located just north of the Pennsylvania Turnpike bridge on Valley Forge Road. This crossing point contains approximately eleven percent (11%) of the total flow.

Flow from the first and the fourth crossing points is what is being proposed to divert to the UGT WWTP.

III.B.4 COLLECTION SYSTEM ISSUES

Sections of the UGT collection system that flow to the UGT WWTP and the TMA WWTP have experienced Sanitary Sewer Overflows (SSO) in the past. UGT has been working on reducing Infiltration & Inflow (I/I) for over 10 years. During this time, UGT has greatly reduced the quantity of I/I entering the system and has also greatly reduced the number of SSO. In fact, SSO have been eliminated at certain manholes that previously experienced SSO. The work done by UGT to improve the operation of its collection system is described in detail in a Corrective Action Plan (CAP) that UGT submitted to the PADEP. The most recent update was submitted to PADEP in February 2016. A copy of the UGT CAP is included in Appendix M.

In addition to the CAP submitted by UGT, TMA submitted two CAPs to the PADEP to address SSO issues in the Kriebel Road Interceptor and the TMA WWTP Influent Pump Station. This is relevant to UGT because the service area located in UGT that flows to the TMA WWTP flows through the KRI. The KRI has also experienced SSO. TMA is working on reducing I/I in the KRI and the TT collection system to work towards elimination of SSO in the KRI and TT collection system.

Diversion of UGT flow from the KRI and the TMA WWTP will greatly reduce the hydraulic loading on the KRI and will also greatly reduce, if not eliminate, SSO on the KRI. This is a significant environmental benefit associated with UGT diverting flow.

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IV. FUTURE GROWTH AND LAND PLANNING

IV.A EXISTING PLANNING

As stated in Section I, previous wastewater planning for Upper Gwynedd Township has included previous Act 537 Plans, two Act 537 Plan Special Studies, various Sewage Facilities Planning Modules for individual development projects, annual Chapter 94 Wasteload Management Reports, and a Corrective Action Plan.

The most recent Act 537 document on record is the Act 537 Plan – Special Study done as part of UGT’s CAP. This Special Study was published for public comment in June 2016 and was submitted to PADEP in August 2016 for review and approval.

IV.B GROWTH

Growth and new development in Upper Gwynedd Township are controlled and regulated by land use and zoning regulations. A copy of the current Upper Gwynedd Township Zoning map is included in Appendix N.

Upper Gwynedd Township is primarily built out and there is not much land available for development. There is, however, some development that is currently in progress and other development being planned in the future. Current and future development in UGT is contained in the Connection Management Plan (CMP) included in Appendix O. The CMP is a summary of existing and future development in the entire UGT service area, delineated by the individual

interceptor to which a particular development would flow. The CMP does not include the flow being diverted. This issue is addressed separately.

IV.B.1 EXISTING GROWTH

As described earlier, UGT is served by three main interceptors. The Southwest and East Interceptors currently flow to the UGT WWTP. The western section of the Township that flows to the TMA WWTP is served by the Kriebel Road Interceptor.

The CMP includes development in all three interceptor service areas. The CMP includes the name of the development, the number of connections (EDUs), the state of approval in the PADEP planning process, and the time frame for connection.

The CMP includes the following growth in each of the three interceptor service areas:

- East Interceptor – 50 EDUs
- Southwest Interceptor 32 - EDUs
- Kriebel Road Interceptor – 40 EDUs

The total existing growth is 122 EDUs. Using the UGT Act 537 flow number per EDU, the total projected flow is 28,914 gallons per day (GPD).

IV.B.2 FUTURE GROWTH

The CMP also includes other potential development projects that are not included in the previous section above because there are no plans at this point for these projects to request connection to the UGT system. However, for purposes of being conservative, the following is a more detailed discussion of these other projects with no near term plans to connect to the UGT system.

SOUTHWEST INTERCEPTOR

The Southwest Interceptor potential projects shown in yellow in the CMP include 1,203 potential EDUs (miscellaneous on lot systems are included in the 40 EDUs above). The Merck-Phase 5, Hancock Road, and Old Church Road projects are not being included because it is not felt that these EDUs will be connected in the next five years, if at all. The EDUs listed for Montgomery Township and Worcester Township are based on the legal agreements that UGT has with these two neighboring municipalities. At this point there are no new developments from Montgomery Township that are projected to request connection to UGT in the next five years. Once again, in the interest of being conservative, 50 EDUs are included for purposes of evaluating the capacity of the UGT WWTP.

KRIEBEL ROAD INTERCEPTOR

The CMP shows a total of 92 EDUs that are shown in yellow (the miscellaneous on lot systems are already included in the 40 EDUs listed above in Section IV.B.1 for the KRI). The 92 EDUs include the three Martin properties plus 20 EDUs for Lehigh Valley Dairy.

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The total for future growth is 142 EDUs. Using the UGT Act 537 flow number per EDU, the total projected flow is 33,654 gallons per day (GPD).

IV.B.3 ULTIMATE BUILD OUT

As has been described above, there is the potential for additional EDU connections that are not included in Sections IV.B.1 and IV.B.2, but are included in the CMP. The additional build out EDUs are located in the Southwest Interceptor service area. These additional EDUs include the following:

- Old Church Road - 1 EDU
- Hancock Road -50 EDUs
- Worcester Township - 490 EDUs
- Montgomery Township -10 EDUs
- Merck Building 5-652 EDUs

The total of these ultimate build out EDUs is 1,203 EDUs. Regarding Merck and Montgomery Township, it is highly unlikely that these will be connected in the next five years.

Merck has already been allocated capacity that is not being used. This available capacity is already factored into the UGT WWTP available capacity in Section III.A. Even if Merck connected all of the 652 EDUs (154,524 GPD), Merck’s unused, reserve capacity would still be over 1,500,000 GPD.

IV.B.4 GROWTH SUMMARY

The total for the existing (122 EDUs) and future (142 EDUs) growth is 264 EDUs. Using the Act 57 flow number of 237 GPD, the total projected flow for the next five years is 62,568 GPD. This growth is accounted for in the UGT Chapter 94 report. The current and five year available capacities referenced in Section III.A already reflect the 62,568 GPD of growth.

If the ultimate buildout potential connections from Old Church Road, Hancock Road, and Worcester Township are included, this is another 541 EDUs. However, 385 of the Worcester EDUs and 30 of the Hancock Road EDUs are already factored into the available capacity based on the 2015 Chapter 94 report. Therefore, the additional EDUs from ultimate build include Old Church Road (1), Hancock Road (20), and Worcester (105) which is 126 EDUs. This equates to 29,862 GPD. In addition, it is also noted that Montgomery Township has approximately 120,000 GPD of unused capacity that is included in the ultimate build out flow projection.

Therefore, the projected flow for ultimate build out is 29,862 GPD plus 120,000 GPD which equals 149,862 GPD. For purposes of this Special Study, to be conservative, the flow being used for ultimate build out, future growth is 250,000 GPD

As stated above in Section III.A, the UGT WWTP has current, available capacity of 803,000 GPD and a five year future, available capacity of 643,000 GPD. Subtracting 250,000 GPD leaves the UGT WWTP with 393,000 GPD of future, available capacity. Therefore, there is

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adequate capacity to accommodate the projected ultimate build out. UGT wants to maintain this capacity, in addition to the capacity needed for the flow diversion.

The additional capacity needed for the Flow Diversion project is addressed in Section V.A.

V. ALTERNATIVES FOR WASTEWATER DISPOSAL FACILITIES

There are two alternatives for Upper Gwynedd Township to treat flow generated in the western part of the township that currently flows to the TMA WWTP. The best and preferred alternative is for UGT to divert a significant majority of flow that currently flows to the TMA WWTP, to the UGT WWTP. The second alternative is to continue to have UGT wastewater treated at the TMA WWTP. The following is a discussion of the two alternatives.

V.A DIVERT FLOW TO UGT WWTP

The UGT Flow Diversion project will divert a significant majority of wastewater generated in Upper Gwynedd Township and currently conveyed to the TMA WWTP, to the UGT WWTP. The average annual daily flow planned on being diverted is approximately 1.05 MGD, inclusive of 0.1 MGD Merck reserve capacity at the TMA WWTP. The remaining flow that will continue to go to the TMA WWTP is 0.12 MGD.

The Flow Diversion project will require additional capacity at the UGT WWTP as well as two pump stations and two force mains to convey the diverted wastewater to the UGT WWTP.

V.A.1 WASTEWATER TREATMENT PLANT

The current permitted capacity of the UGT WWTP is 5.7 MGD average annual daily flow and 6.5 MGD maximum monthly flow. Therefore, additional capacity needs to be added to the UGT WWTP to handle the increase in both average annual flow and maximum monthly flow. Once again, it is noted that the additional capacity needed for the Flow Diversion project is in addition to the capacity discussed in Section IV.B.4.

The existing UGT WWTP is described in Section III.A. In order to accommodate the flow to be added with the flow diversion, additional capacity for several unit operations needs to be provided.

The unit operations requiring additional capacity are as follows:

- Influent pumping
- Headworks
- Secondary clarification
- UV Disinfection
- Effluent pumping

The following provides more detail on the UGT WWTP modifications needed to treat the additional flow being diverted.

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Wastewater Treatment Plant Capacity

The WWTP is presently rated for an average annual flow of 5.7 MGD, a hydraulic design capacity of 6.5 MGD, a peak hour flow of 15 MGD and an organic design loading of 10,842 lbs. As part of the flow diversion project, Upper Gwynedd Township will be requesting an average annual flow of 7.0 MGD, a hydraulic design capacity of 8.0 MGD, a peak hour flow of 22.5 MGD and an organic design loading of 11,676 lbs. Note that the peak hour will be based on the combined hydraulic design capacity of the two pump stations.

Appendix K identifies the proposed modifications at the Upper Gwynedd WWTP.

Modifications at Headworks (Influent) Building

The existing Auger Monster will be replaced with a new screen. 20 MGD will be able to flow through the two indoor screens (one existing and one new), grit chambers and 24-inch parshall flume. Flows in excess of 20 MGD will flow by gravity to the existing screen outside the Headworks Building. The parshall flume can be calibrated up to 21.39 MGD. To measure all peak flows, a second flow meter will be installed upstream of the headworks building for utilization when flows exceed the rated capacity of the existing parshall flume. Additional grit removal equipment is not proposed because any flow not proceeding through the existing grit removal units will occur after the first flush has entered the WWTP and all that flow will proceed into primary clarifiers.

The new force main will connect into the existing headworks.

Modifications to Influent Pumping

Presently, the WWTP can pump 19 MGD with one (the largest) pump out of service. The influent pumping capacity will be increased by 5 MGD to convey the anticipated peak instantaneous flow.

Modifications to the Aeration Tanks and Clarifiers

The aeration tanks have adequate capacity to treat the projected organic load.

An additional circular clarifier similar to the two existing 80' diameter circular clarifiers is proposed to treat peak flows from Aeration Tanks 3 through 6.

Modifications to Effluent Disinfection

The WWTP presently has two parallel channels with UV light disinfection. Each channel is capable of disinfecting in excess of 10 MGD. A third parallel channel with a capacity of 10 MGD is proposed for disinfecting peak flows.

Modifications to Effluent Pumping

Each existing effluent pump can pump 8.55 MGD. There are four pumps, so the capacity of the pump station with one pump out of service is 25.7 MGD. This exceeds the anticipated peak hour flow. The control panel and wiring do allow all four pumps to be operated for a capacity in excess of 34 MGD, which far exceeds any foreseeable

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peak instantaneous flow. If a pump was out of a service, a portable self-priming pump could be placed at the effluent pump station.

Modification of the outfall pipe is anticipated to incorporate a second effluent flow meter to be utilized for measuring peak flows in excess of the rated capacity of the existing effluent flow meter.

Physical space is available at the existing WWTP to add the additional facilities required at the WWTP.

UGT proposes an annual average daily flow of 7.0 MGD and a maximum monthly flow of 8.0 MGD. The 7.0 MGD annual average daily capacity is 1.3 MGD more than currently exists. The 1.3 MGD figure includes 0.95 MGD of existing UGT flow being diverted from the TMA WWTP, plus 0.1 MGD of Merck reserve capacity at the TMA WWTP, plus 0.25 MGD of growth as summarized in Section IV.B.4.

As noted in the previous paragraph, the annual average flow being diverted is 0.95 MGD from the two crossing points referenced. For the other two crossing points at Jacks Lane and Anders Lane, the flow that will continue to flow to the TMA WWTP will be 0.11 MGD and 0.01 MGD, respectively. The total remaining flow from UGT to the TMA WWTP will be 0.12 MGD.

V.A.2 COLLECTION SYSTEM

The flow currently generated in UGT flows to the TMA WWTP by gravity. Therefore, to divert the flow to the UGT WWTP requires pump stations. As discussed in Section III.B.3, there are four points where flow from UGT crosses Valley Forge Road into Towamencin

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Township. The flow from two of the four crossing points is being diverted. These are the points located just south of the Sumney Forge Shopping Center at the corner of Sumneytown Pike and Valley Forge Road and just north of the Pennsylvania Turnpike Northeast Extension on Valley Forge Road. Approximately 93% of the total flow that currently flows to the TMA WWTP is contained in these two crossing points.

V.A.2.1 PUMP STATIONS

The flow from each of the two crossing points from which flow will be diverted requires pump stations to pump the flow to the UGT WWTP. These pump stations are shown in Appendix J. The pump stations will be hereinafter referred to as the Valley Forge Road North (VFRN) Pump Station (just south of the Sumney Forge Shopping Center) and the Valley Forge Road South (VFRS) Pump Station (just north of the Turnpike). The VFRS Pump Station will be located in Towamencin Township.

The VFRN Pump Station will have a hydraulic design capacity of 6.0 MGD. The VFRS Pump Station will have a hydraulic design capacity of 1.5 MGD.

UGT has acquired the property needed for both the VFRN Pump Station and the VFRS Pump Station.

A list of all easements required for pump station and force main construction is included in Appendix J.

V.A.2.2 FORCE MAINS

The two pump stations will pump flow through separate force mains. Appendix A and Appendix J show the route of each of the two force mains.

The force main route from the VFRN Pump Station will be located mostly in existing Township easements. The force main route shown in Appendix A and Appendix J indicates the sections of the force main in private property and in existing Township easements. There is only a relatively small section of the force main that runs through private property and requires easements from the property owners. This force main is anticipated to be at most 24", but portions may be 20" diameter pipe.

As with the VFRN Pump Station, the VFRS Pump Station uses mostly existing Township easements. This force main is anticipated to be an 8" diameter pipe.

The Township will obtain easements for the force mains, where necessary, through agreements with property owners or, where necessary, by eminent domain proceedings.

To reduce construction costs, the two force mains combine on Garfield Avenue. The combined force main then continues to the UGT WWTP. This force main is anticipated to be at most 24", but portions may be 20" diameter pipe.

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The capacity of the force main from the VFRN Pump Station is 6.0 MGD. The capacity of the VFRS Pump Station is 1.5 MGD. The capacity of the force main that will handle the combined flow is 7.5 MGD.

We also note that UGT will continue with its I/I reduction program to reduce the amount of flow that currently flows to the UGT WWTP and the flow that will be diverted.

UGT's I/I program is described in detail in the UGT CAP attached as Appendix M. We note that the existing UGT collection system will not be used to convey the flow being diverted.

V.B CONTINUE TREATMENT AT TMA WWTP

The other option is effectively to do nothing and have UGT flow continue to be treated at the TMA WWTP. This option was determined to not be beneficial to UGT.

V.C LEGAL AGREEMENT TO DIVERT FLOW

Upper Gwynedd Township and Towamencin Township discussed and evaluated diverting flow for several years. The product of these discussions was execution of a legal agreement which provides for UGT to divert flow. Both Townships are party to this legal agreement. We note that the agreement does provide for continuing to treat UGT flow at the TMA WWTP should circumstances arise which would prevent flow diversion from occurring. UGT has determined that diverting flow is the best option and is proceeding with this option.

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A copy of the legal agreement is included in Appendix B.

We make note of the fact that even with the Flow Diversion option, which UGT has chosen to implement, a small percentage of UGT wastewater will continue to be treated at the TMA WWTP. Diverting all flow was determined to not be cost effective or beneficial to UGT and its rate payers.

VI. EVALUATION OF WASTEWATER DISPOSAL ALTERNATIVES

As stated in Section V, Upper Gwynedd Township has chosen the alternative to divert flow from the TMA WWTP to the UGT WWTP. As will be discussed in this section, it has been determined that diverting flow is the most cost effective and beneficial option for UGT to pursue.

VI.A CONSISTENCY DETERMINATION AND RESOLUTION

As demonstrated throughout this Act 537 Plans – Special Study, the proposed alternative to divert flow is consistent with the following:

- **Clean Streams Law**-The Flow Diversion project will likely eliminate SSO from the Kriebel Road Interceptor and reduce the environmental impact of the SSO. UGT currently complies with its NPDES permit and construction of the additional facilities at the UGT WWTP will continue to allow UGT to maintain NPDES permit compliance after the flow is diverted

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- **Clean Water Act-** UGT currently complies with its NPDES permit and construction of the additional facilities at the UGT WWTP will continue to allow UGT to maintain NPDES permit compliance after the flow is diverted
- **Municipal Wasteload Management Plans-**The additional facilities proposed for construction at the UGT WWTP will provide for UGT to treat the additional flow and loading resulting from the Flow Diversion project and maintain NPDES permit compliance.
- **UGT Corrective Action Plan-**The Flow Diversion project will improve operation of the UGT collection system by likely eliminating SSO on the Kriebel Road Interceptor and in the UGT collection system that feeds into the Kriebel Road Interceptor. The new force mains will be constructed using the latest technology and construction methods to minimize I/I in the new system.
- **UGT Chapter 94 Report-** The additional facilities proposed for construction at the UGT WWTP will provide for UGT to treat the additional flow and loading resulting from the Flow Diversion project and maintain NPDES permit compliance.
- **Comprehensive Plans developed under PA Municipalities Planning Code-**The Flow Diversion project is consistent with all Township planning documents.
- **Anti-degradation Requirements of Chapters 93, 95 and 102-**The additional facilities being constructed at the UGT WWTP will provide for continued NPDES permit compliance.
- **State Water Plan-**The additional facilities will continue to provide for discharge of a high quality effluent discharging to the Wissahickon Creek.

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- **PA Prime Agricultural Land Policy**-This is not applicable to this project.
- **Plans adopted under the Storm Water Management Act**-All construction work for the WWTP, pump stations, and force mains will be in accordance with UGT and Montgomery County Storm Water Management Plans.
- **Wetland Protection under Chapter 105**-A wetlands delineation for the project is being performed. The construction will be done in a manner to comply with regulatory requirements, minimize the impact to wetlands, and provide for wetlands restoration.
- **Pennsylvania Natural Diversity Inventory (See Appendix P)** The PNDI for this project has already been performed and is included in Appendix P. No known conflicts were found.
- **Pennsylvania Historic Preservation Act**-This project will not have any impact related to this act.

VI.B ALTERNATIVE DISCUSSION

The following is a discussion of the alternatives evaluated:

- a. Upper Gywnedd Township diverts approximately 950,000 gallons per day (0.95 MGD) that currently flows to the TMA WWTP, to the UGT WWTP

UGT diverting flow from the TMA WWTP to the UGT WWTP is the recommended alternative in this Act 537 Plan – Special Study. It is consistent with all the items listed in Section VI. A for the following reasons:

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- The existing UGT WWTP has adequate capacity to handle the build out for all development included in the Connection Management Plan and as discussed in Section IV.B.4. The 0.95 MGD being diverted will require additional capacity at the existing UGT WWTP. UGT will construct the facilities necessary to handle the average annual and peak flows. This is discussed in Section V.A.1.
Flow diversion also requires that two pump stations and two force mains be constructed to divert the flow that currently goes to the TMA WWTP, to the UGT WWTP. The property for both of the pump stations has already been acquired. This is discussed further in Section V.A.2
- The proposed force main routes utilizes mostly existing Township rights of way. There are very few additional permanent easements required. The required easements are listed in Appendix J. The largest easement will be through Wissahickon Valley Watershed Association (WVWA) property. UGT has already met with the WVWA and they are supportive of the Flow Diversion project. We note that UGT already has sewer lines in WVWA property that were previously negotiated.
- The proposed force main routes involve a minimal amount of environmental impact and construction on private property.
- All permits and approvals will be obtained for construction of the WWTP facilities, the dedicated force mains, and the two pump stations.

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- Flow Diversion will greatly reduce the hydraulic loading in the Kriebel Road Interceptor. In turn, this will greatly reduce, if not eliminate, the SSO that have occurred in the past on the KRI.
- The additional flow being diverted to the UGT WWTP will provide significant economies of scale at the UGT WWTP and will reduce rate increases for UGT customers that could occur in the future.
- Flow Diversion will give UGT control over almost all of the wastewater treatment needs of the UGT community.
- The alternative to divert flow will be supportive of growth in UGT. Although UGT is mostly built out, there is growth that is projected. In addition, should certain existing properties be re-developed this would create additional growth. In the UGT service area that flows to the TMA WWTP, there is a connection prohibition due to SSO on the KRI. By diverting flow UGT will construct the new pump stations and force mains with adequate capacity to likely eliminate SSO in the new system, eliminate the connection prohibition, and facilitate future growth in UGT.
- Several years of negotiation went into the legal agreement to provide for UGT to divert flow. This required considerable time and effort on the part of both UGT and TT. All of this led to UGT determining that diverting flow was the best alternative for UGT.

We also note that UGT diverting flow will provide the TMA with the opportunity to better serve their customers in the future. Given the future facilities that will be

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needed at the TMA WWTP to upgrade the WWTP and meet stricter, future permit limits, TMA will be able to tailor the size of the new facilities to its future customer base.

- b. UGT does nothing and UGT flow that is currently treated at the TMA WWTP will continue to be treated there.

Although this alternative is feasible and is addressed in the legal agreement providing for UGT to divert flow, it does not support the long term best interests of Upper Gwynedd Township and its rate payers for a number of reasons:

- UGT will continue to not have control over a significant portion of the wastewater treatment needs of the UGT community
- Without a significant expense to increase the capacity of the KRI, SSO would likely continue to occur. This would continue to result in regulatory problems with the PADEP.
- The project is economically beneficial to UGT in the long run. This is discussed further in Sections VI. D and VI. E below.

VI.C ALTERNATIVE EVALUATION TO APPLICABLE STANDARDS

All proposed construction for the UGT WWTP, the two new pump stations, and the new force mains will be in accordance with the Upper Gwynedd Township “Construction

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Repair and Replacement Requirements for Sanitary Sewers and Appurtenances and Detail Drawings”, dated October 2016, and the Pennsylvania Department of Environmental Protection “Domestic Wastewater Facilities Manual”, 362-0300-001, October 1997”.

The existing UGT WWTP has an excellent record of compliance with the requirements of its existing NPDES permit. After construction of the additional UGT WWTP facilities to handle the diverted flow is completed, UGT will comply with a new NPDES permit issued by PADEP.

VI.D CAPITAL COST AND FUNDING EVALUATION

- a. As stated above in this Section, the diversion of flow is the alternative chosen by UGT. This alternative requires the construction of additional treatment facilities at the UGT WWTP, two new pump stations, and new force mains.
 1. The capital cost analysis for the Flow Diversion project is included in Appendix Q. The cost includes engineering and a 20% contingency. Construction of the new facilities needed to divert flow is scheduled to be completed within approximately four years. This is discussed further in Section VIII.

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2. UGT plans on funding the cost through two means. Work on the Engineering and regulatory aspects of the project has already been started. UGT plans on funding this work through inclusion in its annual budgeting process. Once the project gets to the construction phase, the remaining Engineering cost will be included with the construction cost. This will be funded by a 15 to 25 year (depending on market conditions) bond issue that UGT will obtain in the amount of approximately fifteen million dollars. Spreading the cost of the project over 15 to 25 years will reduce the economic impact on customers. Therefore, even though construction is scheduled to be completed in approximately four years, the cost to UGT's customers will be spread out over 15 to 25 years.

 3. There are two other significant funding sources for the project available to UGT. First, as part of the legal agreement between UGT and TT, UGT was paid \$7,100,000 upon leaving the TMA (formerly UGTMA). The second source is \$4,900,000 in sewer reserve funds held by UGT.
- b. Do nothing and continue to treat UGT flow at TMA WWTP.
1. Although there are no costs to divert flow for this option, there are still very significant costs associated with UGT continuing to have their flow treated at the TMA WWTP. UGTMA, prior to becoming the TMA, was jointly owned and operated by UGT and TT. When the UGTMA was defensed, UGT was

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no longer an owner, but rather just a customer. If UGT stays as part of the TMA it would incur very significant future, long term costs for upgrade of the TMA WWTP and the Kriebel Road Interceptor. An independent engineering study authorized by UGT and TT was performed by the nationally recognized engineering consulting firm of Hazen & Sawyer in 2013. The results of the study were accepted by both UGT and TT. This study provided cost estimates for the long term needs of the then UGTMA (now TMA) WWTP and collection system. Considering the age of the existing facility, the need to replace existing equipment and facilities, and the need to upgrade the WWTP to meet stricter, anticipated future permit limits, a cost estimate was generated. The UGT share of this cost is estimated to be \$33,800,000. This means that over an extended period of time, UGT would have incurred this cost. This was a key reason that UGT decided to no longer be part of the UGTMA and to divert flow.

VI.E ECONOMIC IMPACT OF FLOW DIVERSION

As a result of flow being diverted to the UGT WWTP, the long term cost to operate the UGT WWTP and collection system will be affected in a positive way. Once the flow is diverted, there will be a significant number of additional UGT customers which will provide long term economies of scale for operation of the UGT WWTP. This will reduce rate increases for UGT customers that could occur in the future.

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The additional customers will also help to pay for the bond issue that will be used to fund the capital cost. The bond issue will be paid for in 15 to 25 years, but the additional annual revenue increase from a greater number of UGT customers will continue long after the bond is paid off. This represents a significant, long term financial benefit to UGT and its rate payers.

Financing a 25 year bond issue will not result in any rate increase to UGT customers.

Depending on market conditions, UGT may decide to finance the project with a 15 year bond issue, which would pay off the bond 10 years sooner than a 25 year bond and reduce the interest paid over the life of the bond. This would also mean that the extra revenue coming from the additional customers will be available 10 years sooner for purposes other than to pay debt service on the bond.

Should UGT decide to use a 15 year bond, a single rate increase of \$15 to each customer's semi-annual bill would result. As an example, the current semi-annual customer payment of \$185 would increase to \$200 to finance a 15 year bond.

If UGT does not divert flow, any costs to replace and upgrade the existing facilities at the TMA WWTP will be incorporated into the future sewer rates paid by UGT residents in the TMA service area. Therefore, by not diverting flow, UGT does not have long term control of the rates to be charged to the significant number of UGT customers served by the TMA. However, once UGT diverts flow, it will have control of the rates it charges to customers

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whose flow is being diverted. We note that the sewer rates for UGT customers in the TMA service area will continue to be the same as sewer rates for UGT customers that currently flow to the UGT WWTP.

VI.F CONSTRUCTION PHASING

The flow can't be diverted until all of the WWTP, pump station, and force main construction is completed. There is no compelling reason for constructing any of the new facilities before the other(s). The project schedule was developed to provide the most economic benefit to UGT in terms of project bidding and facilitation of construction. A more detailed discussion of the project schedule is included in Section VIII.

VI.G LEGAL AUTHORITY

As stated earlier, UGT negotiated and finalized a legal agreement that provides for UGT diverting flow. Part of that agreement states that Towamencin Township will support UGT's efforts to divert flow. Other than this agreement, UGT plans on obtaining all regulatory approvals and permits necessary to successfully execute the project

VII. INSTITUTIONAL EVALUATION

VII. A UPPER GWYNEDD TOWNSHIP

UGT owns and operates its own WWTP and collection system. It has the authority to secure funding, operate and maintain its sanitary sewer treatment and collection system,

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and regulate all users. The chosen alternative to divert flow can be implemented and incorporated into the UGT sanitary sewer system without any additional staff, departments, or authorities. UGT will have full ownership and operating responsibility for the additional WWTP facilities, the two new pump stations, and the new force mains.

Based on the legal agreement between Upper Gwynedd Township and Towamencin Township, UGT has the legal authority to divert flow to the UGT WWTP.

With the exception of the few functioning on-site systems, all wastewater within Upper Gwynedd Township will continue to be treated at publicly owned, NPDES permitted, wastewater treatment plants.

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VIII. IMPLEMENTATION

VIII. A RECOMMENDATION

The chosen alternative is the following:

Upper Gwynedd Township diverts approximately 950,000 gallons per day (0.95 MGD) that currently flows to the TMA WWTP, to the UGT WWTP is the recommended alternative in this Act 537 Plan – Special Study

The chosen alternative meets all of the following important UGT goals:

- The existing UGT WWTP has adequate capacity to handle the build out for all development as shown in the Connection Management Plan discussed in Section IV.B.4. The 0.95 MGD being diverted will require additional capacity at the existing UGT WWTP. UGT will construct the facilities necessary to handle the average annual and peak flows. This is discussed in Section V.A.1.

Flow diversion also requires that two pump stations and two force mains be constructed to divert the flow that currently goes to the TMA WWTP, to the UGT WWTP. This is discussed in Section V.A.2. The property for both pump stations has already been acquired.

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- The proposed route utilizes mostly existing Township rights of way. There are very few additional permanent easements required. The required easements are listed in Appendix J. The largest easement will be through Wissahickon Valley Watershed Association (WVWA) property. UGT has already met with the WVWA and they are supportive of the flow diversion project. We note that UGT already has sewer lines in WVWA property that were previously negotiated.
- The proposed force main routes involve a minimal amount of environmental impact and construction on private property.
- All permits and approvals will be obtained for the construction of the WWTP facilities, the force mains, and the two pump stations.
- Flow Diversion will greatly reduce the hydraulic loading in the Kriebel Road Interceptor. In turn, this will greatly reduce, if not eliminate, the many SSO that have occurred in the past on the KRI.
- The additional flow being diverted to the UGT WWTP will provide significant, long term economies of scale at the UGT WWTP and will reduce rate increases to UGT customers that could occur in the future.
- Flow Diversion will give UGT control over almost all of the wastewater treatment needs of the UGT community.
- The flow diversion alternative will be supportive of growth in UGT. Although UGT is mostly built out, there is some growth that is projected. In addition, certain existing properties have the potential to be re-developed that would

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create additional growth. In the UGT service area that flows to the TMA WWTP, there is a connection prohibition due to SSO on the KRI. By diverting flow UGT will construct the new pump stations and force mains with adequate capacity to likely eliminate SSO, eliminate the connection prohibition, and facilitate growth in UGT

- Several years of negotiation went into the legal agreement to provide for UGT to divert flow. This required considerable time and effort on the part of both UGT and TT. All of this led to UGT determining that diverting flow was the best alternative for UGT.

We also note that UGT diverting flow will provide the TMA with the opportunity to better serve their customers in the future. Given the future facilities that will be needed at the TMA WWTP to upgrade the WWTP and meet stricter, future permit limits, TMA will be able to tailor the size of the new facilities to its future customer base.

VIII.B IDENTIFICATION OF COSTS AND FUNDING

The diversion of flow is the alternative chosen by UGT. This alternative requires the construction of additional treatment facilities at the UGT WWTP, two new pump stations, and new force mains.

UGT plans on funding the cost through two means. Work on Engineering and regulatory aspects of the project have already been started. UGT plans on funding this work through

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inclusion in its annual budgeting process. Once the project gets to the construction phase, the remaining Engineering cost will be included with the construction cost, and this will be funded by a 15 to 25 year (depending on market conditions) bond issue in the amount of approximately fifteen million dollars. Spreading the cost of the project over 15 to 25 years will reduce the economic impact on customers. Therefore, even though construction is scheduled to be completed in approximately four years, the cost to UGT’s customers will be spread out over 15 to 25 years.

There are two other significant sources of funding for the project for UGT. As part of the legal agreement between UGT and TT, UGT was paid \$7,100,000 upon leaving the TMA (UGTMA). The other source is 4,900,000 in sewer reserve funds held by UGT

VIII.C PROJECT SCHEDULE

The Project Schedule is included in Appendix C. The schedule is formatted using PADEP approval of the Act 537 Plan as the start date (Time T=0). As the schedule indicates, work on several tasks has already begun. There are tasks that cannot proceed or be completed until PADEP Act 537 Plan approval is obtained and the schedule is consistent with this.

Meetings have been held with all regulatory agencies and other parties key to successful implementation of the project. Survey work and preliminary engineering is well underway. Property for both the VFRN Pump Station and the VFRS Pump Station has been acquired.

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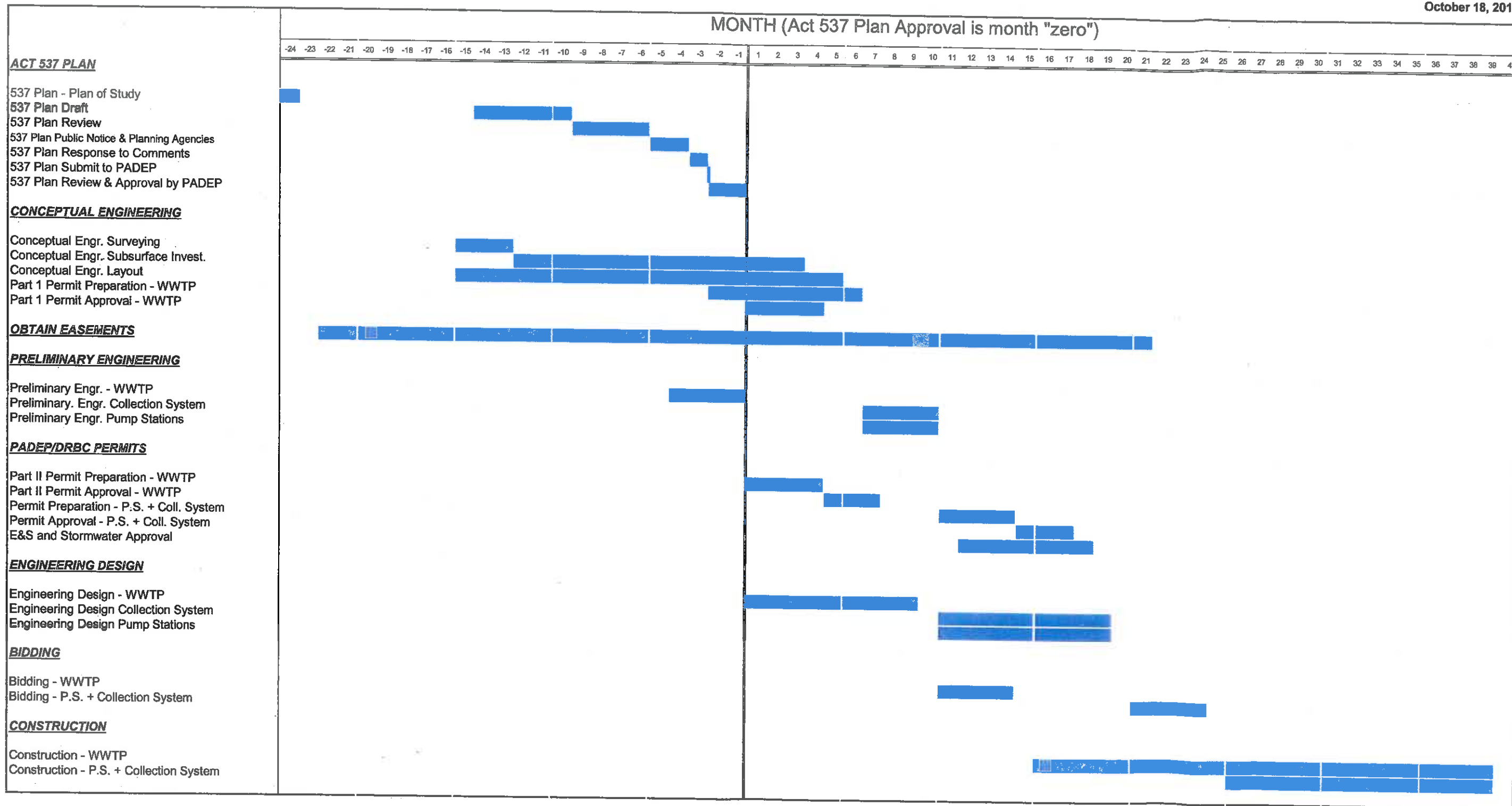
Work on obtaining easements for the force mains is underway. This Special Study is a key component of the project and provides an opportunity for public input.

The project is anticipated to take approximately four years and be completed in 2020. Obtaining regulatory or other agency approvals, obtaining permits, and logistical issues associated with construction have the potential to impact the project schedule.

APPENDIX C

PROJECT SCHEDULE

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TMA DIVERSION SCHEDULE
October 18, 2016



APPENDIX I

PADEP ACT 537 PLAN CHECKLIST



INSTRUCTIONS FOR COMPLETING ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

Remove and recycle these instructions prior to submission.

CHECKLIST INSTRUCTIONS

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

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

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

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

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

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

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

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

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

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

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



ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

PART 1 GENERAL INFORMATION

A. Project Information

1. Project Name Upper Gwynedd Township Act 537 Plan Revision - Special Study

2. Brief Project Description

Flow Diversion from TMA WWTP to UGT WWTP

B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
Upper Gwynedd Township	Montgomery	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Perrone	Leonard	T		

Additional Individual Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
P.O. Box 1	

Address Last Line - City	State	ZIP+4
West Point	PA	19486

Phone + Ext.	FAX (optional)	Email (optional)
215-699-7777	215-699-8846	lperrone@uppergwynedd.org

C. Site Information

Site (or Project) Name Upper Gwynedd Township (Municipal Name) Act 537 Plan

Site Location Line 1	Site Location Line 2

D. Project Consultant Information

Last Name	First Name	MI	Suffix
Interrante	John	V.	P.E.

Title	Consulting Firm Name
Principal Engineer	Environmental Engineering & Management Associates, Inc.

Mailing Address Line 1	Mailing Address Line 2
P.O. Box 232	

Address Last Line - City	State	ZIP+4	Country
Kulpville	PA	19443	USA

Email	Phone + Ext.	FAX
Jinterrante@eema-inc.com	215-368-3375	215-368-6739

PART 2 ADMINISTRATIVE COMPLETENESS CHECKLIST

DEP Use Only	Indicate Page #(s) In Plan	In addition to the main body of the plan, the plan must include items one through eight listed below to be accepted for formal review by DEP. Incomplete plans may be <i>denied</i> unless the municipality is clearly requesting an advisory review.
	1	1. Table of Contents
	2	2. Plan Summary
	2	A. Identify the proposed service areas and major problems evaluated in the plan (Reference - 25 Pa. Code §71.21(a)(7)(i)).
	2	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference - 25 Pa. Code §71.21(a)(7)(ii)).
	2	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference - 25 Pa. Code §71.21(a)(7)(ii)).
	3	D. Identify the municipal commitments necessary to implement the Plan. (Reference - 25 Pa. Code §71.21(a)(7)(iii)).
	3	E. Provide a schedule of implementation for the project that identifies the <i>major</i> milestones with dates necessary to accomplish the project to the point of operational status. (Reference - 25 Pa. Code §71.21(a)(7)(iv)).
	3	3. Municipal Adoption: <i>Original</i> , signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference - 25 Pa. Code §71.31(f)) Section V.F. of the Planning Guide.
	App. D & G	4. Planning Commission / County Health Department Comments: Evidence that the municipality has requested, reviewed and considered comments by appropriate official planning agencies of the municipality, planning agencies of the county, planning agencies with area wide jurisdiction (where applicable), and any existing county or joint county departments of health. (Reference - 25 Pa. Code §71.31(b)) Section V.E.1 of the Planning Guide.
	App. F	5. Publication: Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30-day comment period (Reference - 25 Pa. Code §71.31(c)) Section V.E.2 of the Planning Guide.
	App. G	6. Comments and Responses: Copies of <i>all</i> written comments received and municipal response to each comment in relation to the proposed plan. (Reference - 25 Pa. Code §71.31(c)) Section V.E.2 of the Planning Guide.
	42	7. Implementation Schedule: A complete project implementation schedule with milestone dates specific for each existing and future area of need. Other activities in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference - 25 Pa. Code §71.31(d)) Section V.F. of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference - 25 Pa. Code §71.21(c)).
	27-32	8. Consistency Documentation: Documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 25 Pa. Code §71.21 (a)(5)(i-iii). (Reference - 25 Pa. Code §71.31(e)) Appendix B of the Planning Guide.

PART 3 GENERAL PLAN CONTENT CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	Item Required
	<u>5</u>	I. Previous Wastewater Planning
		A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
	<u>5</u>	1. Previously undertaken under the Pennsylvania Sewage Facilities Act (Act). (Reference - Act 537, 35 P.S. §750.5(d)(1)).
	<u>N/A</u>	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A-D)). Section V.F of the Planning Guide.
	<u>5 & App.M</u>	3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A&B)). Section V.D. of the Planning Guide.
	<u>5 & App.O</u>	4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A)).
	<u>6 & App. IA</u>	Physical and Demographic Analysis utilizing written description and mapping (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
	<u>6 & App.A</u>	A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference - 25 Pa. Code §71.21(a)(1)(i)).
	<u>N/A</u>	B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference - 25 Pa. Code §71.21(a)(1)(ii)).
	<u>N/A</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 (IRSIS), and areas unsuitable for soil dependent systems. (Reference - 25 Pa. Code §71.21(a)(1)(iii)). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference - 25 Pa. Code §71.21(a)(1)(iii)).
	<u>N/A</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 - 25 Pa. Code §71.21(a)(1)(iii)).
	<u>N/A</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 - 25 Pa. Code §71.21(a)(1)(ii)).
	<u>N/A</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 - 25 Pa. Code §71.21(a)(1)(vi)). Section V.C. of the Planning Guide.
	<u>6 & App. J.</u>	G. Wetlands-Identify wetlands as defined in 25 Pa. Code Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per the United States Department of Agricultural (USDA) Natural Resources Conservation Service (NRCS) mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference - 25 Pa. Code §71.21(a)(1)(v)). Appendix B, Section II.I of the Planning Guide.

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| <p>_____ 8 & App. A</p> <p>_____ 8-11 & App. A</p> <p>_____ App. K & App. L</p> <p>_____ 13 & App.M</p> <p>_____ 14-23 App. C & App. M</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> | <p>III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs</p> <p>A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:</p> <ol style="list-style-type: none"> 1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference - 25 Pa. Code §71.21(a)(2)(i)(A)). 2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's National Pollutant Discharge Elimination System (NPDES) permitted capacity, and the Clean Streams Law permit number. (Reference - 25 Pa. Code §71.21(a)(2)(i)(A)). 3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under 25 Pa. Code Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference - 25 Pa. Code §71.21(a)(2)(i)(B)). 4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(i & ii)). 5. A detailed description of the municipality's operation and maintenance (O & M) requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs (SMPs). (Reference - 25 Pa. Code §71.21(a)(2)(i)(C)). 6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference - 25 Pa. Code §71.21(a)(4)(i & ii)). <p>B. Using DEP's publication titled <i>Act 537 Sewage Disposal Needs Identification</i> (3800-BK-DEP1949), identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:</p> <ol style="list-style-type: none"> 1. The types of onlot systems in use. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(A)). 2. A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Act, the Clean Stream Law or regulations promulgated thereunder. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(B)). 3. A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and 25 Pa. Code Chapter 73 (relating to standards for sewage disposal facilities). (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)). 4. An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's <i>Act 537 Sewage Disposal Needs Identification</i> publication. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(B)). |
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_____	<u>N/A</u>	5. Detailed description of O & M requirements of the municipality for individual and small volume community onlot systems, including the status of past and present compliance with these requirements and any other requirements relating to SMPs. (Reference - 25 Pa. Code §71.21(a)(2)(i)(C)).
_____	<u>N/A</u>	C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:
_____	<u>N/A</u>	1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference - 25 Pa. Code §71.71).
_____	<u>N/A</u>	2. Quantities of the types of sludges or septage generated. (Reference - 25 Pa. Code §71.71).
_____	<u>N/A</u>	3. Present disposal methods, locations, capacities and transportation methods. (Reference - 25 Pa. Code §71.71).
_____	<u>14-18</u>	IV. Future Growth and Land Development
_____	<u>App. N</u>	A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
_____	<u>N/A</u>	1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference - 25 Pa. Code §71.21(a)(3)(iv)).
_____	<u>N/A</u>	2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference - 25 Pa. Code §71.21(a)(3)(iv)).
_____	<u>14-19 & App. O</u>	3. All limitations and plans related to floodplain and stormwater management and special protection (25 Pa. Code Chapter 93) areas. (Reference - 25 Pa. Code §71.21(a)(3)(iv)) Appendix B, Section II.F of the Planning Guide
_____	<u>App. O</u>	B. Delineate and describe the following through map, text and analysis.
_____	<u>N/A</u>	1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of equivalent dwelling units (EDUs) in development, total number of EDUs currently developed and total number of EDUs remaining to be developed (include time schedule for EDUs remaining to be developed). (Reference - 25 Pa. Code §71.21(a)(3)(i)).
_____	<u>14-19</u>	2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas (Reference - 25 Pa. Code §71.21(a)(3)(ii)) Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning (Reference - 25 Pa. Code §71.21(a)(3)(iv))
_____	<u>N/A</u>	3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference - 25 Pa. Code §71.21(a)(1)(iv) and (a)(3)(iii)).
_____		4. Zoning, and/or subdivision regulations, local, county or regional comprehensive plans; and existing plans of any other agency relating to the development, use and protection of land and water resources with special attention to: (Reference - 25 Pa. Code §71.21(a)(3)(iv)).
		-public ground/surface water supplies
		-recreational water use areas
		-groundwater recharge areas
		-industrial water use
		-wetlands

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

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

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

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

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

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

- C. The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes with consideration of. (Reference - 25 Pa Code §71.64(d)).
 - 1. Treatment and discharge requirements. (Reference - 25 Pa. Code §71.64(d)).
 - 2. Soil suitability. (Reference - 25 Pa. Code §71.64(c)(1)).
 - 3. Preliminary hydrogeologic evaluation. (Reference - 25 Pa Code §71.64(c)(2)).
 - 4. Municipal, Local Agency or other controls over O & M requirements through a SMP. (Reference - 25 Pa Code §71.64(d)). See Part "F" below
- D The use of community land disposal alternatives including:
 - 1 Soil and site suitability. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)).
 - 2 Preliminary hydrogeologic evaluation. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)).
 - 3 Municipality, Local Agency or other controls over O & M requirements through a SMP. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)). See Part "F" below.
 - 4. The rehabilitation or replacement of existing malfunctioning community land disposal systems. (See Part "V", B, 4. a, b, c above). See also Part "F" below.
- E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference - 25 Pa. Code §71.21(a)(4)).
 - 1. Commercial, residential and industrial use. (Reference - 25 Pa. Code §71.63(e)).
 - 2 Designated conveyance facilities (pumper trucks). (Reference - 25 Pa. Code §71.63(b)(2)).
 - 3. Designated treatment facilities or disposal site. (Reference - 25 Pa. Code §71.63(b)(2)).
 - 4. Implementation of a retaining tank ordinance by the municipality. (Reference - 25 Pa. Code §71.63(c)(3)). See Part "F" below.
 - 5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference - 25 Pa. Code §71.63(c)(2)).
- F. SMPs to assure the future O & M of existing and proposed sewage facilities through:
 - 1. Municipal ownership or control over the O & M of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(iv)).
 - 2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference - 25 Pa. Code §71.73(b)(1)).
 - 3. Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule established by the municipality. (Reference - 25 Pa. Code §71.73(b)(2)).
 - 4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference - 25 Pa. Code §71.21(a)(4)(iv) and §71.73(b)(5)) through:
 - a. Aggressive pro-active enforcement of ordinances that require O & M and prohibit malfunctioning systems. (Reference - 25 Pa. Code §71.73(b)(5)).
 - b. Public education programs to encourage proper O & M and repair of sewage disposal systems.
 - 5. Establishment of joint municipal SMPs. (Reference - 25 Pa. Code

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§71.73(b)(8)).

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

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

1. Modification of existing comprehensive plans involving:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

VI. Evaluation of Alternatives

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

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

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

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

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

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

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

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

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

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

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

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

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

	<u>N/A</u>	B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference - 25 Pa. Code §71.21(a)(5)(ii)). Appendix B of the Planning Guide.
	<u>27-28</u>	C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference - 25 Pa. Code §71.21(a)(5)(iii)).
	<u>33-36 & App. Q</u>	D. Provide cost estimates using present worth analysis for construction, financing, ongoing administration, O & M and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of plan submission. (Reference - 25 Pa. Code §71.21(a)(5)(iv)).
	<u>33,34,41-42 & App. Q</u>	E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of the plan submission. (Reference - 25 Pa. Code §71.21(a)(5)(v)).
	<u>37</u>	F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference - 25 Pa. Code §71.21(a)(5)(vi)).
	<u>N/A</u>	1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of SMPs. (Reference - 25 Pa. Code §71.21(a)(5)(vi)(A)).
	<u>N/A</u>	2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a SMP justifying time schedules for each phase. (Reference - 25 Pa. Code §71.21(a)(5)(vi)(B)).
	<u>36</u>	G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - 25 Pa. Code §71.21(a)(5)(vi)(D)).
	<u>37-38</u>	VII. Institutional Evaluation
	<u>37-38</u>	A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
	<u>37-38</u>	1. Financial and debt status. (Reference - 25 Pa. Code §71.61(d)(2)).
	<u>37-38</u>	2. Available staff and administrative resources. (Reference - 25 Pa. Code §71.61(d)(2)).
	<u>37-38</u>	3. Existing legal authority to:
	<u>37-38</u>	a. Implement wastewater planning recommendations. (Reference - 25 Pa. Code §71.61(d)(2)).
	<u>37-38</u>	b. Implement system-wide O & M activities. (Reference - 25 Pa. Code §71.61(d)(2)).
	<u>37-38</u>	c. Set user fees and take purchasing actions. (Reference - 25 Pa. Code §71.61(d)(2)).
	<u>37-38</u>	d. Take enforcement actions against ordinance violators. (Reference - 25 Pa. Code §71.61(d)(2)).
	<u>37-38</u>	e. Negotiate agreements with other parties. (Reference - 25 Pa. Code §71.61(d)(2)).

33-37	f. Raise capital for construction and O & M of facilities. (Reference - 25 Pa. Code §71.61(d)(2)).
37-38	B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:
37-38	1. Need for new municipal departments or municipal authorities. (Reference - 25 Pa. Code §71.61(d)(2)).
N/A	2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference - 25 Pa. Code §71.61(d)(2)).
N/A	3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference - 25 Pa. Code §71.61(d)(2)).
37-38	C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
N/A	1. Incorporation of authorities or agencies. (Reference - 25 Pa. Code §71.61(d)(2)).
37-38 & App. B	2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference - 25 Pa. Code §71.61(d)(2)).
24-25	3. Description of activities to provide rights-of-way, easements and land transfers. (Reference - 25 Pa. Code §71.61(d)(2)).
N/A	4. Adoption of other municipal sewage facilities plans. (Reference - 25 Pa. Code §71.61(d)(2)).
App. B	5. Any other legal documents. (Reference - 25 Pa. Code §71.61(d)(2)).
App. C	6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
29-31,37,38	D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference - 25 Pa. Code §71.61(d)(2)).
42-43	VIII. Implementation Schedule and Justification for Selected Technical & Institutional Alternatives
38-41	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:
39-41	1. Existing wastewater disposal needs. (Reference - 25 Pa. Code §71.21(a)(6)).
N/A	2. Future wastewater disposal needs. (5 and 10 year growth areas). (Reference - 25 Pa. Code §71.21(a)(6)).
33-37 & 41-42	3. O & M considerations. (Reference - 25 Pa. Code §71.21(a)(6)).
N/A	4. Cost-effectiveness. (Reference - 25 Pa. Code §71.21(a)(6)).
41-42 & App. Q	5. Available management and administrative systems. (Reference - 25 Pa. Code §71.21(a)(6)).
28-29	6. Available financing methods. (Reference - 25 Pa. Code §71.21(a)(6)).
	7. Environmental soundness and compliance with natural resource planning and preservation programs (Reference - 25 Pa. Code §71.21(a)(6)).

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B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference - 25 Pa. Code §71.21(a)(6))

_____ 42 & App.C

C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a SMP. (Reference - 25 Pa. Code §71.31(d))

_____ N/A

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

_____ N/A

A. Complete an ER as required by the UER process and as described in the DEP Technical Guidance (361-5511-111). Include this document as "Appendix A" to the Act 537 Plan Update Revision. *Note: An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.*

PENNVEST I.D. No. _____

ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS

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

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

I/A TECHNOLOGIES

PARTIAL LISTING OF INNOVATIVE AND ALTERNATIVE TECHNOLOGIES

TREATMENT TECHNOLOGIES

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

SLUDGE TREATMENT TECHNOLOGIES

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

ENERGY RECOVERY TECHNOLOGIES

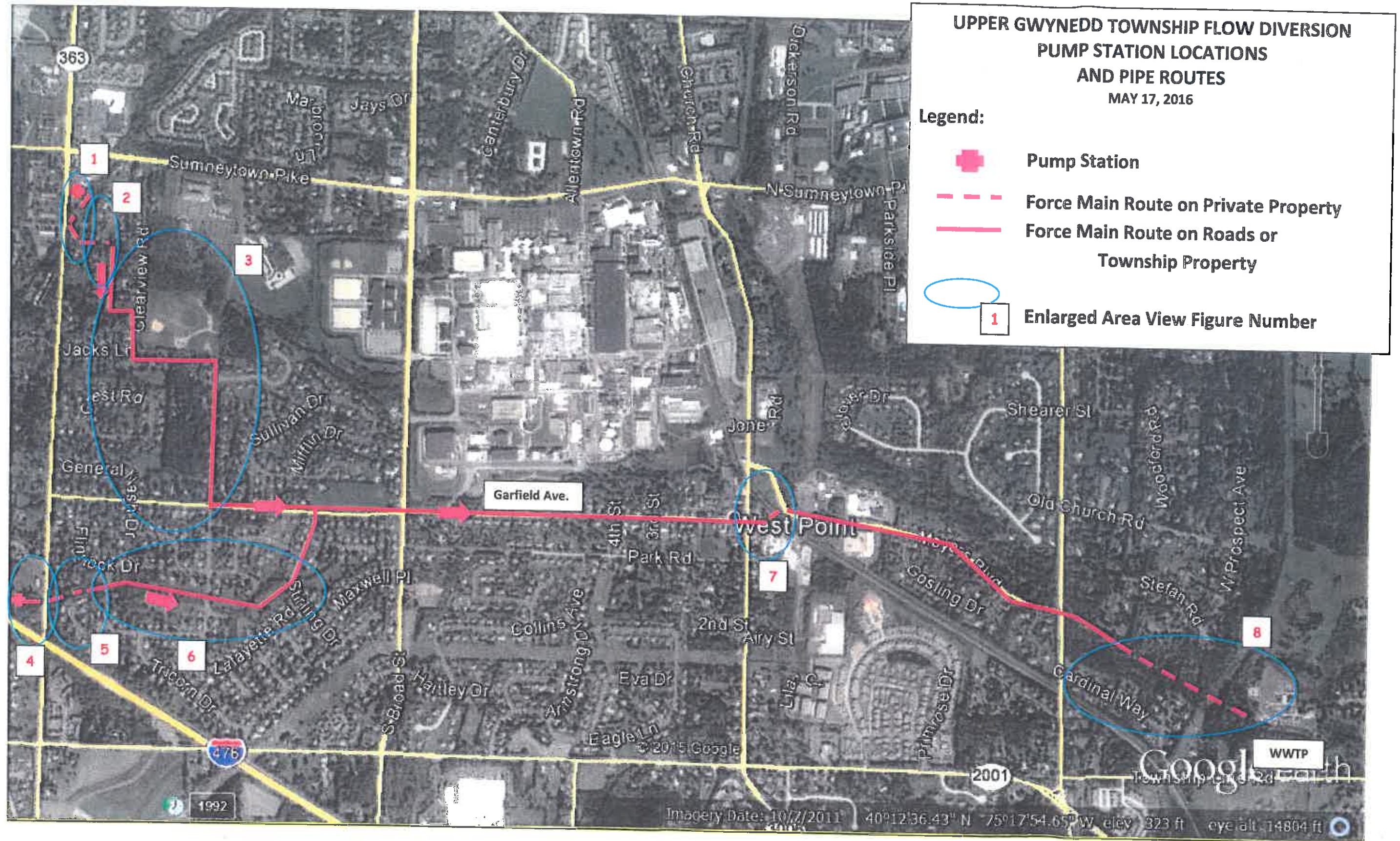
Anaerobic Digestion with more than 90 percent
Methane Recovery
Cogeneration of Electricity
Self-Sustaining Incineration

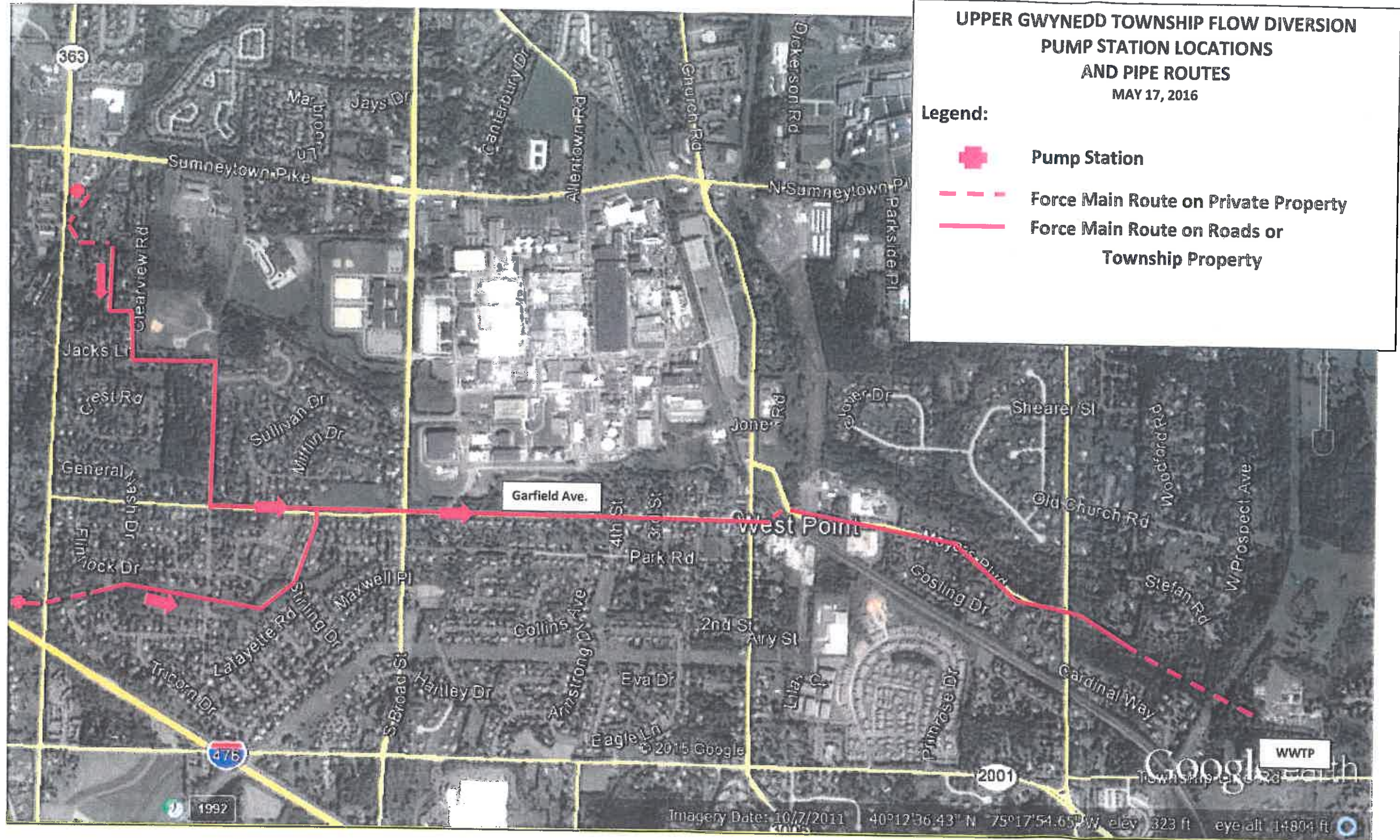
**INDIVIDUAL & SYSTEM-WIDE
COLLECTION TECHNOLOGIES**

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

APPENDIX J

PUMP STATION AND FORCE MAIN MAP
WITH EASEMENTS





Valley Forge Road near Sunneytown Pike

Figure 1



<u>Parcel Number</u>	<u>Owner & Address</u>	<u>Impact</u>
560009013003	DANNER RODERICK JR & PATRICIA 1611 VALLEY FORGE RD	Pump Station Location Gravity Sewer Construction In Existing Easement Force Main Construction In Existing Easement Temporary Construction Easement
560009010006	PEESKO KATE 1615 VALLEY FORGE RD	Gravity Sewer Construction In Existing Easement Force Main Construction In Existing Easement Temporary Construction Easement
560009007108 560009007009	NOWAK HARRY W III 1619 VALLEY FORGE RD	Force Main Construction In Existing Easement Temporary Construction Easement

Clearbrook Road

Figure 2



<u>Parcel Number</u>	<u>Owner & Address</u>	<u>Impact</u>
560001343023	SHERIDAN JOSEPH B & MARY ELLEN 1614 CLEARBROOK RD	Force Main Construction In Existing Easement Temporary Construction Easement
560001343005	DUDA DENNIS J & DIANE S 1616 CLEARBROOK RD	Force Main Construction in New Easement NOTE: Easement required ONLY if Force Main cannot be place in street above existing culvert.

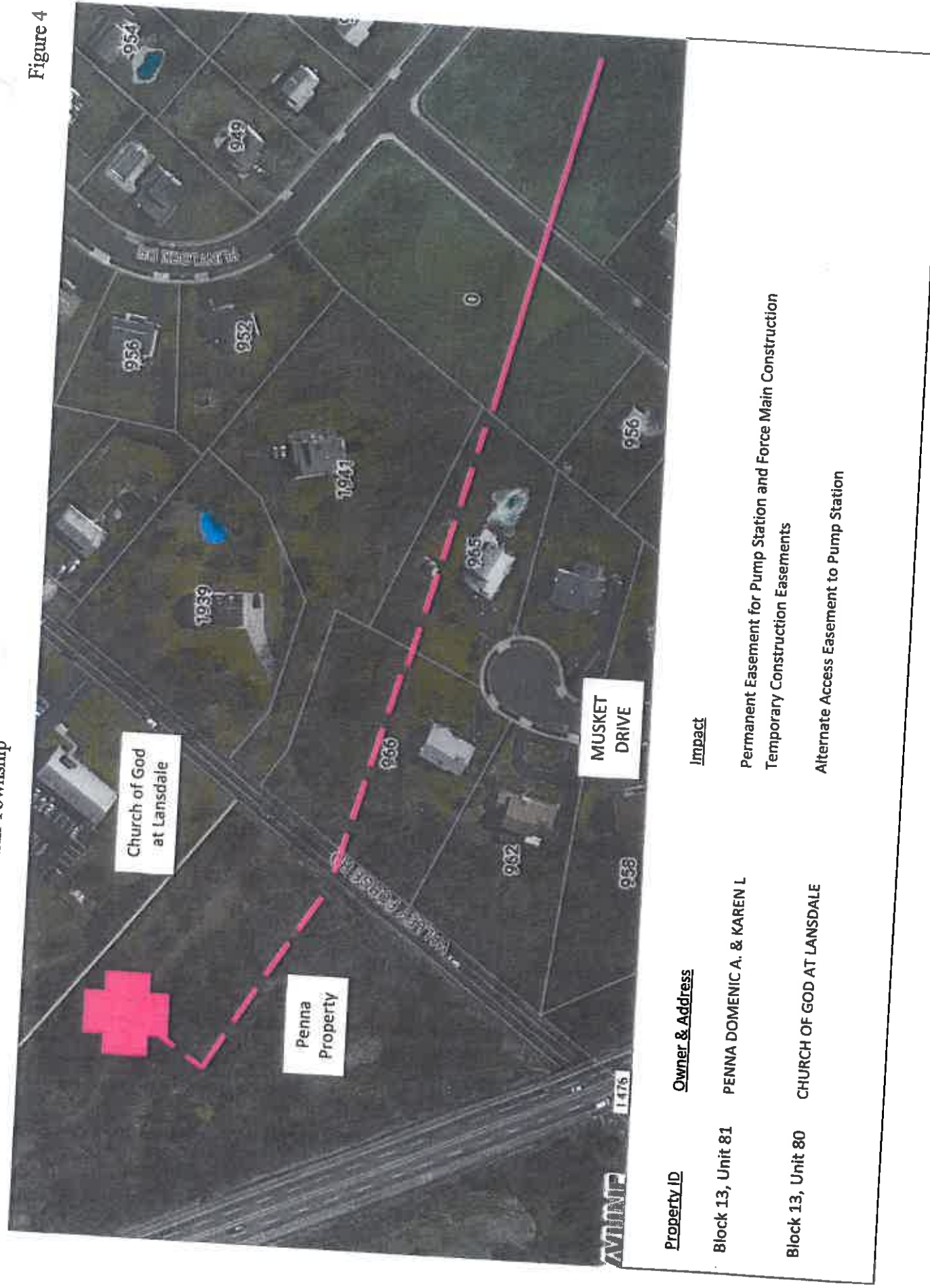
Public Streets – Clearbrook Road to Suplee Road

Figure 3



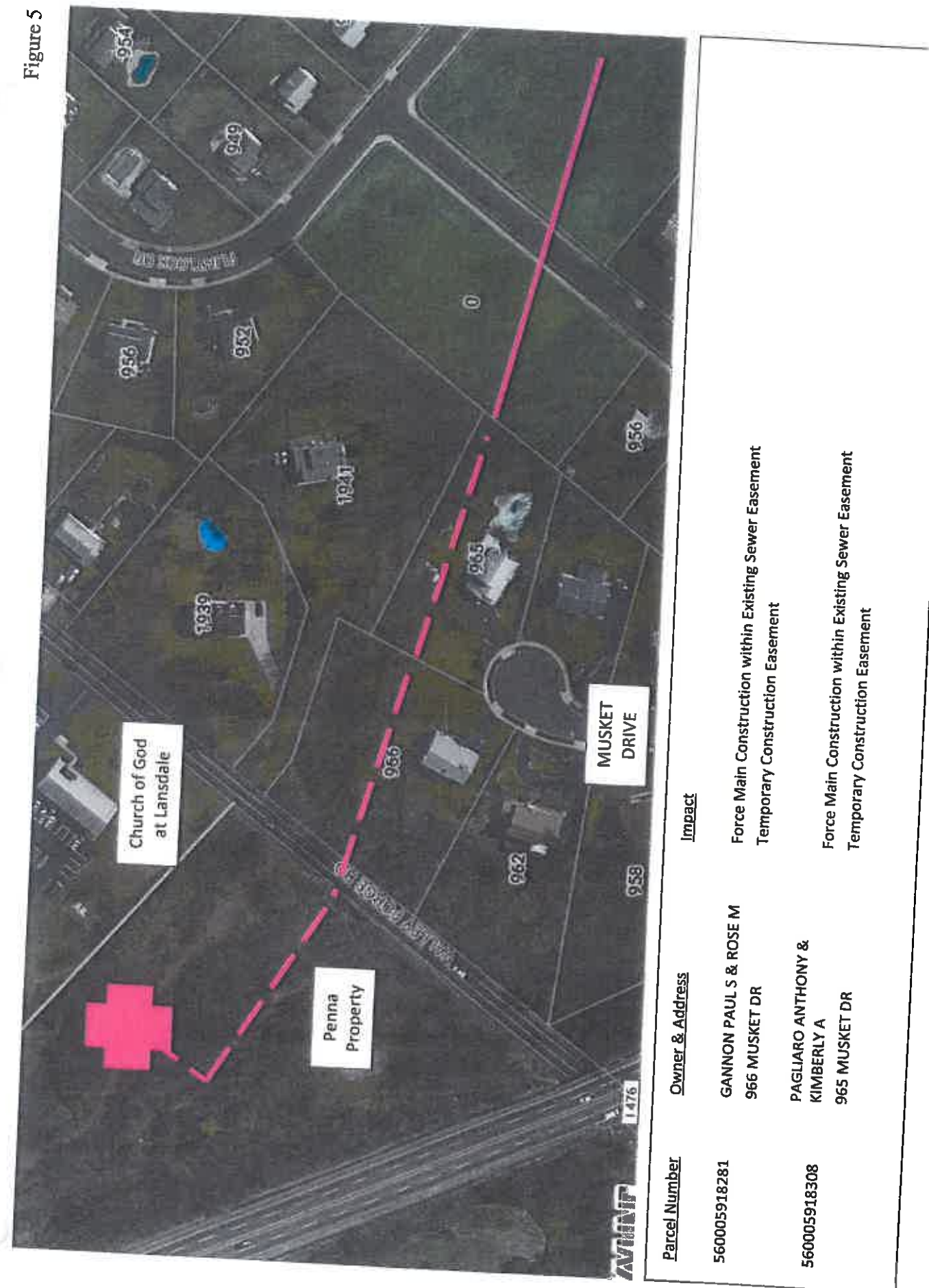
Force Main Construction in the following public streets:
Clearbrook Road, Geyer Road, Clearview Road, Jacks Lane, Suplee Road

Figure 4



Musket Drive

Figure 5



Township Open Space - Flintlock Dr. and Stirling Dr.



Figure 6

Force Main Construction within the following public streets:

Powderhorn Drive, Supplee Road, Stirling Drive

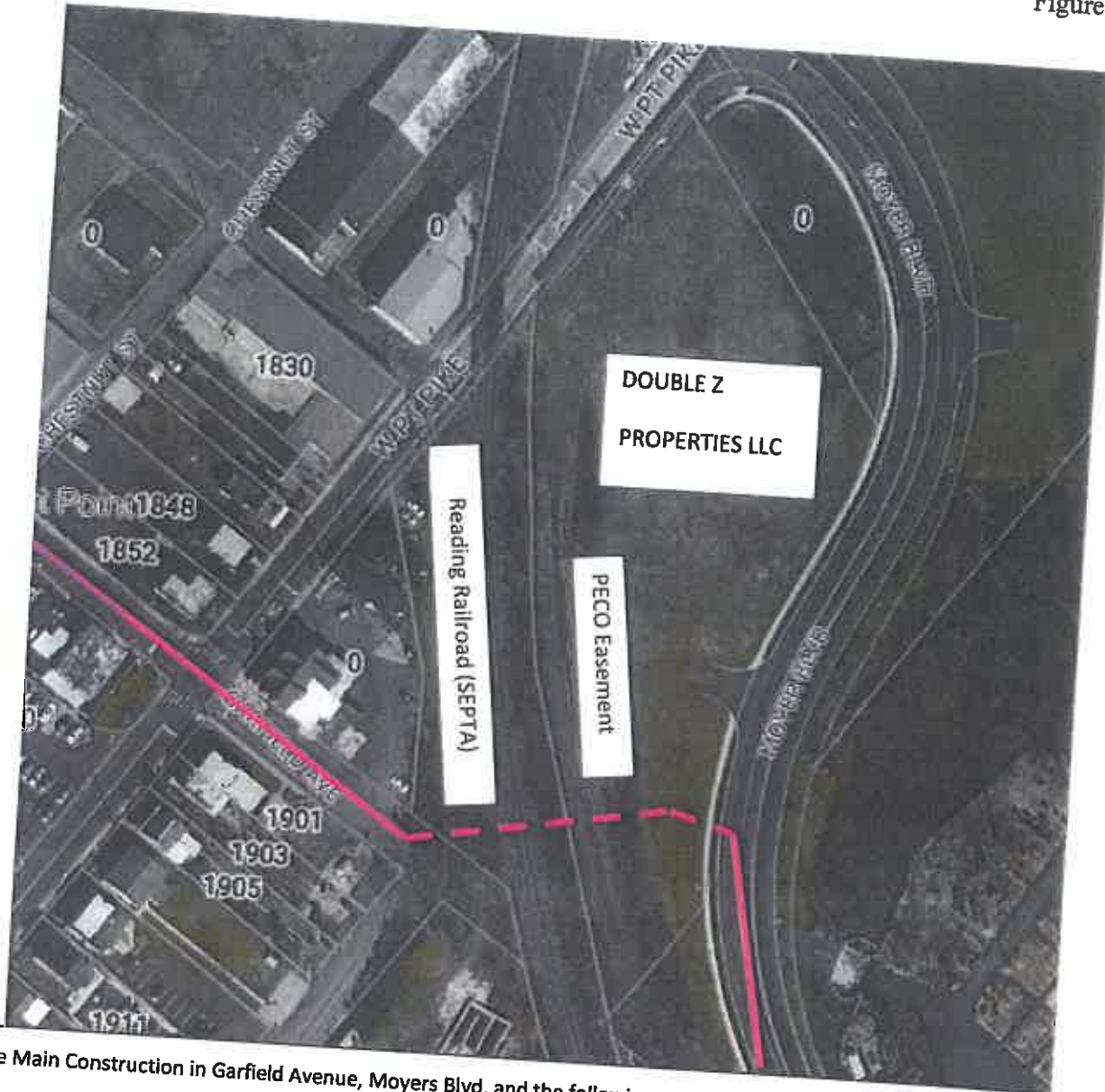
Force Main Construction within Existing Sanitary Sewer Easements, and Temporary Construction Easements, in the following parcels:

560002071015 (Flintlock Dr.) – Township Open Space

560008174176 (Stirling Dr.) – Township Open Space

Railroad Crossing at West Point

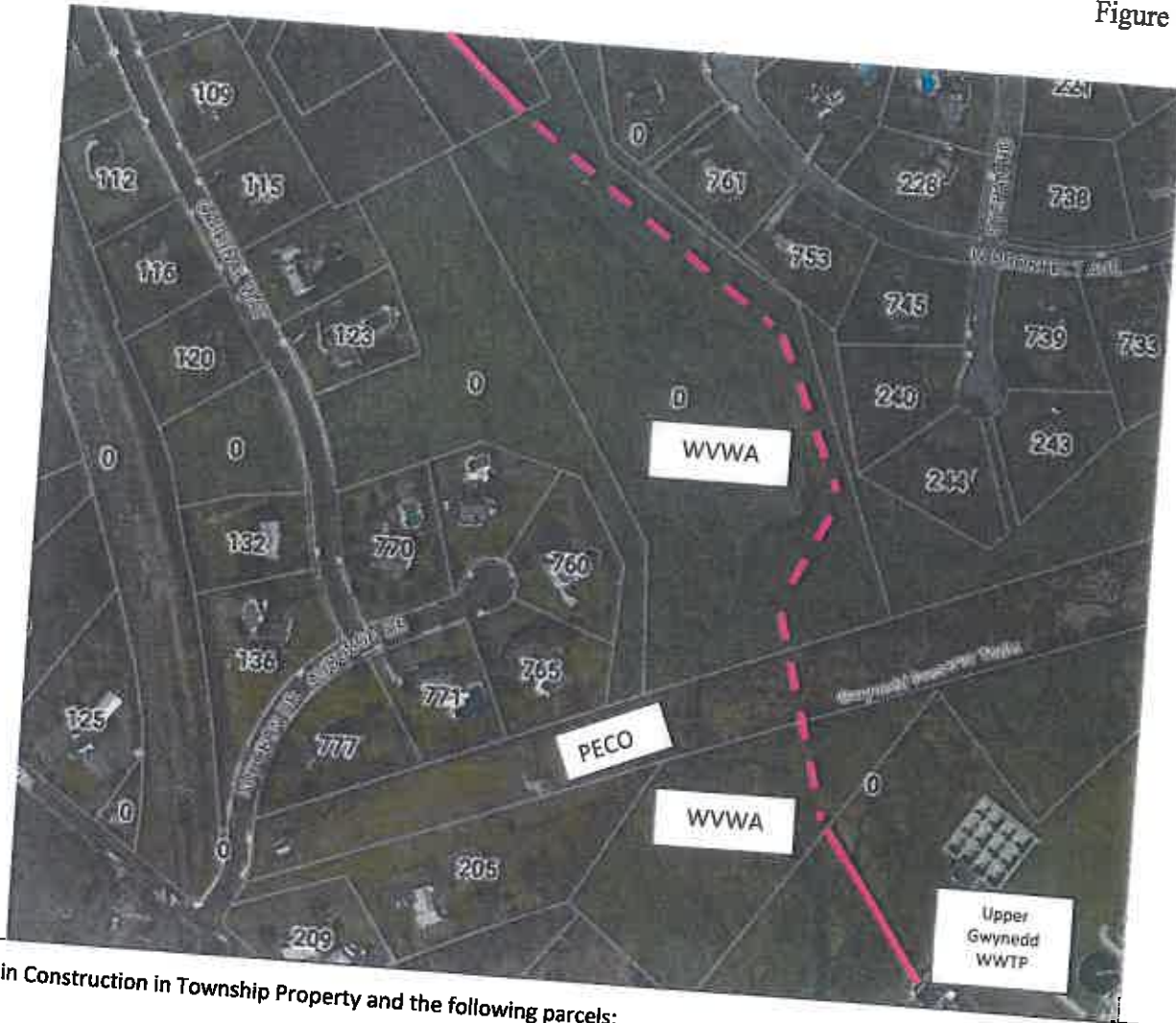
Figure 7



Force Main Construction in Garfield Avenue, Moyers Blvd, and the following parcels:

<u>Parcel Number</u>	<u>Owner & Address</u>	<u>Impact</u>
560009601009	HOFF PROPERTIES LLC 0 WEST POINT PIKE	Temporary Construction Easement
560009604006	READING RAILROAD CO (SEPTA)	Force Main Construction In New Easement Temporary Construction Easement
560009616021	DOUBLE Z PROPERTIES LLC 0 WEST POINT PIKE	Force Main Construction In New Easement Temporary Construction Easement
	PECO (Former Transit Easement)	Force Main Construction In New Easement Temporary Construction Easement

Figure 8

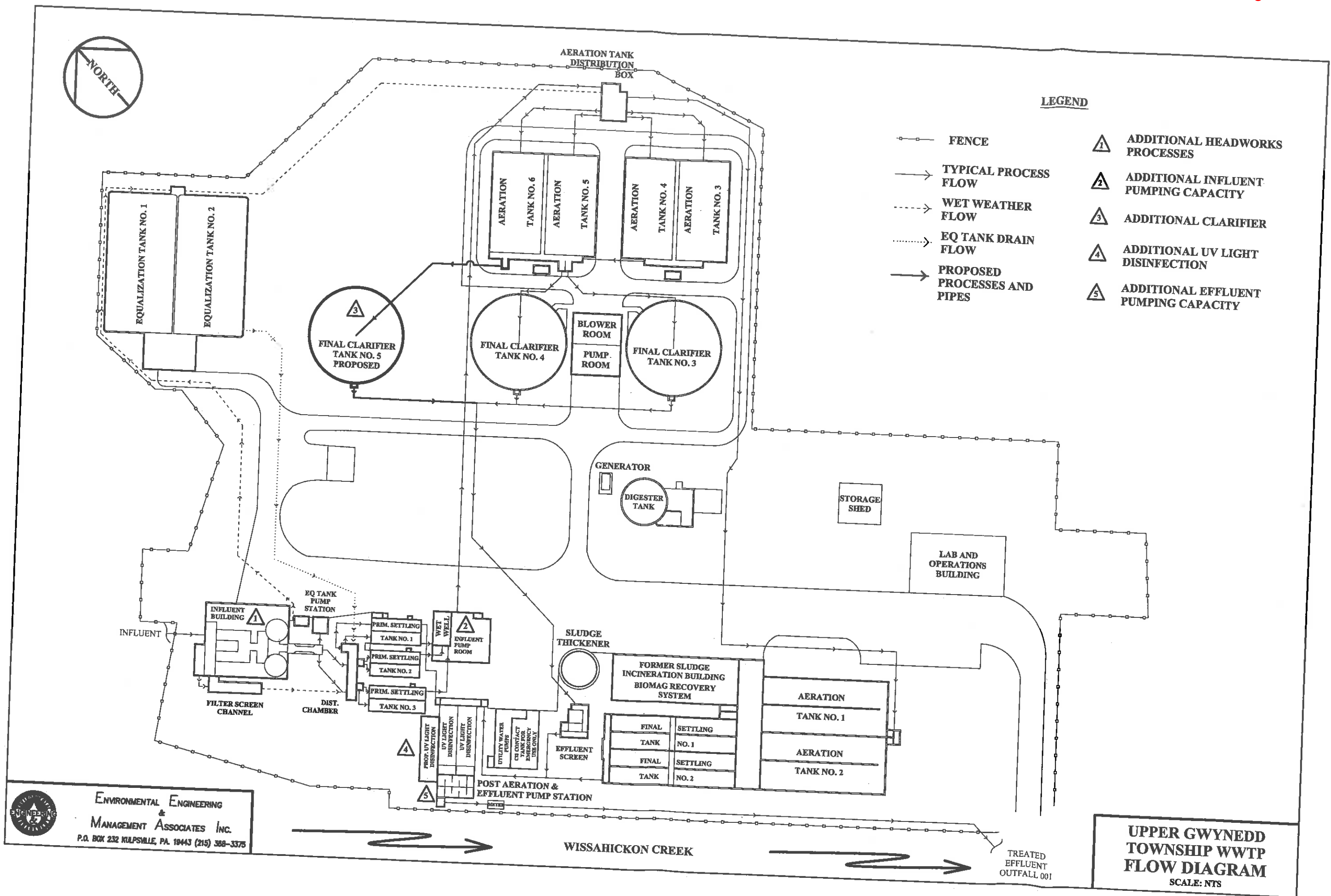


Force Main Construction in Township Property and the following parcels:

<u>Parcel Number</u>	<u>Owner & Address</u>	<u>Impact</u>
56000840121	WISSAHICKON VALLEY WATERSHED ASSOC 0 CARDINAL WAY	Force Main Construction In Existing Easement Temporary Construction Easement
560008398006	PECO 0 SUMNEYTOWN PIKE	Force Main Construction In Existing Easement Temporary Construction Easement

APPENDIX K

UPPER GWYNEDD TOWNSHIP WWTP
FLOW SCHEMATIC



ENVIRONMENTAL ENGINEERING & MANAGEMENT ASSOCIATES INC.
P.O. BOX 232 KULPSVILLE, PA. 18443 (215) 388-3375

UPPER GWYNEDD TOWNSHIP WWTP FLOW DIAGRAM
SCALE: NTS

APPENDIX O

UPPER GWYNEDD TOWNSHIP
CONNECTION MANAGEMENT PLAN

CONNECTION MANAGEMENT PLAN
UPDATED: 09/27/2017
LPT:MMW

Upper Gwynedd Township	DER Code No	Flow Approved gpd	Date Approved by DEP	EDUs		EDUs Approved	EDUs Connected	EDUs Remaining	Remaining gpd	2015	2016	2017	2018	Tributary to SSO
				EDUs Approved	EDUs Connected									
EAST INTERCEPTOR														
Aqueduct	1-469-531-139-E	3,610	4/25/2011	13	13			0	711					MHE 2100
Conduits	1-469-531-162-N	3,640	7/7/2008	13	10			3	1,680					MHE 3000
445 Propped Ave (Callechuck)	1-469-531-146-E	237	1/18/2013	1	0			1	237					None
301 Propped Ave (Callechuck)	1-469-531-147-E	474	1/18/2013	2	0			2	474					None
1 Propped Avenue	1-469-531-148-X	237	1/18/2013	1	0			0	0					MHE 3000
217 W Propped Avenue	1-469-531-163-X	237	8/15/2004	1	0			0	0					None
407 W Propped Avenue	1-469-531-164-X	237	10/20/14	1	0			0	237					None
264 Summit Ave	1-469-531-165-X	237	4/15/2016	1	0			0	237					None
Foulmerway Expansion	1-469-531-205-SJ	237		1	0			0	7,110					MHE 3000
Gwynedd Friends								30						MHE 3000
Gwynedd Minor On-Lot Systems								3	711					MHE 1700
Misc On-Lot Systems								10	2,370					MHE 1700
SOUTHWEST INTERCEPTOR														
JA DEP	1-469-531-68-E	1,848	3/1/2010	4	3			1	237					None
Preserve at Woodbridge	1-469-531-159-SJ	10,238	5/16/2012	50	26			24	19,358					None
Subway (Montgomery Township)	1-469-531-145-E	711	12/7/2012	3	0			3	711					None
7934 Dickerson Road (Lily)	1-469-531-317-SJ	1,186	1/26/2010	2	0			2	424					None
The Elm Road (Montgomery)	1-469-531-155-SJ	237	5/22/2016	1	0			0	1,186					None
Endura at Maple Creek	1-469-531-155-SJ	237	5/22/2016	1	0			0	237					None
314 Washington Avenue	1-469-531-155-X	5014	7/21/2010	22	0			22	5,214					None
Colette Anne Smith L.P.	1-469-531-165-E	474		2	0			2	474					None
715 East Walnut Street	1-469-531-165-X	237		1	0			1	237					None
116 Old Church Road	1-469-531-165-X	237		1	0			1	237					None
Hambrook Road	1-469-531-165-X	237		1	0			1	237					None
Worcester Township	1-469-531-165-X	237		1	0			1	237					None
Montgomery Township	1-469-531-165-X	237		1	0			1	237					None
Misc On Lot Systems	1-469-531-165-X	237		1	0			1	237					None
Misc Phase 5	1-469-531-165-X	237		1	0			1	237					None
2017 UGT System: Ingot								662	154,524					None
TMA SERVICE AREA														
871 Filbrook Court	1-469-531-101-E	1,480	1/6/1990	8	8			0	0					MHE 217A
Newton-Demitt Lab	1-469-531-113-E	1,480		16	14			2	0					None
Delta Creek	1-469-531-138-E	11,958	3/15/2007	52	37			15	503					None
Providence Preserve (Cammish)	1-469-531-148-X	237	1/11/2013	1	0			0	0					None
610 Rotameter Ave	1-469-531-151-SJ	6,714	3/11/2014	22	21			1	237					None
Carl Dixon	1-469-531-151-SJ	6,714	3/11/2014	22	21			1	237					None
Santalucia Court	1-469-531-152-SJ	5,451	4/29/2014	23	0			23	5,451					None
1830 Westport Road (Schene)	1-469-531-152-SJ	237	4/29/2014	1	0			0	237					None
221 Westport Road	1-469-531-158-X	237	4/29/2015	1	0			1	237					None
2515 Bridge St, Over AHD	1-469-531-166-SJ	474	8/27/2016	2	0			2	237					None
1571 Spruce Road	1-469-531-166-X	260	8/15/2016	1	0			0	237					None
Length of On Lot Systems	1-469-531-166-SJ	1,562		1	0			0	0					None
719 S Broad St. (Carmey)	1-469-531-161-SJ	237		1	0			0	0					None
Misc On Lot Systems								10	2,370					None
Martin I Green Street								2	9,480					None
Martin II Green Street								20	4,740					None
Martin III S. Broad St								10	2,370					None
Martin III S. Broad St								6	2,844					None
<p>1. 237 Gal/EDU is used in accordance with Act 57 calculations</p> <p>2. There is one connection for Carmock that is part of the Providence Reserve development</p> <p>3. Where "None" is shown in the last column, "Tributary to SSO," this means that the project is not tributary to any SSO within UGT.</p> <p>4. Note that EDUs included for the Preserve at Worcester are included in the total allocation for Worcester Township.</p>														
Ready to go. Subject to filing Building Permit and buying EDUs.														
Need Planning Module approval														
On lot Septic System with problems														
No approval pending or applied for and working on lot systems														

APPENDIX Q

CAPITAL COST ANALYSIS

FLOW DIVERSION CAPITAL COST ANALYSIS

FLOW DIVERSION ALTERNATIVE

1. COST TO DIVERT FLOW = \$27,000,000
2. PAYMENT RECEIVED FROM TOWAMENCIN TOWNSHIP = \$7,100,000
3. RESERVE FUNDS HELD BY UGT = \$4,900,000
4. COST TO BE FINANCED BY UGT = \$15,000,000

COST TO NOT DIVERT FLOW

1. LONG TERM UGT SHARE OF COST AT TMA WWTP = \$33,800,000¹

COST SUMMARY

NET LONG TERM CAPITAL COST SAVINGS TO UGT = \$6,800,000²

1. BASED ON HAZEN & SAWYER INDEPENDENT STUDY APPROVED BY UGT AND TT.
2. \$33,800,000 MINUS \$27,000,000.

SEP 13 2017

Mr. Michael Lapinski
Assistant Manager
Upper Gwynedd Township
P.O. Box 1
West Point, PA 19486

Re: Act 537 Plan Update
Upper Gwynedd Township Sewage Flow Diversion
APS ID No. 593641, AUTH ID No. 1195962
Upper Gwynedd Township
Montgomery County

Dear Mr. Lapinski:

The Department of Environmental Protection (DEP) has reviewed the proposed Official Sewage Facilities Plan Update (Plan) titled *Upper Gwynedd Township Sewage Flow Diversion*, as prepared by Environmental Engineering & Management Associates, Inc. (EEMA), dated October 2016. The Plan proposes the diversion of sewage flow in portions of Upper Gwynedd Township (UGT) from the Towamencin Municipal Authority's Kriebel Road Interceptor (TMA KRI) to the Upper Gwynedd Township Wastewater Treatment Facility (UGT WWTP), the construction of two new pumping stations, associated force mains and upgrades to the UGT WWTP. The submission is consistent with the planning requirements in Chapter 71 of DEP's regulations.

This Plan is approved and provides for the following:

1. The diversion of 0.95 MGD from the TMA KRI. The portions of Upper Gwynedd Township that will be diverted are the areas tributary to the Sunney Forge Shopping Center and the PA Turnpike bridge (on Valley Forge Road) crossing points. These areas are shown on Figure 2 in Appendix A of the January 27, 2017, submission. The specific properties are listed in the Valley Forge Road North Pump Station (VFRNPS) and Valley Forge Road South Pump Station (VFRSPS) tables in the May 9, 2017, resubmission.
2. Five properties in Towamencin Township will also be diverted to the UGT WWTP. Those properties are listed in the Towamencin Township Valley Forge Road South Pump Station table in the May 9, 2017, resubmission.
3. The construction of the VFRNPS and VFRSPS and associated force mains. The approved sewage flows are as follows:

- a. The annual average sewage flow for the VFRNPS will be 0.96 MGD. Its peak capacity will be 6.0 MGD. The associated proposed force main leaving the pump station will be a combination of 20" and 24" sized pipe. The force main will also have an annual average capacity of 0.96 MGD.
- b. The annual average sewage flow for the VFRSPS is 0.14 MGD. Its peak capacity will be 1.5 MGD. The associated proposed force main will be an 8" sewer line with an annual average capacity of 0.14 MGD.

These annual average sewage flows identified above include the sewage flow being diverted from the TMA KRI and anticipated future sewage flows in the respective drainage area of each pump station. The specific locations of the pump stations and routes of the force mains are illustrated in the figures in Appendix J of the January 27, 2017, submission.

4. The new force mains will combine on Garfield Avenue near Sterling Drive and a new force main will be constructed. The new 20"/24" force main will have an annual average capacity of 1.1 MGD. Its peak capacity will be 7.5 MGD.

The new force main will connect directly to the UGT WWTP, as illustrated on the *Pump Station Locations and Pipe Routes* map in Appendix J of the January 27, 2017, submission.

5. The UGT WWTP will be upgraded from 5.7 MGD to 6.4 MGD annual average flow. Per the e-mail from EEMA, dated August 30, 2017, modifications at the UGT WWTP will be made to accommodate peak sewage flows realized by the sewage flow diversion.

Upper Gwynedd Township must secure a Water Quality Management (Part II) permit(s) for the construction and operation of the proposed sewage facilities and WWTP upgrades. 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 permit is a violation of the Clean Streams Law.

Please note that the permitted annual average capacity of sewage facilities is the number upon which Act 537 sewage facilities planning capacity is based. No capacity may be used for new connections to these facilities beyond their permitted annual average capacities without first obtaining additional sewage facilities planning approvals for the rerate/upgrade of these facilities.

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.

Mr. Michael Lapinski

- 3 -

SEP 13 2017

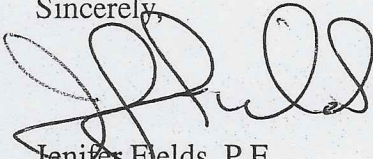
Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental 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 or concerns, please contact Ms. Stefanie Rittenhouse at 484.250.5186.

Sincerely,



Jenifer Fields, P.E.
Regional Manager
Clean Water

cc: Montgomery County Health Department
Montgomery County Planning Department
Mr. Ford - Towamencin Township
TMA
Environmental Engineering and Management Associates, Inc
Planning Section
Re 30 (GJE17CLW)250-7

ATTACHMENT 19-B

Name	Date	Status
AccuPac Sewer Connection	05.18.2016	Approval Letter-Revision
Royal Farms Store No. 132	06.29.2017	Application for Exemption
Wambold Road Tracts	11.15.2017	Application for Planning Waiver
Freddy's Frozen Custard & Firestone Retail Store	07.18.2019	Planning Waiver
Reinert Road Sewer Connections	12.17.2019	Planning Waiver
Wawa – 1401 Forty Foot Road	03.30.2020	Approval Letter-Exemption
1520 Franklin Street – Self Storage Facility	05.21.2020	Approval Letter-Exemption
Buttonwood Drive Sewer Extension	12.04.2020	Approval Letter-Revision
CORE5 at Park 31	04.07.2021	Approval Letter-Exemption
1600 Delp Drive	02.23.2022	Approval Letter-Exemption



MAY 18 2016

Mr. Robert Ford, Manager
Towamencin Township
1090 Troxel Road
P.O. Box 303
Kulpsville, PA 19443-0303

Re: Approval Letter - Revision
AccuPac Sewer Connection
DEP Code No. 1-46949-184-3J
APS ID No. 911001, AUTH ID No. 1130059
Towamencin Township
Montgomery County

Dear Mr. Ford:

The Department of Environmental Protection (DEP) has reviewed the proposed Official Plan revision consisting of the connection of an existing manufacturing facility to the public sewer system. The facility is located at 1501 Industrial Boulevard, Towamencin Township, Montgomery County. This plan revision is approved.

This project will be connected to the Towamencin Township collection system and will generate an additional 47,880 gallons of sewage per day to be treated at the Towamencin Municipal Authority Wastewater Treatment Facility.

Accupac currently discharges approximately 7,000 gpd of domestic sewage to the public sewer. The additional 47,880 gpd flow will be treated by a new onsite pretreatment facility, which will then discharge to the existing Towamencin Township sewer connection.

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, P.O. 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.

Mr. Robert Ford, Manager

- 2 -

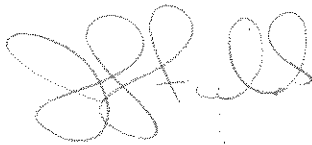
MAY 18 2016

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If you have any questions or concerns, please contact Ms. Stefanie Rittenhouse at 484.250.5186.

Sincerely,



Jenifer Fields, P.E.
Regional Manager
Clean Water

cc: Montgomery County Health Department
Montgomery County Planning Commission
Montgomery County Conservation District
Mr. Miele-AccuPac, Inc.
Towamencin Municipal Authority
Planning Section
Re 30 (GJE16CLW)134-5



June 29, 2017

Mr. Robert Ford, Manager
Towamencin Township
1090 Troxel Road
P.O. Box 303
Kulpsville, PA 19443

Re: Act 537, Application for Exemption
Royal Farms Store No. 132
DEP Code No. 1-46949-199-E
Towamencin Township
Montgomery County

Dear Mr. Ford:

The Department of Environmental Protection (DEP) has received the above-referenced subdivision plan. This letter confirms DEP's determination that the above-referenced project is exempt from the requirement to revise the Official Plan for new land development. This determination is based in part on municipal and other sign-offs. The proposed development is located at 1780 Sumneytown Pike in Towamencin Township, Montgomery County.

This project proposes a 5,200 ft² convenience store and fueling station on 2.3 acres.

This project will be connected to the Towamencin Township collection system and will generate 1,000 gallons of sewage per day to be treated at the Towamencin Municipal Authority Wastewater Treatment Facility.

Operation and maintenance requirements for the proposed grinder pump are provided through the Towamencin Township Grinder Pump Ordinance, Ordinance No. 05-04, executed on September 28, 2005.

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, P.O. 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.

Mr. Robert Ford, Manager

- 2 -

June 29, 2017

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 or concerns, please contact me at 484.250.5186 or at SteRittenh@pa.gov and refer to the project name project name and DEP Code No. as referenced above.

Sincerely,



Stefanie Rittenhouse
Sewage Planning Specialist 2
Clean Water

cc: Montgomery County Health Department
Montgomery County Planning Commission
Moreland Development, LLC
Mr. Altrogge - Robert E. Blue Consulting Engineering, Inc.
TMA
Planning Section
Re 30 (GJE17CLW)180-4



NOV 15 2017

Ms. Susan Rice
STA Engineering, Inc.
2499 Knight Road
Pennsburg, PA 18073

Re: Act 537, Application for Planning Waiver
Wambold Road Tracts
DEP Code No. 1-46949-200-X
Towamencin Township
Montgomery County

Dear Ms. Rice:

This letter is in reference to your application for Sewage Facilities Planning Modules for the consolidation of 3 lots into 1 lot and the construction of a self-storage facility on 9.8 acres. The project is located at 531, 551, and 571 Wambold Road in Towamencin Township, Montgomery County.

The three lots to be consolidated are TMPs 53-00-09284-00-5 (531 Wambold Road), 53-00-09280-00-9 (551 Wambold Road) and 53-00-09270-00-4 (571 Wambold Road). The properties currently contain 2 existing residential units used as rental units and an automobile repair/restoration business. The self-storage facility, owned by TNC Self-Storage, will be on this consolidated property. However, the office for the facility is existing and located across the street. The entire property will be owned by Wambold Realty, LP.

The locations of the existing sewer lines are not known, nor is it known if any of the uses currently share a sewer line. In their November 7, 2017, letter Towamencin Township has indicated that any future subdivision of the property and/or development on the property would require review of the sewer connections by the sewer engineer and require that individual connections must be made prior to approval. Further, a note will be included on the recorded plan that any future subdivision and/or development will require individual connections for each user.

This project does not meet the definition of a subdivision under the Pennsylvania Sewage Facilities Act. Therefore, no planning modules are required to be submitted to the Department of Environmental Protection (DEP).

NOV 15 2017

Ms. Susan Rice

- 2 -

If you have any questions or concerns, please contact me at 484.250.5186 or at SteRittenh@pa.gov and refer to the project name and DEP Code No. as referenced above.

Sincerely,



Stefanie Rittenhouse
Sewage Planning Specialist 2
Clean Water

cc: Montgomery County Health Department
Montgomery County Planning Commission
Mr. Ford - Towamencin Township
Wambold Road Realty, LP
TMA
Planning Section
Re 30(GJE17CLW)318



July 18, 2019

Mr. CJ Bock
Bohler Engineering PA, LLC
1600 Manor Drive
Chalfont, PA 18914

Re: Planning Waiver
Freddy's Frozen Custard & Firestone Retail Store
DEP Code No. 1-46949-204-X
Towamencin Township
Montgomery County

Dear Mr. Bock:

This letter is in reference to your application for Sewage Facilities Planning Modules for the construction of a Freddy's Frozen Custard Restaurant and a Firestone Retail Store on an 11-acre commercial property with an existing Wawa Convenience Store and Chick-fil-A Restaurant. An exemption from planning for the commercial property was previously approved on January 6, 2009, (DEP Code 1-46949-168-E) for the construction of a bank, 2 restaurants, and a Wawa with total project flows of 10,080 gallons of sewage per day (gpd). The Freddy's Frozen Custard and the Firestone will replace one of the previously-proposed restaurants and the bank. The Wawa and Chick-fil-A will remain on the property. This project is located on Forty Foot Road and Welsh Road in Towamencin Township, Montgomery County on Tax Map Parcel 53-00-03076-00-3.

The Department of Environmental Protection (DEP) has determined that sewage facilities planning is not required for this project. Therefore, no planning modules are required to be submitted to DEP.

The project will be connected to the Towamencin Municipal Authority collection system and will generate a total of 10,080 gpd to be treated at the Towamencin Municipal Authority Wastewater Treatment Facility.

The determination that sewage planning is not required is based on the applicant's representation that the proposed construction and use of the new facilities will produce no increase in total sewage flows over the 10,080 gpd approved in the 2009 exemption. Should any further subdivision, improvements and/or additional uses be proposed for the property, the project sponsor must submit an application mailer to DEP in order to determine whether additional sewage facilities planning is required.

This response is only a determination of planning requirements under the Pennsylvania Sewage Facilities Act concerning the above referenced project. We recommend that you contact Towamencin Township regarding any additional local requirements applicable to this project.

Mr. CJ Bock

-2-

July 18, 2019

If you have any questions or concerns, please contact me at 484.250.5179 or subanks@pa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Suzanne Banks".

Suzanne Banks
Sewage Planning Specialist 1
Clean Water

Cc: Montgomery County Planning Commission
Montgomery County Health Department
Towamencin Township
Clemens Development, LLC
Mr. Dingman – Gilmore & Associates, Inc.
Planning Section
Re



December 17, 2019

Mr. Scott Camburn
Urwiler & Walter, Inc.
PO Box 269
Sumneytown, PA 18084-0269

Re: Planning Waiver
Reinert Road Sewer Connections
DEP Code No. 1-46949-207-X
Towamencin Township
Montgomery County

Dear Mr. Camburn:

This letter is in reference to your application for Sewage Facilities Planning Modules for the connection of 3 existing single-family dwellings, currently served by onlot sewage disposal systems, to public sewer. This project is located on Reinert Road in Towamencin Township, Montgomery County on Tax Map Parcels 53-00-07208-00-2, 53-00-07204-00-6, 53-00-07196-00-5 and 53-00-07200-00-1.

This project does not meet the definition of a subdivision under the Pennsylvania Sewage Facilities Act. Therefore, no planning modules are required to be submitted to the Department of Environmental Protection (DEP).

This project proposes the connection of 625, 645 and 675 Reinert Road to public sewer. A proposed sewer extension will be constructed on Parcel 53-00-07200-00-1 and connect to the existing sewer main located in the easement on the north of the property. The proposed main will be dedicated to the Towamencin Municipal Authority. No construction or sewer connections are proposed for Parcel 53-00-07200-00-1. Should any further subdivision, improvements and/or additional uses be proposed for the property, the project sponsor must submit an application mailer to DEP in order to determine whether additional sewage facilities planning is required.

The project will be connected to the Towamencin Municipal Authority collection system and will generate 840 gallons of sewage per day to be treated at the Towamencin Municipal Authority Wastewater Treatment Facility.

This response is only a determination of planning requirements under the Pennsylvania Sewage Facilities Act concerning the above-referenced project. We recommend that you contact Towamencin Township regarding any additional local requirements applicable to this project.

Mr. Scott Camburn

-2-

December 17, 2019

If you have any questions or concerns, please contact me at 484.250.5179 or subanks@pa.gov.

Sincerely,



Suzanne Banks
Sewage Planning Specialist 1
Clean Water

Cc: Montgomery County Planning Commission
Montgomery County Health Department
Towamencin Township
Planning Section
Re



March 30, 2020

SENT VIA U.S. MAIL AND ELECTRONIC MAIL TO INFO@TOWAMENCIN.ORG

Mr. Robert Ford, Manager
Towamencin Township
PO Box 303
Kulpsville, PA 19443-0303

Re: Approval Letter – Exemption
Act 537 Planning
Wawa – 1401 Forty Foot Road
DEP Code No. 1-46949-208-E
APS ID 1013746, Auth ID 1309544
Towamencin Township
Montgomery County

Dear Mr. Ford:

The Department of Environmental Protection (DEP) has received the above-referenced application. This letter confirms DEP's determination that the project is exempt from the requirement to revise the Official Plan for new land development. This determination is based in part on municipal and other sign-offs. The proposed development is located at 1401 Forty Foot Road in Towamencin Township, Montgomery County on Tax Map Parcels 53-00-08084-00-8 and 53-00-02890-00-9.

This project proposes the consolidation of 2 lots and the construction of a 5,051-square-foot Wawa food market and fueling station on 2.3 acres. The existing Wawa, office building and Lukoil will be removed.

The project will be connected to the Towamencin Municipal Authority collection system and will generate 3,920 gallons of sewage per day (gpd) to be treated at the Towamencin Municipal Authority Wastewater Treatment Plant.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Mr. Robert Ford, Manager

- 2 -

March 30, 2020

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at <http://ehb.courtapps.com> or by contacting the Secretary to the Board at 717-787-3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

IMPORTANT LEGAL RIGHTS ARE AT STAKE. 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 AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

If you have any questions or concerns, please contact me at 484.250.5179 or subanks@pa.gov.

Sincerely,



Suzanne Banks
Sewage Planning Specialist I
Clean Water

Mr. Robert Ford, Manager

- 3 -

March 30, 2020

cc: Montgomery County Health Department (via email)
Montgomery County Planning Commission (via email)
Montgomery County Conservation District (via email)
Towamencin Sumneytown Pike, LLC (via email)
Ms. Ruble – Ebert Engineering, Inc. (via email)
Mr. McCorkle – Bursich Associates, Inc. (via email)
Mr. Dingman – Gilmore & Associates, Inc. (via email)
Planning Section
Re



May 21, 2020

SENT VIA ELECTRONIC MAIL TO RFORD@TOWAMENCIN.ORG

Mr. Robert Ford, Manager
Towamencin Township
PO Box 303
Kulpsville, PA 19443-0303

Re: Approval Letter – Exemption
Act 537 Planning
1520 Franklin Street – Self-Storage Facility
DEP Code No. 1-46949-209-E
APS ID 1016711, Auth ID 1314925
Towamencin Township
Montgomery County

Dear Mr. Ford:

The Department of Environmental Protection (DEP) has received the above-referenced application. This letter confirms DEP's determination that the project is exempt from the requirement to revise the Official Plan for new land development. This determination is based in part on municipal and other sign-offs. The proposed development is located at 1520 Franklin Street in Towamencin Township, Montgomery County on Tax Map Parcels 53-00-03192-00-4, 53-00-03196-00-9, 53-00-03200-00-5, 53-00-03204-00-1, 53-00-03208-00-6 and 53-00-03212-00-2.

This project proposes the consolidation of 6 lots and the construction of a self-storage facility on 2.21 acres. The 3 existing residential structures and their associated outbuildings will be removed.

The project will be connected to the Towamencin Township collection system and will generate 180 gallons of sewage per day (gpd) to be treated at the Towamencin Municipal Authority's Wastewater Treatment Facility.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street

Mr. Robert Ford, Manager

- 2 -

May 21, 2020

P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

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IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

If you have any questions or concerns, please contact me at 484.250.5179 or subanks@pa.gov.

Sincerely,



Suzanne Banks
Sewage Planning Specialist 1
Clean Water

cc: Montgomery County Health Department (via email)
Montgomery County Planning Commission (via email)
Montgomery County Conservation District (via email)
Storage Partners of Towamencin, LLC (via email)
Ms. Enjeti – Eustace Engineering (via email)
Towamencin Municipal Authority (via email)
Planning Section
Re



December 4, 2020

SENT VIA ELECTRONIC MAIL ONLY

Mr. Robert Ford, Manager
Towamencin Township
PO Box 303
Kulpsville, PA 19443-0303
rford@towamencin.org

Re: Minor Act 537 Plan Update
Buttonwood Drive Sewer Extension
DEP Code No. 1-46949-202-3M
APS ID 1014929 AUTH ID 1335115
Towamencin Township
Montgomery County

Dear Mr. Ford:

The Department of Environmental Protection (DEP) has reviewed the proposed Official Sewage Facilities Plan Update (Plan) titled *Buttonwood Drive Sewer Connection* as prepared by All County and Associates, Inc., dated March 25, 2020 with updates received June 24, 2020, October 22, 2020, and last revised November 12, 2020. The plan proposes the extension of a low-pressure force main along Buttonwood Drive to connect to the existing sewer main in Wagon Wheel Lane. The submission is consistent with the planning requirements in Chapter 71 of DEP's regulations.

This plan revision is approved.

This plan provides for the immediate connection of 5 properties along Buttonwood Drive to the proposed force main extension via individual grinder pump. The plan also provides for an additional 3 properties to connect to the force main at a later date, as determined by Towamencin Township and the property owners. Connections will be provided to the following properties:

Address	Parcel #	Connection Schedule
1233 Buttonwood Drive	53-00-01260-00-1	Immediate
1255 Buttonwood Drive	53-00-01264-00-6	Immediate
1277 Buttonwood Drive	53-00-01268-00-2	Immediate
1290 Buttonwood Drive	53-00-01248-00-4	Immediate
1230 Buttonwood Drive	53-00-01236-00-7	Future
1250 Buttonwood Drive	53-00-01240-00-3	Future
1270 Buttonwood Drive	53-00-01244-00-8	Future
1643 Wagon Wheel Lane	53-00-01272-00-7	Immediate

This project will be connected to the Towamencin Township collection system and will generate 2,240 gallons of sewage per day (gpd) to be treated at the Towamencin Municipal Authority Wastewater Treatment Plant.

The proposed force main extension will be owned and maintained by Towamencin Township. The individual grinder pumps will be owned and maintained by the individual property owners.

Towamencin Township will assure the proper operation and maintenance of the proposed grinder pumps through Grinder Pump Operation and Maintenance Agreements, executed between Towamencin Township and the property owners.

Towamencin Township must secure a Clean Streams Law permit (Part II permit) from DEP for the proposed sewer infrastructure improvements.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Mr. Robert Ford, Manager

-3-

December 4, 2020

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

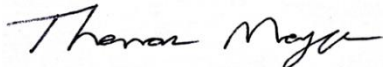
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IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

If you have any questions or concerns, please contact Ms. Suzanne Banks at 484.250.5179 and refer to DEP Code Number referenced above.

Sincerely,



Thomas Magge
Regional Manager
Clean Water

cc: Montgomery County Planning Commission (via email)
Montgomery County Health Department (via email)
Montgomery County Conservation District (via email)
Mr. Gray – All County and Associates, Inc. (via email)
Towamencin Municipal Authority (via email)
Planning Section
Re



April 7, 2021

SENT VIA ELECTRONIC MAIL ONLY

Mr. Robert Ford, Manager
Towamencin Township
PO Box 303
Kulpsville, PA 19443-0303
rford@towamencin.org

Re: Approval Letter – Exemption
Act 537 Planning
CORE5 at Park 31
DEP Code No. 1-46949-210-E
Towamencin Township
Montgomery County

Dear Mr. Ford:

The Department of Environmental Protection (DEP) has received the above-referenced sewage facilities planning application. This letter confirms DEP's determination that the project is exempt from the requirement to revise the Official Plan for new land development. This determination is based in part on municipal and other signoffs. The proposed development is located at 2130 Allentown Road in Towamencin Township, Montgomery County on Tax Map Parcel 53-00-00248-00-5.

This project proposes a 2-lot subdivision on approximately 73 acres, as depicted on the *Overall Site Plan (Record Plan Sheet 1 of 7)*, prepared by Cornerstone Consulting Engineers & Architectural, Inc., dated September 6, 2019 and last revised June 19, 2020. Lot 1 will contain 58.7 acres and be developed with 3 warehouse buildings with a total area of 591,360 square feet. The warehouse buildings will connect by gravity lateral to public sewer via a manhole located in Wambold Road.

Lot 2 will be comprised of 14.3 acres and contain an existing dwelling, currently served by an onlot sewage disposal system. This exemption also allows for the connection of the existing dwelling to public sewer located in Derstine Road, as depicted on the *Utility Plan (Low Pressure Force Main)*, prepared by Cornerstone Consulting Engineers & Architectural, Inc., dated September 6, 2019 and last revised February 15, 2021.

Mr. Robert Ford

- 2 -

April 7, 2021

The project will be connected to the Towamencin Township collection system and will generate 6,230 gallons of sewage per day (gpd) to be treated at the Towamencin Municipal Authority Wastewater Treatment Facility.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

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IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

Mr. Robert Ford

- 3 -

April 7, 2021

If you have any questions or concerns, please contact me at 484.250.5179 or subanks@pa.gov.

Sincerely,



Suzanne Banks
Sewage Planning Specialist 1
Clean Water

cc: Montgomery County Health Department (via email)
Montgomery County Planning Commission (via email)
Montgomery County Conservation District (via email)
Mr. Brunkan – Cornerstone Consulting Engineers & Architectural, Inc. (via email)
Mr. Dingman – Gilmore & Associates, Inc. (via email)
Mr. McCorkle – Bursich Associates, Inc. (via email)
CORE5 Industrial Partners, LLC (via email)
Planning Section
Re



February 23, 2022

SENT VIA ELECTRONIC MAIL ONLY

Mr. Donald D. Delamater, Manager
Towamencin Township
PO Box 303
Kulpsville, PA 19443-0303
info@towamencin.org

Re: Approval Letter – Exemption
Act 537 Planning
1600 Delp Drive
DEP Code No. 1-46949-211-E
Towamencin Township
Montgomery County

Dear Mr. Delamater:

The Department of Environmental Protection (DEP) has received the above-referenced sewage facilities planning application. This letter confirms DEP's determination that the project is exempt from the requirement to revise the Official Plan for new land development. This determination is based in part on municipal and other signoffs. The proposed development is located at 1600 Delp Drive in Towamencin Township, Montgomery County on Tax Map Parcels 53-00-02280-30-4, 53-00-02280-35-8, 53-00-02280-40-3, 53-00-02280-43-9, 53-00-02280-49-3, 53-00-02280-52-9, 53-00-02280-55-6 and 53-00-02280-58-3.

This project proposes the consolidation of 8 lots and the construction of a 267,648-square-foot warehouse building with up to 100 employees on 27 acres.

The project will be connected to the Towamencin Township collection system and will generate 2,500 gallons of sewage per day (gpd) to be treated at the Towamencin Municipal Authority Wastewater Treatment Facility.

Other DEP permits may be required for construction if encroachment of streams or wetlands will result. Information regarding the requirements for such permits or approvals can be obtained from DEP's Watershed Management Program

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Mr. Donald D. Delamater

- 2 -

February 23, 2022

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

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IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

If you have any questions or concerns, please contact me at 484.250.5179 or subanks@pa.gov.

Sincerely,



Suzanne Banks
Sewage Planning Specialist 2
Clean Water

cc: Montgomery County Health Department (via email)
Montgomery County Planning Commission (via email)
Montgomery County Conservation District (via email)
Mr. Hahn – Verus Partners, LLC (via email)
Mr. Dingman – Gilmore & Associates, Inc. (via email)
Mr. McCorkle – Bursich Associates, Inc. (via email)
Planning Section

66 Pa. C.S. Section 1329 Application Completeness Review
Pennsylvania-American Water Company – Wastewater Division
Acquisition of Towamencin Township Wastewater System Assets
at Docket No. A-2023-3039900

20. Checklist Item No. 22.b. – The Application’s Appendix A-22-b included a copy of a document entitled “Towamencin Township Sewage Facilities Plan Act 537 Plan” (1987 Act 537 Plan) dated July 1987, prepared by EDM Consultants, Inc. However, Checklist Item No. 22.b. requires the applicant to provide a copy(s) of the DEP-approved Act 537 Official Sewage Facilities Plans (Act 537 Plans) for the affected municipalities. The Application’s Section 1 indicated the affected municipalities include portions of Lower Salford, Worcester, and Franconia Townships, and the Borough of Lansdale. Please provide copies of the most recent DEP-approved Act 537 Plans for the aforementioned municipalities along with copies of the DEP approval letters.

Response: Please see **Amended Appendix A-22-b**.

66 Pa. C.S. Section 1329 Application Completeness Review
Pennsylvania-American Water Company – Wastewater Division
Acquisition of Towamencin Township Wastewater System Assets
at Docket No. A-2023-3039900

21. Checklist Item No. 22.b. – The 1987 Act 537 Plan, Section 2.21 – Boundaries and General Physical Characteristics, indicated the existing sewage facilities planning area and service area boundaries include the area defined by the Montgomery County 1972 Sewage Facilities Plan for Towamencin Township and the subsequent updates. Additionally, the 1987 Act 537 Plan also indicated that the Act 537 Plans for Lansdale Borough and Worcester, Lower Salford, Hatfield and Upper Gwynedd Townships also impact Towamencin’s planning area since sewage flows within these municipalities boundaries enter the Collection System and are part of the overall service area. Please provide responses to the following:

a. Provide a copy of the Montgomery County 1972 Sewage Facilities Plan for Towamencin Township and any subsequent updates; and

Response: Please see **Attachment 21-A**.

b. Provide copies of the most recent DEP-approved Act 537 Plans for both Hatfield and Upper Gwynedd Townships.

Response: Please see **Attachment 21-B.1**, for the Hatfield Township DEP-approved Act 537, and **Attachment 21-B.2**, for the Upper Gwynedd Township DEP-approved Act 537.

Attachment 21-A
MCPC OFFICE COPY
Page 1 of 94
NOT TO BE REMOVED

MONTGOMERY COUNTY, PENNSYLVANIA



SEWAGE FACILITIES PLAN

MONTGOMERY COUNTY, PENNSYLVANIA

BOARD OF COUNTY COMMISSIONERS

A. Russell Parkhouse, *Chairman*
Frank W. Jenkins Lawrence H. Curry

COUNTY PLANNING COMMISSION

Charles Tornetta, *Chairman*
Robert G. Werden, *Vice-Chairman*
Phillip L. Corson George D. McKeon
Feodor U. Pitcairn Frank D. Morgan
John M. Wright Steve A. Stavrou
Willard S. Detweiler, Jr.

Arthur F. Loeben, Director



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APPENDIX A

EVOLVEMENT OF MONTGOMERY COUNTY SEWAGE FACILITIES PLAN ADOPTION

A series of meetings were held to familiarize the county municipalities with the basic concepts of the Montgomery County Sewage Facilities Plan. Using these discussions as a guide, the original report was compiled and distributed to the governing body of each municipality. A letter was included asking for their review and comment of the report. Approval and acceptance of the plan was encouraged.

In an appendix to the original report, a sample resolution adopting the sewage facilities plan in accordance with Pennsylvania Act 537 was provided as a guide for municipal adoption.

Since its transmittal in May 1971, 60 municipalities adopted the plan by formal resolution of their governing body. Some municipalities made revisions and adopted the plan with the condition that these revisions would be incorporated into the final sewage facilities plan.

The sewage facilities plan was revised and edited to conform to the conditions articulated by the various municipalities in their process of formal adoption. The Montgomery County Planning Commission accepted this final plan as an element of the county comprehensive plan and the official 10-year plan for sewage facilities by formal resolution and recommended its formal adoption by the Montgomery County Board of Commissioners.

The County Commissioners scheduled a public hearing to consider the adoption of the county sewage facilities plan as: (1) the official 10-year plan for sewage facilities (in compliance with Act 537), and (2) the first element of the Montgomery County Comprehensive Plan (pursuant to Act 247 as amended). The public hearing was held on Thursday, October 26, 1972 and was legally advertised in various newspapers in the county.

The Board of County Commissioners formally adopted the Montgomery County Sewage Facilities Plan as the first element of the county comprehensive plan and a plan to meet Act 537 requirements at this public hearing. A formal resolution adopting the plan was prepared and approved, to be effective as of the date of the public hearing.

Copies of the original letter introducing the plan and formal resolutions affecting the final adoption of the Montgomery County Sewage Facilities Plan are found in the following pages of this appendix.

MONTGOMERY COUNTY
PLANNING COMMISSION



COUNTY OF MONTGOMERY
COURT HOUSE
NORRISTOWN, PENNSYLVANIA

To: Governing Bodies of the Municipalities
of Montgomery County

Gentlemen:

We are pleased to transmit herewith the Sewage Facilities Plan for Montgomery County, prepared in compliance with the provisions of the Pennsylvania Sewage Facilities Act (Act 537 of 1966). It is submitted for your review, approval and acceptance.

The Sewage Facilities Plan includes reference to long range sewer programs, but emphasizes the ten-year period 1969-1979 in accordance with the requirements of the Act. The plan is a joint effort of our engineering consultant, Albright and Friel, and the staff of this Commission. It will meet the planning requirements of the State law and when adopted, insure the flow of State and Federal Grants-in-Aid so essential for construction of the facilities. The plan includes recommendations on the development of public sewer facilities, as well as the disposition of all existing sewer treatment plants in the county.

You are requested to review and approve this plan and to officially adopt it, in accordance with the Pennsylvania Sewage Facilities Act. Your action should be by formal resolution and a suggested resolution is found in Appendix A of this report, for your convenience.

The preparation of this plan has taken more than two years since you accepted the offer of the County Commissioners. You and your officials have helped us a great deal and we appreciate your support. We look forward to receiving your resolution.

Sincerely yours,

Charles Tornetta
Chairman

RESOLUTION ADOPTING THE MONTGOMERY COUNTY
SEWAGE FACILITIES PLAN IN ACCORDANCE WITH PENNSYLVANIA ACT 537

WHEREAS, Pennsylvania Act 537 (the Sewage Facilities Act) was enacted by the General Assembly of Pennsylvania in 1966; and

WHEREAS, the act requires each township and borough in the County to prepare a ten-year plan for sewage facilities, which must be submitted to the Pennsylvania Department of Health for approval; and

WHEREAS, the Pennsylvania Department of Health has recommended that the act's requirements can best be accomplished on a county-wide basis; and

WHEREAS, the Montgomery County Commissioners acting upon the recommendation of the Pennsylvania Department of Health, the Montgomery County Sewer Authority, and the Montgomery County Planning Commission did offer assistance to the municipalities in meeting their Act 537 requirements on a county-wide basis; and

WHEREAS, _____ did by formal resolution
(Township/Borough)
dated _____, authorize the County of Montgomery to prepare the sewage facilities plan on its behalf; and

WHEREAS, Montgomery County, through the staff of the Montgomery County Planning Commission and the consulting engineering firm of Albright and Friel, Inc. did prepare a ten-year plan for sewage facilities; and

WHEREAS, the appropriate municipal officials of this community have reviewed the findings and recommendations of that plan, as it affects this municipality and have found the plan acceptable and have recommended that the plan be adopted.

NOW THEREFORE BE IT RESOLVED THAT THE _____
(Board of Commissioners/Board
of Supervisors/Borough Council)
of _____ hereby accepts and adopts the
(Township/Borough)
"Montgomery County Sewage Facilities Plan", prepared by the Montgomery County Planning Commission and Albright and Friel, Inc., March, 1971 as the official ten-year plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966; and

BE IT FURTHER RESOLVED THAT:

- (1) the Montgomery County Planning Commission is hereby authorized to submit the plan to the Pennsylvania Department of Health for review and approval with the understanding that if any changes are necessary they will be submitted to this municipality for our concurrences, and that a process will be established whereby the complete plan or any part thereof may be amended at any time upon request by this municipality; and,
- (2) the municipality agrees that information concerning changes (for example, any extension of service, construction or expansion of sewer treatment plants), to the sewerage system of this municipality will be transmitted by the appropriate municipal official(s) to the Montgomery County Planning Commission on or about the first of June of each year so that the county-wide inventory of existing sewage systems can be properly maintained and in turn it is understood that the county will keep this municipality fully informed of all amendments to the plan that may affect us.

RESOLUTION OF THE
MONTGOMERY COUNTY PLANNING COMMISSION
ACCEPTING THE
MONTGOMERY COUNTY SEWAGE FACILITIES PLAN
AS AN ELEMENT OF THE COUNTY COMPREHENSIVE PLAN AND
RECOMMENDING ITS FORMAL ADOPTION
AS AN ELEMENT OF THE COUNTY COMPREHENSIVE PLAN
BY THE MONTGOMERY COUNTY BOARD OF COMMISSIONERS

WHEREAS, Pennsylvania Act 537 (the Sewage Facilities Act) was enacted by the General Assembly of Pennsylvania in 1966; and

WHEREAS, the act requires each township and borough in the County to prepare a 10-year plan for sewage facilities, which must be submitted to the Pennsylvania Department of Health for approval; and

WHEREAS, the Pennsylvania Department of Health had recommended that the act's requirements can best be accomplished on a county-wide basis; and

WHEREAS, the Montgomery County Commissioners acting upon the recommendation of the Pennsylvania Department of Health, the Montgomery County Sewer Authority, and the Montgomery County Planning Commission did offer assistance to the municipalities in meeting their Act 537 requirements on a county-wide basis; and

WHEREAS, 60 of the 62 municipalities located in Montgomery County did, by individually enacted formal resolutions passed in 1966 to 1968, authorize the County of Montgomery to prepare the Sewage Facilities Plan on their behalf; and

WHEREAS, Montgomery County, through the staff of the Montgomery County Planning Commission did prepare a 10-year plan for sewage facilities; and

WHEREAS, the staff of the Montgomery County Planning Commission did distribute copies of the Sewage Facilities Plan of March 1971 to representatives of each of the 60 municipalities for their review, comment and adoption by their respective governing body in May of 1971; and

WHEREAS, the staff of the Montgomery County Planning Commission has followed up that distribution with various contacts in the intervening period to offer assistance in the local review and adoption process; and

WHEREAS, the duly elected governing bodies of 56 municipalities, following review of the findings and recommendations of that Plan, did find the plan acceptable and did by formal resolution accept and adopt the Montgomery County Sewage Facilities Plan as the official 10-year plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966; and

WHEREAS, the population residing in these 56 townships and boroughs totals 571,588 persons which represents 95.2% of the applicable county total of 600,139 persons (residing in the 60 townships and boroughs included in the Plan according to the 1970 Census of Population); and

WHEREAS, the Sewage Facilities Plan of March 1971 has been revised and edited to conform to the conditions articulated by the various municipalities in their process of formal adoption, thereby reflecting local refinements and said revisions have been embodied in the updated report known hereafter as the Montgomery County Sewage Facilities Plan of May 1972; and

WHEREAS, the Citizens Advisory Committee on County Planning (CitAC) did review and accept the plan as submitted with the recommendation that it be accepted by the Planning Commission and adopted by the Board of County Commissioners as an element of the County Comprehensive Plan; and

WHEREAS, Montgomery County Planning Commission board has carefully reviewed the findings and recommendations of the plan as it affects the county and the municipalities in the county and have found the plan to be an acceptable guide; and

WHEREAS, the Montgomery County Planning Commission has directly related the findings and recommendations of the Sewage Facilities Plan to the overall County-wide Comprehensive Plan (which is currently in the third year of preparation with financial assistance provided in part through urban planning assistance grants from the Federal Department of Housing and Urban Development under the provisions of Section 701 of the Housing Act of 1954 as amended and as administered by the Bureau of Planning, Pennsylvania Department of Community Affairs); and

WHEREAS, the Montgomery County Planning Commission board hereby finds that the Montgomery County Sewage Facilities Plan of May 1972 to be an integral element of the County Comprehensive Plan.

NOW THEREFORE BE IT RESOLVED THAT:

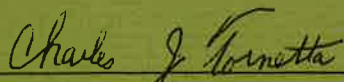
(1) the Board of the Montgomery County Planning Commission hereby accepts the Montgomery County Sewage Facilities Plan of May 1972 prepared by the Montgomery County Planning Commission as the official 10-year plan for sewage facilities in compliance with the Pennsylvania Sewage Facilities Act of 1966, (Act 537) and as the first element of the Montgomery County Comprehensive Plan pursuant to Section 209 of the Pennsylvania Municipal Planning Code (Act 247); and

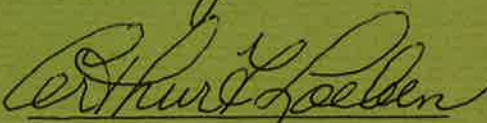
(2) the Board of the Montgomery County Planning Commission hereby recommends the Board of the County Commissioners to formally adopt the Montgomery County Sewage Facilities Plan, which is attached hereto and made a part hereof, in accordance with Pennsylvania Act 537 (the Sewage Facilities Act) and Pennsylvania Act 247, (Section 209 of the Municipal Planning Code); and

(3) a copy of this resolution be sent to the Board of the County Commissioners for their action; and

(4) when and if the Sewage Facilities Plan of May 1972 is adopted by the Board of County Commissioners, the staff is directed to publish and distribute the Plan to all municipal governing bodies and planning commissions in the county, and the staff is further directed to prepare a brochure summarizing the salient points of the Sewage Facilities Plan for widespread distribution to the general public.

The above is hereby certified to being a true and accurate copy of a resolution adopted by the Board of the Montgomery County Planning Commission on


Chairman


Secretary

RESOLUTION OF THE
BOARD OF COMMISSIONERS
ADOPTING THE
MONTGOMERY COUNTY SEWAGE FACILITIES PLAN
AS THE OFFICIAL TEN-YEAR PLAN FOR SEWAGE FACILITIES
AND AS AN ELEMENT OF THE
COUNTY COMPREHENSIVE PLAN
October 26, 1972

72 - C. 323

WHEREAS, the Montgomery County Board of Commissioners acting upon the recommendation of the Pennsylvania Department of Health, the Montgomery County Sewer Authority and the Montgomery County Planning Commission, did offer assistance to the 62 municipalities in Montgomery County in meeting their requirements under the Pennsylvania Sewage Facilities Act (Act 537) on a county-wide basis; and

WHEREAS, 60 of the municipalities located in Montgomery County did by individually enacted resolutions authorize the County of Montgomery to prepare the Sewage Facilities Plan on their behalf; and

WHEREAS, Montgomery County through the county planning commission did prepare a ten-year plan for sewage facilities; and

WHEREAS, the duly elected governing bodies of the 60 municipalities, following review of the plan, did find the plan acceptable and did by resolution adopt the Montgomery County Sewage Facilities Plan as the official ten-year plan for sewage facilities; and

WHEREAS, the Montgomery County Planning Commission, at the June 1972 regular monthly meeting approved and accepted the Sewage Facilities Plan of May 1972 by resolution, and did recommend to the Board of County Commissioners formal adoption of the Plan as:

- (a) the official ten-year plan for sewage facilities (in compliance with Act 537), and
- (b) the first element of the Montgomery County Comprehensive Plan pursuant to Section 209 of the Pennsylvania Municipal Planning Code (Act 247 as amended), and

WHEREAS, a public hearing was duly held by the Montgomery County Board of Commissioners pursuant to Section 302 of the Pennsylvania Municipal Planning Code on October 26, 1972; and

WHEREAS, the documents and matters which form the Montgomery County Sewage Facilities Plan of May 1972 are hereby incorporated by reference and are made a part of this resolution, and are available at the offices of the county planning commission;

NOW THEREFORE BE IT RESOLVED THAT: the Board of Commissioners of Montgomery County hereby accepts and adopts the Montgomery County sewage Facilities Plan of May 1972 as:

- (a) an element of the County Comprehensive Plan in accordance with (Act 247 of 1966), the Pennsylvania Municipalities Planning Code; and
- (b) the official ten-year plan for sewage facilities in accordance with the Pennsylvania Sewage Facilities Act (Act 537 of 1966); and

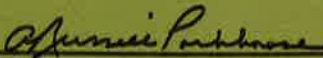
NOW THEREFORE BE IT FURTHER RESOLVED THAT: the county planning commission is directed to transmit the Sewage Facilities Plan of May 1972, copies of the municipal resolutions adopting the plan and a copy of this resolution to appropriate state officials for their review and approval pursuant to Act 537; and

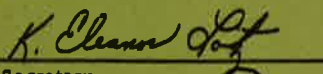
BE IT FURTHER RESOLVED THAT: the Montgomery County Planning Commission is directed to publish and distribute the plan to all municipal governing bodies and planning commissions in the county and is further directed to prepare a brochure summarizing the salient points of the Sewage Facilities Plan for widespread distribution to the general public; and

BE IT FURTHER RESOLVED THAT: certified copies of this resolution are to be lodged with the proper official of this Board, with the Montgomery County Planning Commission and be sent to the municipal governing bodies and planning commissions in the county.

This resolution shall be effective as of October 26, 1972.

The above resolution is adopted on motion of Mr. Jenkins, seconded by Mr. Curry, and unanimously carried on this day of October 1972, at 11:40 o'clock prevailing time.


Chairman


Secretary



AN ELEMENT OF THE
MONTGOMERY COUNTY
COMPREHENSIVE PLAN

SEWAGE FACILITIES PLAN
1972



MONTGOMERY COUNTY PLANNING COMMISSION

Court House, Norristown, Pennsylvania

The Montgomery County Planning Commission was established in 1950 by the county commissioners as a research and service unit to the county government, the municipalities, and the citizens of the county. Major functions of the commission include: preparing a county comprehensive plan; furnishing technical assistance to the municipalities of the county; assisting municipalities to complete and implement comprehensive plans in accordance with Act 247, the "Pennsylvania Municipalities Planning Code"; mapping the county and its municipalities; reviewing all land subdivisions of two or more lots; rendering information about the county; stimulating local planning groups; conducting planning research; cooperating with other planning groups; assisting the coordination of land development within the county; and representing the county in the coordination of metropolitan, state, and federal projects, programs, and problems which affect Montgomery County.



December 1972

Board of County Commissioners
Department of Environmental Resources
Governing Bodies and Planning Commissions
of Montgomery County Municipalities

Gentlemen:

The Montgomery County Planning Commission is pleased to hereby transmit the sewage facilities plan for the county, prepared in compliance with the provisions of the Pennsylvania Sewage Facilities Act (Act 537 of 1966) and the Pennsylvania Municipalities Planning Code (Act 247 of 1968).

On October 26, 1972, the County Commissioners passed a formal resolution adopting this plan. In accordance with that resolution, the plan has been published and is hereby being distributed to all governing bodies and planning commissions, in addition to appropriate state officials.

The sewage facilities plan includes reference to long-range sewer programs, but emphasizes the 10-year period from 1969-1979 in accordance with the requirements of the act. The plan is a joint effort of our engineering consultant, Albright and Friel, and the staff of this commission.

The plan meets the planning requirements of state law and, with adoption, insures the flow of state and federal grants-in-aid which are so essential for construction of the facilities. Recommendations on the development of public sewer facilities are included, as well as the disposition of all existing sewer treatment plants in the county.

The plan has received widespread acceptance by the governing bodies of local municipalities. As of September 1972, 60 municipalities reviewed and adopted the plan. The municipal review has resulted in several revisions to the original text, all of which have been incorporated herein.

The county planning commission has approved and accepted the plan as the official 10-year plan for sewage facilities and as the first element of the county comprehensive plan. Additional elements will follow as they are completed.

Through the initiative of the County Commissioners, the local municipalities were offered aid in fulfilling their Act 537 requirements. We are pleased to receive their resolutions adopting the plan which has brought to culmination the first element of the Montgomery County Comprehensive Plan.

Sincerely yours,

A handwritten signature in cursive script that reads "Charles Tornetta".

Charles Tornetta
Chairman

ACKNOWLEDGEMENTS

This report was prepared by the Montgomery County Planning Commission and the firm of Albright & Friel, Inc. who served as engineering consultants. The assistance provided by various staff representatives in the Pennsylvania Department of Health is gratefully acknowledged. While many members of the department contributed in some way to the preparation of this report, the following deserve special note: Harry Frey - Supervising Sanitarian, Montgomery County Health Office (until May of 1969); Joseph Hayes, Supervising Sanitarian, Montgomery County Health Office (since August of 1969); and John Burton, Regional Coordinator. The preparation of this report was financed in part by the Pennsylvania Department of Environmental Resources as provided for in the Pennsylvania Sewage Facilities Act (Act 537 of 1966).

Both the Montgomery County Planning Commission and Albright & Friel note with appreciation the particularly valuable assistance provided by municipal governing bodies and planning commissions, sewer authorities, sewer plant operators and various consulting sewer engineers who have aided in the preparation of this plan by freely giving of their time for interviews and providing helpful information and reports.

The firm of Albright & Friel is primarily responsible for the gathering of engineering data, its evaluation and the formulation of recommendations for the provision of needed sewage facilities. The following staff members of Albright & Friel contributed to the production of this report: Robert P. Heurich-P.E., Vice-President; Albert H. Petersen-P.E., Project Manager.

The staff of the Montgomery County Planning Commission was primarily responsible for the gathering of data and the formulation of projections including population and land development, analysis of various sewer-associated factors, report writing, graphics and reproduction. The following staff members took an active role in the development of this plan: Frederic T. Dannerth, Deputy Director; Kent R. Miller, Principal Planner (since July 1970); James W. Tethers, Community Planner (until July 1970); and Michael A. Wolf, Assistant Planner.

The Montgomery County Planning Commission hereby extends its appreciation to all groups and persons who contributed their time and knowledge to the development of this plan.

I

DEVELOPMENT FACTORS RELATED TO SEWAGE FACILITIES PLANNING

It is necessary to consider various aspects of land development and community growth when undertaking the preparation of a county-wide sewage facilities plan. Such information reveals the magnitude of present conditions and provides a base from which to extrapolate future needs. Valuable background information that influences plans for the disposal of wastewater in Montgomery County includes the spatial arrangement of land uses, the distribution of population and the pattern of employment.

Through the systematic assembling of this type of information, a valuable overview can be obtained that provides valuable perspective not only on a county-wide basis, but for each of the 62 municipalities of the county as well. In addition to determining past, present and anticipated characteristics in the broad sense, this data serves to provide the necessary "in depth" input which permits the formulation of specific planning recommendations involving sewage facilities. The information contained in this chapter has been used extensively in the preparation of the subsequent sections of the county-wide sewage facilities plan.

PATTERNS OF LAND USE

1. High density and compact development typifies many of the older settlements in Montgomery County. Because of the pattern of land use prevailing prior to World War II, public sewer service was relatively easy to provide either at the time of development or more recently, and much developed land in the county was served by a public sewer system as well as by other urban amenities.

2. With the popularization of the automobile and the subsequent dispersal of lower density land developments following World War II, the provision of public sewer service became more difficult.

3. The historic pattern of small towns amid open country is still very prevalent in the western portions of the county despite inroads by scattered development. In the eastern portion of the county the historic pattern has been virtually obliterated by suburban development. The suburban development has presented a major challenge in the provision of public sewer service since World War II and is expected to pose a major problem during the 10-year period of the county sewage facilities plan.

4. From a county-wide perspective, the tremendous impact of land development occurring on the landscape can be recognized when one considers that between the earliest settlement and 1930 only 6.9% of the county's landscape had been developed; by 1960 the figure "jumped" to 20% and by 1985 estimates indicate that approximately 36% of the county's landscape will be classified as developed. In absolute terms this means approximately 51,000 acres (or 80 square miles) of land will be developed within the 25-year period between 1960 and 1985, or about 16% of all land in Montgomery County.

5. Of the 10 planning areas delineated for purposes of county-wide analysis (figure i-2), the areas demonstrating the greatest increase in land development between 1960 and 1985 are the North Penn Area (number 8),

Figure i-1

COUNTY-WIDE LAND USE, POPULATION AND EMPLOYMENT DATA
FOR 1930, 1960 AND 1985

	<u>1930</u>	<u>1960</u>	<u>1985</u>
Developed Lands - Total Acres	21,410	61,405	112,399
% of Total Land	6.9	19.9	36.4
Residential Land Development Acres	Not Available	49,250	87,494
% of Total Land	--	15.9	28.3
Population Persons	265,804	516,682	933,400
% of Increase	--	94.38	80.65
Total Employment Persons	107,218	165,334	330,000
% of Increase	--	54.20	99.59
Industrial Employment Persons	33,118	76,684	167,148
% of Increase	--	131.54	117.96

Sources: U.S. Census Data (1930 and 1960); Delaware Valley Regional Planning Commission Estimates; and Montgomery County Planning Commission Estimates.

the Lower Perkiomen Valley (number 7), the Ambler Area (number 2) and Upper Eastern Montgomery County (number 1). This observation is based on viewing land development both on an absolute and percentage bases. The four planning areas above show the greatest growth in terms of land development presently on the "suburban fringe."

The areas that will experience the least growth in developed lands during the same 25-year period are Lower Eastern Montgomery County (number 3), the Pottstown Area (number 10) and the Upper Perkiomen Valley (number 9). Two of the areas are largely developed and consequently show lower proportions of growth while the third area is mostly rural and is not expected to experience much growth in either absolute or percentage terms.

POPULATION GROWTH AND PROJECTIONS

1. Since 1910, Montgomery County has been growing at a rate exceeding that of both the nation and the state. Between 1950 and 1960 the county's growth rate was more than twice that of the nation and six times that of the state.

2. The county's population has approximately doubled in size every 40 years since 1800. By comparison it is expected that the county's population will double in the 30-year period beginning with 1960. The total county population is expected to pass the one million mark around the year 1990.

3. In the 30 years between 1930 and 1960 the county's population "jumped" one quarter of a million to 516,682. In the 25-year period ending in 1985 the county-wide population increases are expected to be approximately 417,000.

4. Planning areas (delineated in figure i-2) that are expected to experience the greatest population increase based on a combination of absolute and percentage increases are the Lower Perkiomen Valley (number 7), Ambler Area (number 2), North Penn (number 8) and Upper Eastern Montgomery County (number 1).

These four planning areas are on the suburban fringe and are the same four that are expected to experience the greatest increase in developed land.

5. The planning area showing the least population increase in Montgomery County during this 25-year period is the Pottstown Area (number 10). It also stands out as one of the three planning areas experiencing the least increase in developed land.

6. On a municipal basis, four communities (Upper Dublin, Plymouth, Lower Merion and Upper Merion townships) can expect an absolute increase in excess of 20,000 persons between 1960 and 1985. At the other end of the spectrum, Upper Frederick Township and the eight boroughs of Pottsville, Red Hill, Green Lane, East Greenville, Schwenksville, Rockledge, Bryn Athyn and West Conshohocken can each expect a population increase of less than 1,000 persons during this same time period.

7. On a county-wide basis, estimates indicate that 491,000 persons reside in areas now served by public sewer systems. This represents approximately 74% of the county's population.

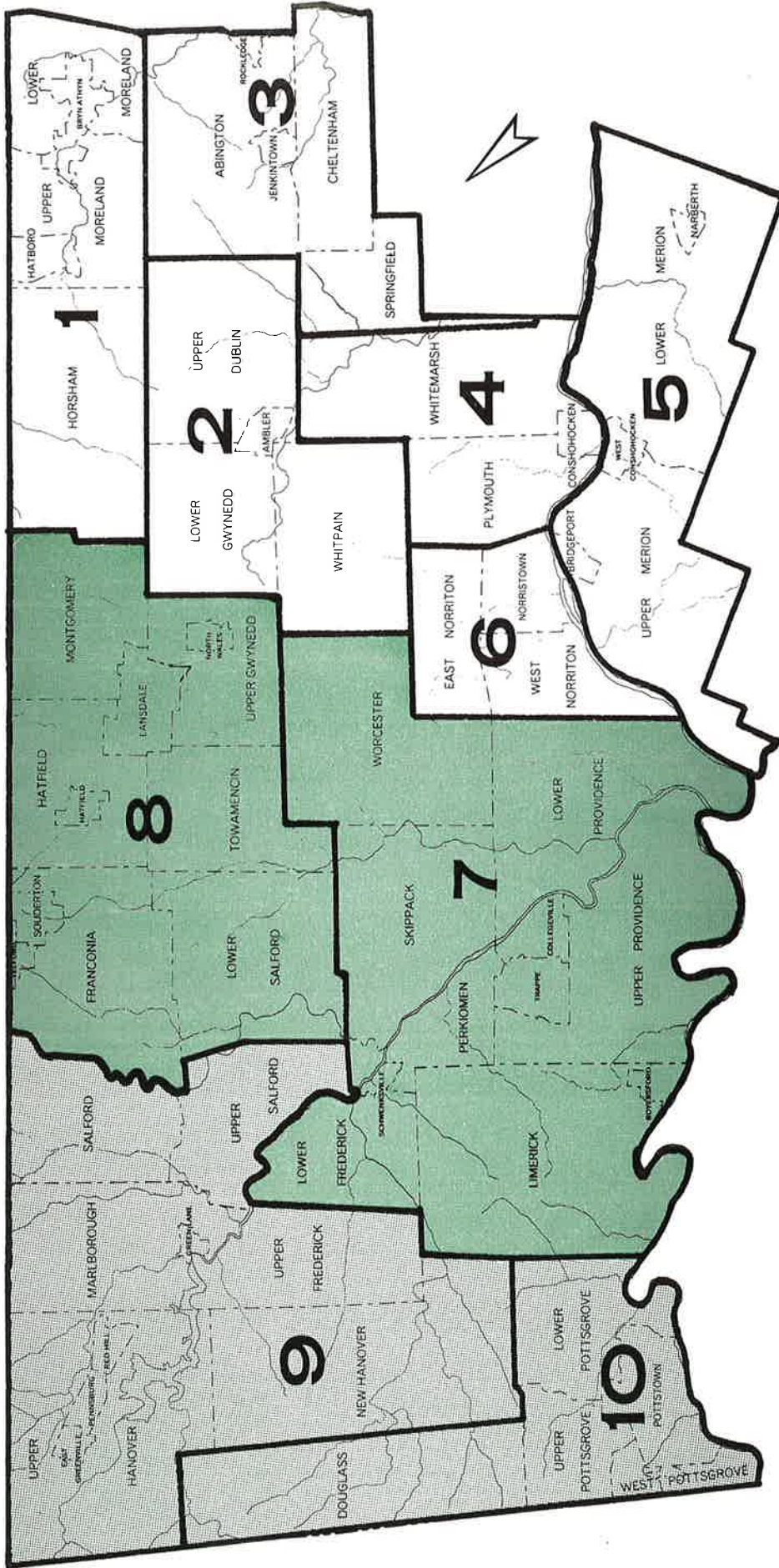
8. Population estimates and projections have also been prepared by 15 drainage basins or major stream reaches in Montgomery County. The drainage basins expected to experience the greatest population increase are Wissahickon, Neshaminy, Stony, Skippack and Pennypack. Those drainage basins with the least population growth during the same 25-year period are Indian, Schuylkill-central, Upper Perkiomen and Tookany. There is a direct bearing between population increase by drainage basins and sewage facilities planning.

DISTRIBUTION OF EMPLOYMENT

1. Between 1930 and 1960, the number of persons gainfully employed within Montgomery County increased by 58,000 to a total of 165,000. By 1985 this figure is expected to double with another 165,000 people being gainfully employed within the county boundaries.

2. Industrial employment shows even more impressive increases county-wide than does general employment of all types. Between 1930 and 1960

DEVELOPMENT TRENDS IN MONTGOMERY COUNTY PLANNING AREAS, 1960-1985



- Planning Areas of Greatest Growth
- Planning Areas of Least Growth
- Planning Areas of Average Growth

MONTGOMERY COUNTY PLANNING COMMISSION

The preparation of this map was financed in part by the Pennsylvania Department of Environmental Resources, as provided for in the Pennsylvania Sewerage Facilities Act (Act 537 of 1968).

Note: Numbers Indicate Planning Areas Prior to January, 1972.

Figure i-2

industrial employment increased by 43,600 persons to a 1960 level of 76,700. Between 1960 and 1985 it is anticipated that industrial employment will increase by 90,000 persons or by 118%.

3. Approximately one-fourth of the county's employment base is engaged in commercial activity and one-eighth is engaged in institutional employment. The balance of employees represents a variety of types including agricultural and domestic workers.

4. The North Penn Area (number 8 on figure i-2) and Lower Perkiomen Valley (number 7 on figure i-2) are expected to exhibit the greatest increase of employment of the 10 planning areas between 1960 and 1985. Both of these planning areas will also probably experience the greatest growth in terms of increased developed land and increased population in the same time period.

5. The Conshohocken (area 4), Norristown (area 6) and Pottstown (area 10) areas are the three planning areas expected to experience the least growth in terms of employment between 1960 and 1985.

Figure i-2 represents graphically those planning areas of greatest and least growth. These areas of growth were judged according to all three of the parameters previously mentioned, including land development, population and employment. These three parameters of growth were measured both absolutely and in terms of percentage increase. The results were then combined in such a way as to demonstrate planning areas of greatest and least "overall" growth.

In view of the tremendous growth that Montgomery County's municipalities have experienced since the end of World War II and the even greater growth that can be expected within the next 10 to 15 years, new ways must be found to resolve the problems associated with public sewage facilities. The development of a county-wide sewage facilities plan is believed to be the first step in that direction.



II

NATURAL FEATURES AND THEIR EFFECT ON SEWER PLANNING

The physical features of Montgomery County are significant from the standpoints of guiding the future growth of the county in general and in county-wide sewage facilities planning in particular. Topographic considerations, soils and natural drainage have a direct bearing on the historic as well as the projected distribution of various types of land use, circulation systems, population growth, community facilities and a wide spectrum of those ingredients required to make a viable community.

Included in this chapter of the report are the physiographic considerations (drainage basins, slopes and layer relief) which have a direct bearing on sewage facilities planning. Because of the interrelationship of soils and the use of on-site sewage disposal systems, the chapter includes a discussion of the distribution and effectiveness of on-site sewage disposal systems. The primary thrust of the chapter is to survey these natural features from a county-wide standpoint and to note the interrelationship between them and sewage facilities planning.

DRAINAGE BASINS OF MONTGOMERY COUNTY

1. All of Montgomery County lies within the Delaware River Drainage Basin and most of the county lies within the Schuylkill River Sub-basin.
2. Of the seven major regional sub-basins in Montgomery County, two (the Perkiomen and the Wissahickon) drain into the Schuylkill River which in turn drains into the Delaware River. The remaining five drain into the Delaware River and are the Pennypack, Poquessing, Neshaminy, Tookany (Tacony) and Darby (the Indian Creek tributary).
3. For the purposes of county-wide sewage facilities planning, 15 watersheds or major stream reaches have been identified, population estimates for each have been prepared and each of the 90 treatment plants located within Montgomery County has been identified as being located within its appropriate watershed (see figure ii-1).
4. The availability of public sewer services varies widely within these 15 drainage basins. Virtually all of the Tookany and Indian and portions of the Pennypack, Wissahickon and Schuylkill-south watersheds are served by treatment facilities located within Philadelphia. One is in Northeast Philadelphia and the other is in Southwest Philadelphia.
5. All 15 watersheds are served in part by public sewerage systems. Most also contain additional non-municipal and industrial wastewater treatment plants.
6. Two of the 15 watersheds have no sewage treatment plants at all (Stony and Indian), while at the other end of the spectrum the Wissahickon drainage basin has 18 treatment plants, the Lower Perkiomen, 12, and the Neshaminy, 10.

SLOPES AND LAYER RELIEF

1. The provision of public sewage facilities is rendered difficult in areas which either have extremely steep slopes or are nearly level.

Figure ii-1

POPULATION AND SEWAGE TREATMENT PLANTS BY WATERSHEDS IN
MONTGOMERY COUNTY

Watersheds	1960 Population	Sewage Treatment Plants			
		Municipal	Non- Municipal	Industrial	Total
Perkiomen-Upper	13,010	3	4	1	8
Swamp	7,010	2	3	0	5
Perkiomen- East Branch	7,520	2	1	0	3
Perkiomen-Lower	16,300	1	9	2	12
Schuylkill-North	47,220	2	2	2	6
Skippack	24,970	2	1	2	5
Neshaminy	18,590	3	4	3	10
Wissahickon	74,350	6	3	9	18
Pennypack	63,220	1	7	0	8
Tookany	61,370	0	0	1	1
Schuylkill-East	47,180	4	0	2	6
Schuylkill-South	63,360	3	0	3	6
Stony	33,740	0	0	0	0
Schuylkill-Central	12,990	0	1	1	2
Indian	25,850	0	0	0	0
Totals	516,680	29	35	26	90

Source: Montgomery County Planning Commission Population Estimates and data compiled from records of Department of Health and Albright & Friel.

2. Throughout Montgomery County's landscape slopes are relatively gentle and the provision of sewer service is, therefore, not generally inhibited by topographic considerations.

3. Montgomery County's elevation ranges from approximately 15 to 750 feet above sea level. The three lowest elevations are found where the Schuylkill, Tookany and Pennypack meet the Philadelphia County line. The highest elevations are found in the horseshoe area surrounding East Greenville, Pennsburg and Red Hill boroughs.

SOILS OF MONTGOMERY COUNTY

1. For planning purposes, a knowledge of soils can be used to ascertain areas of frequent flooding, areas where there is a high water table and areas where there is difficulty in establishing and/or maintaining properly functioning on-site sewage disposal systems.

2. By relying upon the "Soil Survey of Montgomery County, Pennsylvania," prepared by the Soil Conservation Service of the United States

Department of Agriculture in 1967, the various characteristics of soils can be determined with a high degree of accuracy and can be reliably mapped on a county-wide base.

3. The presence of a soil with those characteristics which hinder the proper absorption and filtration of on-site wastewater may create health hazards as well as public nuisance situations. Soil characteristics affecting the operation of on-site systems include permeability, depth to bedrock, depth to seasonal high water table, slope, stoniness and flood hazards.

4. The Pennsylvania Sewage Facilities Act indicates that on-site disposal systems should not be installed in areas where soil characteristics and certain other qualifying factors reveal that malfunctioning systems are to be expected.

5. For purposes of the act, the Pennsylvania Department of Health has established four categories of limitations for on-site sewage disposal. The four categories and a brief description of each are as follows:

a. Hazardous Limitations - These soils are generally not suitable for on-site disposal of sewage due to the possibility of ground water pollution or contamination. Most of these soils in Montgomery County are underlain by limestone formations.

b. Severe Limitations - These soils are not satisfactory for on-site disposal of sewage due to the presence of impervious water restricting layers, high water tables, flooding, steep slope, shallowness, etc.

c. Moderate Limitations - These soils may be suitable for on-site disposal of sewage provided the subsoil is permeable. They also include "man-made" soils as well as soils in their natural state.

d. Slight Limitations - These soils are generally suitable for on-site disposal of sewage.

6. The spatial distribution and areal extent of these four types of soils in Montgomery County is graphically presented in figure ii-2.

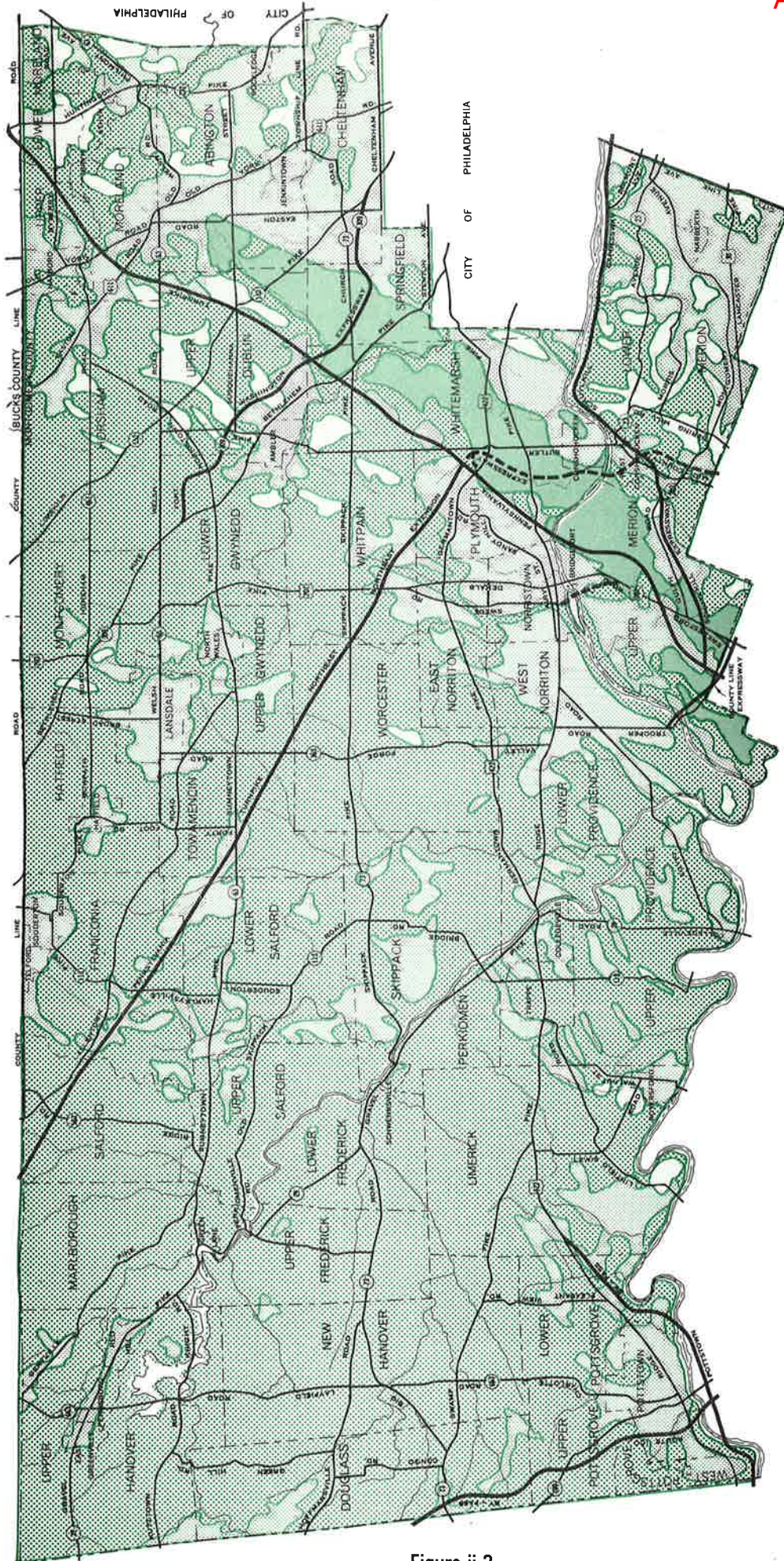
7. Examination of the soil suitability map reveals that the overwhelming predominance of soils in Montgomery County contains severe limitations for on-site disposal of sewage.

8. Virtually all soils in the hazardous limitation category are found in the Chester-Whitemarsh Valley to the Chester County line.





9. Generally speaking land development with on-site disposal systems should not be permitted on severe and hazardous soils unless public sewer service is to be provided within a reasonably short period of time. Municipalities should take appropriate steps to discourage development in this regard.

10. At the other end of the spectrum, soils designated as having slight limitations for on-site disposal facilities are not plentiful in Montgomery County and are widely dispersed. Comparatively little of the

SOIL SUITABILITY FOR ON-SITE SEWAGE DISPOSAL



Prepared by the Montgomery County Planning Commission
Court House, Norristown, Pennsylvania 1912
The preparation of this map was financed in part by the Pennsylvania Department of Environmental Resources, as provided for in the Pennsylvania Sewage Facilities Act (Act 537 of 1966).

	Hazardous		Moderate (Including Man-Made Soils)
	Severe		Slight

Source: Interpretation of Montgomery County Soil Survey by F. Glade Loughy, Soil Technologist, Pennsylvania Department of Health. Revised May 1972

Figure ii-2

county's landscape can be allocated to land use types which will rely upon on-site disposal systems as a permanent means of disposing of wastewater.

11. Soils in the moderate limitations category consist of basically two types of conditions - "man-made" soils and natural soils in rural areas. Most soils in the moderate limitation category consist of the "man-made" type of soil and can serve to represent a rough index to the degree of urbanization in Montgomery County. The moderate limitation soils that are in their natural state are widely scattered and do not encompass a significant portion of the county.

12. The relationship between soil conditions, public sewage facilities planning, community planning and land development patterns is an extremely important one and must be recognized as such.

13. Public sewer service is a necessity for most of the anticipated development that will occur in the county. It is evident that municipal officials must take positive steps to provide public sewers to those developed areas of the county that are not now served as well as to those undeveloped areas of the county that are expected to develop in the future.

THE USE OF ON-SITE SEWAGE DISPOSAL SYSTEMS

1. Over the years an ever increasing number of residents of Montgomery County have been served by public sewage facilities. Estimates indicate that 490,700 persons (or 74% of the estimated 1969 population) are connected to a public system. However, this means approximately 170,300 residents in Montgomery County are served by on-site disposal systems. Based upon the recommendations of the Montgomery County Sewage Facilities Plan, it is estimated that the number of county residents relying upon on-site systems will be dramatically reduced to approximately 38,000 through the implementation of an ambitious sewage facilities program. Thus it is estimated that 132,000 fewer persons will rely upon on-site systems in 1979 than in 1969 despite a county-wide population increase of approximately 168,000.

2. Evidence indicates that even apparently reliable on-site wastewater disposal systems may prove unreliable in the future. Increasing per capita water consumption overloads the capacity of on-site disposal systems. In the days when household water was pumped by hand from a well, the volume of wastewater was quite minimal and the disposal of wastewater was comparatively quite simple and safe. The electric pump facilitated obtaining household water in greater volume and led to such modern conveniences as flush toilets, washing machines, automatic washers, dishwashers and garbage disposal units. These various conveniences, which are so often viewed as essential to the homeowner, have caused many problems for on-lot disposal systems.

3. The ineffectiveness of on-site systems is difficult to measure statistically because the Pennsylvania Department of Health's records are kept on a "complaint basis" rather than as a result of a systematic surveillance. Many county residents are unaware of the Department of Health's role in questions affecting public sanitation, while others are reluctant to report malfunctioning for fear of costs resulting from remedial measures.

4. Many newly installed on-site sewer disposal systems appear to function satisfactorily for a period of time and possible health hazards are not recognized until they become quite severe. Based on past experience it can be concluded that many newly installed systems will malfunction after soils become saturated with effluent and can no longer dispose of wastewater. The inability to pinpoint a time period or to document the number of malfunctioning systems should not be viewed as an excuse for minimizing the problems.

5. On-site disposal systems are found throughout those portions of Montgomery County where public sewer service is not available. They are found in direct proportion to the density of development in such areas and are related to the magnitude of the potential problems encountered.

Because of the importance of relating sewage facilities planning to various physiographic considerations, a major thrust of the Montgomery County Sewage Facilities Plan places emphasis on watershed-wide considerations. Drainage basins, slopes and layer relief have been considered since they involve decisions and recommendations of the sewage facilities plan. This chapter has also included a discussion on the relationship between soils and the use of on-site sewage disposal systems in the county. Because of the prevalence of generally unfavorable soils for on-site disposal systems, their use in Montgomery County should be curtailed and greater reliance must be placed upon providing public sewage facilities wherever they can be economically justified and especially to new developments of significant proportions.

III

WATER SUPPLY AND THE QUALITY OF SURFACE WATER IN MONTGOMERY COUNTY

In recognition of the interrelationship between sewer planning and the sources and distribution of potable water as well as the quality of surface water, attention has been directed in this chapter to these subjects. The satisfactory disposition of sanitary wastewater has a direct bearing on both the ground water and the surface water of Montgomery County, and both are utilized in the county as sources of water supply. Insufficiently treated wastewater is a major cause of surface water pollution in Montgomery County and contributes to the contamination of ground water supplies as well. Malfunctioning on-site disposal systems can directly lead to the contamination of both surface and ground water. Sewage treatment plant discharges that "overwhelm" the natural capacities of receiving streams directly lead to the contamination of surface water supply.

The first portion of this chapter considers the relationship between sewage disposal and water supply facilities, while the second portion is devoted to the subject of surface water quality. Background information has been assembled and analyzed to determine the impact and the extent of the interrelationship between matters involving water supply and quality of surface water as it affects and is affected by sewage facilities planning.

RELATIONSHIP BETWEEN SEWAGE AND WATER FACILITIES

1. Potential waterborne hazards to community health are virtually nonexistent where both public sewage and central water facilities have been provided. Conversely, community health hazards are potentially greatest where on-site sewage disposal systems and on-site water supply facilities are utilized.

2. There are many areas of the county where neither centralized water nor public sewage facilities are available; while in other areas one of these utilities is provided but not the other.

3. As long as on-site waste disposal is practiced in parts of Montgomery County and on-site water supply facilities are used in other parts, a potential but distinct health hazard exists.

4. Water pollution does not necessarily result from the disposal of wastewater only. Contamination of surface and ground water can and does result from the use of agricultural chemicals and fertilizers, animal wastes, industrial dusts and many other agricultural and urban activities.

5. Most of the county's population (72% according to current estimates) is served by centralized water supply systems, but this utility is available to only a relatively small portion of the county's land area.

6. One of the greatest challenges facing the county from a developmental standpoint is to insure the orderly provision of centralized water facilities and public sewage facilities to those areas now needing it as well as to all significant new development.

7. Every effort must be expended to insure coordination in the provision of centralized water and public sewage facilities with topographic

considerations (i.e. soil characteristics and geological formations especially), population densities and realistic zoning and other land use controls.

8. Approximately 195,000 Montgomery County residents presently depend upon on-site facilities for their water supply. This represents about 28% of the resident population, and they are widely distributed over two-thirds of Montgomery County's 500 square miles.

FACTORS INFLUENCING AVAILABILITY OF WATER

1. The two main sources from which water can be drawn for domestic, industrial and agricultural uses are: (1) surface water, and (2) ground water.

2. Surface water refers to water which flows over or rests upon the earth's surface. Surface water supplies are currently used on a very limited basis in the county. The Schuylkill River and the Perkiomen Creek (Green Lane Reservoir of the Philadelphia Suburban Water Company especially) are the largest of the two surface water supplies.

3. Virtually all other sources of water in the county involve ground water supplies. Geologic formations are the key to the availability of potable water from underground sources.

4. Ground water supplies vary from excellent in the case of the Stockton and Wissahickon formations to the Sunderland and Bryn Mawr formations where little or no water is found. Unfortunately most of the 18 bedrock formations found underlying Montgomery County's landscape are not good aquifers. Water supplies relying on such formations usually will not prove satisfactory. Of the 18 bedrock formations, those which are poor aquifers underlay the vast majority of the county's landscape.

5. Greater reliance will have to be placed on surface water supplies in the future as the county continues to develop because of the generally poor water bearing characteristics of the bedrock geology. Because of this expected reliance on surface water, the quality of the county's surface water is of major practical significance and this has a direct bearing on the county-wide sewage facilities plan.

CENTRALIZED WATER SUPPLY FACILITIES

1. In 1969, 24 water utility companies operated within Montgomery County and provided service to approximately 72% of the county residents (or 466,000 persons). These water utilities include municipal water departments, governmental water authorities, institutional water agencies and private water utility companies.

2. Information concerning the areas serviced, the primary and secondary sources of water utilized, the number of customers serviced and the estimated population served for each of these 24 water companies is embodied in figure iii-1.

3. Based upon information available, it would appear to be an entirely desirable objective to provide all future large-scale developments with both public sewer facilities and centralized water distribution systems.

Figure iii-1
CENTRAL WATER SUPPLY FACILITIES DATA FOR MONTGOMERY COUNTY

Municipality Served and/or Water Company Authority	Other Areas Served	Sources and Impoundments (Primary Sources Listed First)	Customers Served	1969 Estimated Population Served
1. Ambler	Part of U. Dublin, Whippen, L. Gwynedd and Whittemarsh	6 wells and springs	4,902	17,000
2. Collegeville-Trappe Joint Water Works	--	4 wells	725	5,500 ^a
3. E. Greenville Water Works	--	Perkiomen Creek and 2 wells	600	2,000 ^a
4. E. Norriton Water Co.	--	2 wells	80	240 ^a
5. Hatboro Auth.	Part of Horsham and U. Moreland	9 wells	4,100	14,300
6. Hatfield Boro. Water Auth.	--	6 wells	N.A.	2,200 ^b
7. Lansdale--North Penn Water Auth.	Souderton Boro., Franconia, Hatfield, Towamencin, L. Salford, U. Gwynedd and Montgomery Twp.	23 wells and bulk water from North Wales Water Auth.	8,000	28,000
8. L. Providence--Audubon Water Co.	--	3 wells	500	1,750
9. L. Providence--St. Gabriel's Hall	--	2 wells	--	210 ^a
10. L. Providence--Valley Forge Industrial Park Water Co.	--	3 wells	--	N.A.
11. Norristown State Hospital	--	6 wells	--	7,000 ^a
12. Norristown Water Co.	Bridgeport, part of E. Norriton, W. Norriton, L. Providence, Plymouth, U. Merion and Whippen	Schuylkill River	18,738	65,500
13. North Wales Water Auth.	U. Gwynedd and L. Gwynedd, bulk water to North Penn Water Auth., Montgomery, Worcester, and Hatfield Twp., and bulk water to New Britain, Bucks County	9 wells	4,000	14,000
Notes: ^a Water Resources Bulletin No. 3, Water Resources of the Schuylkill River Basin, Commonwealth of Pennsylvania Department of Forests and Waters, Harrisburg, May, 1968. ^b Comprehensive Plan Volume III, North Penn Area, Montgomery County, Pennsylvania, Montgomery County Planning Commission, Norristown, Pa., 1969.				
14. Pottsgrove Water Co.	Part of U. Hanover, Montgomery County, and part of Hereford, Berks County	2 wells	700	2,400 ^a
15. Philadelphia Suburban Water Co.	Bryn Athyn, Conshohocken, Jenkintown, Narberth, Rockledge and W. Conshohocken; Abington, Cheltenham, L. Merton, L. Moreland, Plymouth, Springfield, U. Dublin, U. Merion and Whittemarsh	Pickering Creek Reservoir; Perkiomen Creek; Green Lane Reservoir; Schuylkill River; 9 wells	71,576	250,500
16. Pottstown Boro. Water Dept.	W. Pottsgrove; part of U. Pottsgrove and L. Pottsgrove in Montgomery County, and N. Coventry in Chester County	Schuylkill River	9,300	35,000
17. Red Hill Water Auth.	--	spring	350	1,100 ^b
18. Royersford Home Water Co.	Spring City and part of E. Vincent, both in Chester County, and part of Limerick and U. Providence in Montgomery County	Schuylkill River	2,557	9,000
19. Schwenksville Water Co.	Part of L. Frederick and Perkiomen	4 wells	370	1,500 ^a
20. Skipack Twp. State Correctional Inst.	--	8 wells	--	2,000 ^a
21. Telford Water	Souderton and part of Franconia in Montgomery County; part of Hilltown and W. Rockhill in Bucks County	3 wells	950	3,300
22. U. Dublin Twp. Delaware Valley Ind. Water Co.	Fort Washington Ind. Park	2 wells	25 ^a	N.A.
23. U. Dublin--Dublin Water Co.	--	1 well	250	1,000 ^a
24. Whippen Twp.--Blue Bell Water Works Co.	--	3 wells	700	2,400
TOTALS			128,423	465,900

Source: Interviews with utility representatives September 1969 unless otherwise indicated.

Failure to accomplish this objective can only serve to create potential community health hazards in addition to those that now exist.

4. Every effort should be made to provide centralized water service to those developed areas of the county where such service is not now available in order to relieve the existing and/or potential health hazards.

QUALITY OF STREAM WATER IN MONTGOMERY COUNTY

1. Surface water is used by agricultural, industrial and public uses for many purposes including irrigation, industrial cooling and the assimilation of treated as well as untreated waste effluent. In addition to these consumer uses, surface water provides an environment for plant and animal life, is an important factor in active recreation and has aesthetic qualities which are important for passive recreation. Surface water adds to enjoyment in both urban and rural areas, but pollution reduces both the economic and social value of water.

2. The cause of water pollution varies. In rural areas waters are contaminated through agricultural activities (fertilizers, animal wastes, pesticides, erosion and sedimentation). The most common source of water pollution in urban areas is from municipal and industrial sewage and includes such other items as debris and oil spills.

3. Surface water pollution is measured by a number of criteria including fecal coliform, pH factor, Biochemical Oxygen Demand (BOD), Dissolved Oxygen (DO), water temperature, turbidity and various other factors.

4. Both the federal and state governments have established standards for recreational water and for water supply purposes. These standards refer to the criteria measured in paragraph #3 above and are quite complex because of the many interrelationships involved in the question of water quality.

5. The federal standards refer to interstate waters and the state standards refer to other streams. Both sets of standards have been prepared with their own goals and conditions in mind and are not entirely consistent.

6. State standards apply to Montgomery County waters. These are set according to the uses desired for streams on a watershed basis. They are utilized by the technicians involved in sewage plant design and serve to establish guidelines for county-wide sewage facilities planning.

7. The quality of water reflected in the standards should be compared with existing conditions to determine the degree of water pollution prevalent in Montgomery County. Unfortunately not much information exists for determining the quality of the waters in the county. Most information comes from three relatively recent sources: (a) the Wissahickon Creek Study - beginning in 1958; (b) the Perkiomen Creek Study - summer of 1966; and (c) the Skippack Creek Study - 1970.

8. The Pennsylvania Department of Health provides additional sources of information. Three sampling stations are maintained by the department,

and supplemental information is available from the sampling stations maintained by the U.S. Geological Survey.

9. Not enough information is available from these various sources to draw county-wide conclusions. However, based upon information available, it would appear that stream degradation has advanced to severe levels in parts of Montgomery County. Presently available information provides significant warning signs.

10. More information is needed and appropriate agencies should increase not only the number of sampling stations but also the frequency of sample collection and analysis.

11. The Department of Health has undertaken the task of upgrading stream quality. The department has revised its requirements concerning the quality of the effluent by various watersheds in Montgomery County. Individual dischargers (both public and private) have been given notice of a time schedule to which they must conform for upgrading to the revised requirements. Within Montgomery County, revised requirements have been issued in the Neshaminy, Wissahickon and Perkiomen watersheds.

12. The Pennsylvania Department of Health conducts periodic inspections of sewage treatment and industrial effluents on a regular basis. According to the results of these inspections (June 1970), 73% of the dischargers are in compliance with state standards and 27% are not. Of the 27% not in compliance, approximately half are considered by the department to be making satisfactory progress toward upgrading, but the other half are not. Apparently greater pressure must be brought to bear upon those dischargers who are not in conformance with state standards to bring about compliance.

13. Even assuming complete compliance with current standards, the quality of surface water in Montgomery County would likely still be unsatisfactory.

Given the ever increasing demand for the adequate supplies of potable water from centralized sources, much more attention must be devoted in the future to safeguarding the quality of water supplies and to providing distribution systems. The quality of sewage treatment in Montgomery County has a direct bearing on the quality of surface water and an indirect bearing on the quality of ground water. The interrelationship between the provision of sewage collection systems and water distribution facilities must also be more clearly recognized. The provision of water supply distribution systems and the quality of water sources are recognized in the development of the county-wide sewage facilities plan.



IV

GATHERING DATA CONCERNING EXISTING FACILITIES

Preparation of a county-wide sewage facilities plan cannot be undertaken without obtaining and analyzing information concerning the existing collection systems and treatment facilities throughout the county. Because the existing facilities represent a tremendous capital investment, they must be recognized and considered as the basis upon which all subsequent sewer planning is predicated. Unfortunately it appears that some decisions reached in the past have not been reached with the type of overall guidance which comprehensive data would provide. Decisions have all too often been made on a piece-meal basis because of the independent and uncoordinated role of the multitude of governmental agencies and private organizations involved in the decision-making process.

The assembling of pertinent data concerning the existing sewage facilities in Montgomery County into a unified and cohesive format can rightfully be viewed as a major step forward that has been accomplished through Act 537 activities. For the first time, extensive information has been gathered concerning existing sewage facilities throughout Montgomery County. Moreover, it has been organized in a manner which permits its acquisition by a wide variety of potential users.

METHODS UTILIZED TO GATHER DATA

1. Two questionnaires were utilized as a first step in gathering data. One questionnaire concerned municipal zoning regulations and was addressed to the chief administrative officer of each of the county's 38 townships and 24 boroughs. The second questionnaire was concerned with sewage treatment and collection facilities and was addressed to the operators of the various treatment facilities.

2. Personal interviews were utilized as a follow up to the questionnaires. The planning staff visited municipal officials to elicit zoning information while the engineering consultants visited plant operators.

3. Visual inspection of the treatment plant sites was made by the engineering consultant.

4. Records of the Pennsylvania Department of Health, the Delaware Valley Regional Planning Commission and the Delaware River Basin Commission were used to supplement other information obtained.

ESTABLISHMENT OF WORKING FILES

1. Information assembled has been placed in working files that have been established for each sewage treatment plant. A typical working file consists of: a) engineering data, b) analysis and evaluation of all components of the treatment facility, c) plot plan of the site, d) aerial photo of the area, and e) tax plat.

2. In addition to providing necessary background information for the development of a county-wide sewage facilities plan, the working files contain information which should prove useful to: a) municipalities and their engineering consultants, b) representatives of county, region, state and basin commissions in their review of applications for proposed

facilities, c) the Montgomery County Sewer Coordinator (a proposal endorsed by this report), and d) numerous private individuals and organizations desirous of obtaining information concerning sewage facilities in the county.

3. Once established, the information in the working files should be kept current by periodic and systematic surveys, interviews and orderly record keeping.

4. The working files should facilitate the establishment of a centralized data collection system which provides the systematic gathering of important data and which facilitates its analysis and use by a wide variety of users for various purposes.

CENTRALIZED DATA COLLECTION SYSTEM

1. For each sewer treatment plant the following information should be maintained: an identification number, location (by watershed, municipal jurisdiction and street system), area served, characteristics of receiving stream and characteristics of the physical plant (including treatment processes, difficulties encountered in treatment and land use characteristics, for example).

2. For pumping stations and force mains the following information should be maintained: facility identification number, location (by sewer treatment plant, watershed, municipal jurisdiction and street system) and physical characteristics of the station or force main (including age, capacity and limitations, for example).

MAPPING THE DATA GATHERED

1. The spatial distribution of treatment plants, pumping stations, force mains, interceptors and other significant components of a given sewage collection and treatment system was best accomplished through mapping techniques.

2. Mapping of existing sewage facilities was accomplished on a municipality-by-municipality basis on 1"=800 foot maps for townships and 1"=200 foot maps for boroughs (see sample - figure iv-1).

3. All facilities which were either operational, under construction or under contract for construction were mapped.

4. These specimen maps prepared for the county-wide sewage facilities plan represent the first comprehensive compilation of existing sewer lines within Montgomery County. Surprisingly they represent the first compilation of this information for certain municipalities.

5. The systematic plotting of existing sewer facilities can justifiably be viewed as a significant by-product of the county sewer plan.

DIFFICULTIES ENCOUNTERED IN GATHERING DATA

1. The data gathering process proved much more complex and time consuming than had been anticipated. Many municipalities had no comprehensive data available.

LOWER MORELAND TOWNSHIP - BRYN ATHYN BOROUGH

Montgomery County, Pennsylvania

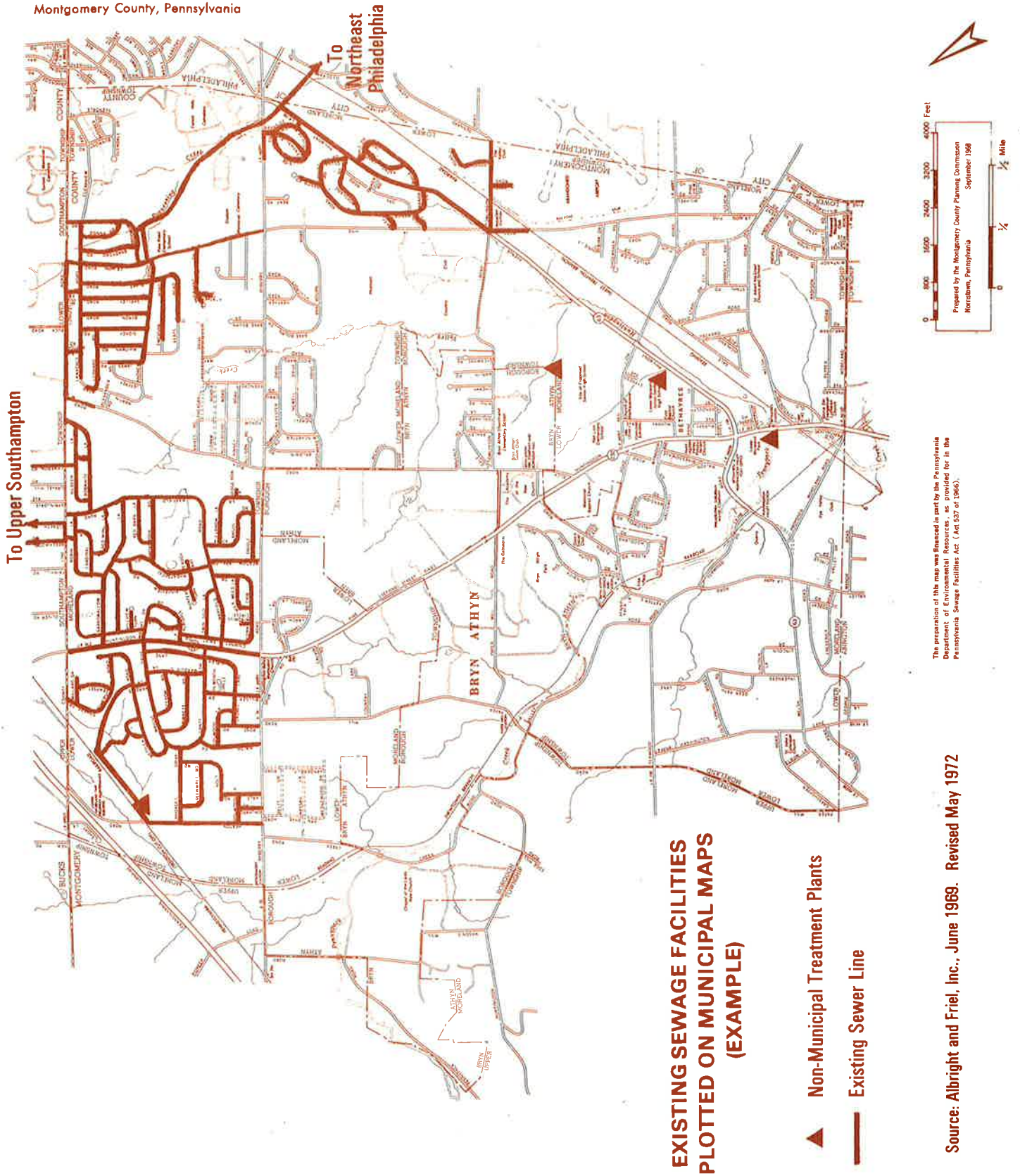


Figure iv-1

Source: Albright and Friel, Inc., June 1969. Revised May 1972

2. Municipalities often tend to rely upon their engineering consultants for maintenance of basic information. This proves to be an undesirable and impractical method since a given engineering consultant is not a permanent part of the local government scene and many different firms are employed.

3. Apparently no information is now available on some of the older systems in the county. (Some are over 50 years of age so this lack of data is understandable.)

4. Municipalities tend to place heavy reliance upon the personal knowledge of key people. When plotting information on a systematic basis, this personal knowledge results in the discovery of many gaps in information.

ROLE OF THE COUNTY SEWER COORDINATOR

1. Because of the difficulties encountered in gathering the data and the importance of the data now that it has been gathered, it is strongly recommended that Montgomery County establish the position of a county sewer coordinator and that he be charged with the responsibility of maintaining and periodically updating this plan.

2. In addition, responsibilities of the sewer coordinator should include establishing close working relationships with: (a) each of the county's 62 municipalities, and (b) representatives of the Delaware River Basin Commission, the Delaware Valley Regional Planning Commission, Pennsylvania Department of Health and its counterpart in neighboring counties (Berks, Bucks, Chester, Delaware, Lehigh and Philadelphia).

3. To insure adequate internal communications the sewer coordinator should maintain contacts with the county Sewer Authority, the county planning commission and the county Department of Public Facilities so as to: (a) facilitate and assist in expediting the receipt of federal and state grants-in-aid for the needed sewage facilities, (b) assist local agencies' building and operating facilities in every possible way, and (c) assure full implementation of this plan.

4. Within the private sector of the economy the sewer coordinator should contact engineering consultants who are active in sewer work as well as with large land developers, builders and others directly involved with activities affecting the sewer facilities program so as to exert a positive influence and thereby facilitate and expedite implementation of the plan.

5. The county sewer coordinator should develop a sophisticated system to facilitate the retrieval of data from the working files, the centralized data collection system and the maps of existing sewage facilities for all of the above referenced organizations and individuals.

6. The major role of the sewer coordinator would be to coordinate activities involving both private and public facilities in and near Montgomery County so as to insure that both effective long-term and short-run solutions to day-to-day problems are developed.

One of the major by-products of the Montgomery County Sewage Facilities Plan has been the assembling of essential background information. The systematic inventory and presentation of this material should be viewed as a major accomplishment of Act 537 activities. The value of the data that has been assembled will henceforth depend partly on its periodical updating, which is an important ingredient of ongoing sewage facilities planning. A major recommendation of this plan, therefore, is to immediately establish the appropriate mechanism for maintaining, refining and updating the data that has been gathered. Future decisions to be reached concerning sewage facilities in the county should be thereby facilitated.



EXISTING SEWAGE FACILITIES IN AND AFFECTING MONTGOMERY COUNTY

Collection systems had no doubt been known in the county before the twentieth century. However, it appears that these systems afforded no treatment prior to disposal. Hence, raw sewage was deposited into rivers and watercourses for many years. Around the turn of the twentieth century population increases and technological advances rendered the "primitive" form of wastewater disposal unacceptable in certain Montgomery County communities. The first sewage collection system that was constructed in Montgomery County with treatment facilities provided as an integral part of collection was accomplished by Lower Merion Township in 1904. The next "benchmark" for sewage collection and treatment occurred in 1915 when North Wales constructed the first modern sewage treatment facility in the county.

Today it is estimated that approximately 74% of all the county's residents, or 490,000 persons, are served by some type of centralized collection and treatment system.

This chapter will consider the various types of existing sewage treatment facilities that are distributed both in Montgomery County and in watersheds adjacent to Montgomery County. In addition to sewage treatment plants, various aspects of the sewage collection systems will also be considered. The growth of sewage facilities in the county will also be placed in historic perspective.

TYPES OF EXISTING WASTEWATER TREATMENT FACILITIES

1. The county-wide inventory has revealed that within the political boundaries of Montgomery County there are a total of 90 sewage treatment facilities as of October 1969.

2. These 90 treatment facilities have been grouped into three separate categories: (a) municipal treatment plants; (b) industrial treatment plants; and (c) non-municipal treatment plants.

3. The county-wide inventory indicates that there are 29 municipal plants. These are owned and operated by municipalities and generally provide service to all types of land uses. They are normally considered as public facilities in the full sense of the phrase.

4. The survey indicates that there are 26 industrial wastewater treatment plants. Many of these are designed to treat combined sanitary and industrial wastes, while others are designed specifically to treat only those harsh industrial wastes that are unacceptable to conventional sanitary treatment processes.

5. The 35 non-municipal treatment plants accommodate a wide variety of uses including apartment complexes, military installations, nursing homes, hospitals, motels, mobile home parks, camp sites, commercial establishments, schools, residential subdivisions and a correctional institution.

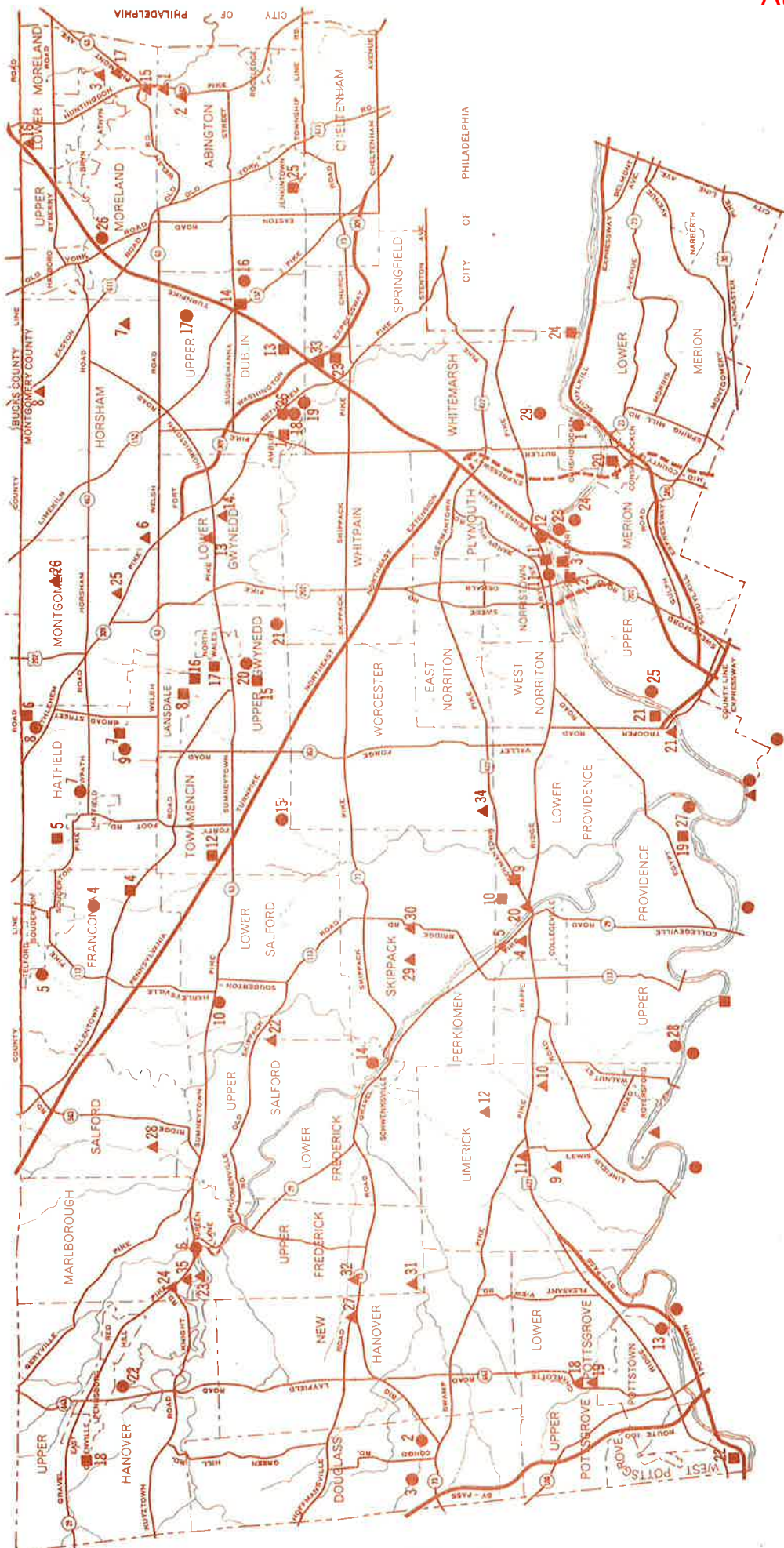
6. Although the Pennsylvania Sewage Facilities Act did not specifically require an inventory of industrial and non-municipal plants, it is obvious that information concerning these facilities is a necessary input to the development of a meaningful county-wide sewage facilities plan.

Figure v-1
LIST OF WASTEWATER TREATMENT PLANTS IN MONTGOMERY COUNTY
BY TYPE, MUNICIPALITY AND RECEIVING STREAM

● MUNICIPAL TREATMENT PLANTS				▲ NON-MUNICIPAL TREATMENT PLANTS				■ INDUSTRIAL TREATMENT PLANTS			
Map No.	Municipality	Identification	Receiving Stream	Map No.	Municipality	Identification	Receiving Stream	Map No.	Municipality	Identification	Receiving Stream
1	Conshohocken	Conshohocken Municipal Authority	Schuylkill River	1	Abington	Holy Redeemer Hospital	Tributary of Pennypack Creek	1	Ambler	Nicolet Industries	Missahickon Creek
2	Douglas	Berks-Montgomery Joint Municipal Authority	West Swamp Creek	2	Abington	Headbrook Apartments	Tributary of Pennypack Creek	2	Bridgeport	Daring Paper Co.	Schuylkill River
3	Douglas	Boyetown Sewage Treatment Plant	West Swamp Creek	3	Bryn Athyn	Academy of the New Church	Tributary of Huntingdon Valley Creek	3	Brantonia	Poly-Chem Div. of Budd	Schuylkill River
4	Franconia	Souderton Municipal Sewer Authority	Little Skippack Creek	4	Collegeville	College Arms Apartment	Perkiomen Creek	4	Hatfield Twp.	North Penn Hide Co.	Schuylkill River
5	Franconia	Terford Municipal Sewer Authority	Indian Creek	5	Horsham	Ursinus College	Perkiomen Creek	5	Hatfield Twp.	Hunter Spring Co.	Schuylkill River
6	Green Lane	Green Lane-Marlborough Sewer Authority	Perkiomen Creek	6	Horsham	Ursinus College Apartments	Perkiomen Creek	6	Hatfield Twp.	Link Belt Co.	West Branch of Neshaminy Creek
7	Hatfield Boro.	Hatfield Boro. Municipal Sewer Authority	Neshaminy Creek (West Branch)	7	Horsham	St. Catherine of Sienna Apartments	Perkiomen Creek	7	Lansdale	American Olean Tile Co.	Tributary of W. Branch of Neshaminy Creek
8	Hatfield Twp.	Hatfield Twp. Municipal Sewer Authority	Neshaminy Creek (West Branch)	8	Horsham	U.S. Naval Air Station at Willow Grove	Perkiomen Creek	8	Lansdale	Philco-Ford Co.	Neshaminy Creek
9	Lansdale	Lansdale Municipal Sewer Authority	Neshaminy Creek (West Branch)	9	Limerick	Limerick Township Elementary School	Perkiomen Creek	9	Lower Providence	Ajax Stamping Co.	Towamencin Creek
10	Lower Salford	Lower Salford Twp. Sewer Authority	Tributary of Indian Creek	10	Limerick	Limerick Trailer Park	Perkiomen Creek (Landis Brook)	10	Lower Providence	Superior Tube Co.	Perkiomen Creek
11	Morristown	Morristown Municipal Sewer System	Schuylkill River	11	Limerick	Ridge View Terrace	Subsurface	11	Morristown	Nicolet Industries	Schuylkill River
12	Plymouth	Plymouth Joint Sewer Authority	Schuylkill River	12	Limerick	Mobile Home Park	Subsurface	12	Towamencin	Nyce Ball Bearing Co.	Tributary of Skippack Creek
13	Pottstown	Pottstown Municipal Sewer Authority	Schuylkill River	13	Lower Gwynedd	Western Montgomery County Vocational-Technical	Tributary of Perkiomen Creek	13	Upper Dublin	Delaware Valley Industrial Sewage Co.	Skippack Creek
14	Schwenksville	Schwenksville Boro. Sewer Authority	Perkiomen Creek	14	Lower Gwynedd	Gwynedd Mercy College	Perkiomen Creek	14	Upper Dublin	Selas Corporation	Tributary of Pine Run
15	Towamencin	Upper Gwynedd-Towamencin Authority	Towamencin Creek	15	Lower Gwynedd	Silver Stream Nursing Home	Tributary of Missahickon Creek	15	Upper Gwynedd	Leeds & Northrup	Tributary of Pine Run
16	Upper Dublin	Upper Gwynedd-Towamencin Authority	Sandy Run	16	Lower Moreland	BethAyres Estate	Tributary of Missahickon Creek	16	Upper Gwynedd	Merck, Sharpe & Dohme	Tributary of Pine Run
17	Upper Dublin	Upper Gwynedd-Towamencin Authority	Pine Run	17	Lower Moreland	Chapel Hill Sewage Co.	Tributary of Missahickon Creek	17	Upper Gwynedd	Pillsbury Co.	Tributary of Pine Run
18	Upper Dublin	Ambler Municipal Sewer System	Missahickon Creek	18	Lower Moreland	Lower Moreland School	Tributary of Southampton Creek	18	Upper Gwynedd	Precision Tube Co.	Missahickon Creek
19	Upper Dublin	Ambler Municipal Sewer System	Missahickon Creek	19	Lower Pottsgrove	Arian's Department Store	Tributary of Southampton Creek	19	Upper Providence	Pillsbury Co.	Missahickon Creek
20	Upper Gwynedd	North Wales Municipal Sewer System	Missahickon Creek	20	Lower Pottsgrove	North End Shopping Center	Tributary of Southampton Creek	20	Upper Providence	Pillsbury Co.	Missahickon Creek
21	Upper Gwynedd	Upper Gwynedd Twp. Sewer Authority	Missahickon Creek	21	Lower Pottsgrove	Collegeville Inn	Huntington Valley Creek	21	West Conshohocken	B.F. Goodrich Co.	Schuylkill River
22	Upper Hanover	Upper Montgomery Joint Authority	Perkiomen Creek	22	Lower Salford	Mobile Home Park	Tributary of East Branch Perkiomen Creek	22	West Conshohocken	Westfield Paper Co.	Gulph Creek
23	Upper Merion	Bridgeport Municipal Sewer System	Green Lane	23	Marlborough	Northeast Bible Inst.	Green Lane	23	West Pottsgrove	Doehler-Jarvis Div. of National Lead Corp.	Subsurface
24	Upper Merion	Upper Merion Twp. Municipal Sewer Authority	Schuylkill River	24	Marlborough	Candlewick Inn	Tributary of Little Neshaminy Creek	24	Whitemarsh	McNeil Laboratories, Inc.	Schuylkill River
25	Upper Merion	Upper Merion Twp. Municipal Sewer Authority	Schuylkill River	25	Montgomery Twp.	Golden Chariot Motel	Tributary of Little Neshaminy Creek	25	Whitemarsh	Whitemarsh Cold Steel	Schuylkill River
26	Upper Merion	Upper Merion Twp. Municipal Sewer Authority	Schuylkill River	26	Montgomery Twp.	Montgomery Elementary School	Tributary of Little Neshaminy Creek	26	Ambler	Certain-Feed Pipe Co.	Missahickon Creek
27	Upper Merion	Upper Merion Twp. Municipal Sewer Authority	Schuylkill River	27	New Hanover	New Hanover-Upper Frederick Joint	Tributary of Swamp Creek				
28	Upper Moreland	Upper Moreland Joint Authority	Pennypack Creek	28	Salford	Camp Green Lane	Ridge Valley Creek				
29	Upper Providence	Upper Providence Sewer Authority	Perkiomen Creek	29	Skippack	Skippack Elementary School	Tributary of Perkiomen Creek				
30	Upper Providence	Upper Providence Sewer Authority	Perkiomen Creek	30	Skippack	State Correctional Institution	Perkiomen Creek				
31	Whitemarsh	Royersford Municipal Sewer Authority	Schuylkill River	31	Upper Frederick	Camp Laughing Waters	Perkiomen Creek				
32	Whitemarsh	Whitemarsh Twp. Municipal Sewer Authority	Tributary of Schuylkill River	32	Upper Frederick	Mennonite Home for the Aged	Tributary of Swamp Creek				
33				33	Whitemarsh	Sheraton-Penn Pike Motor Inn	Sandy Run				
34				34	Worcester	Lower Providence-Worcester Joint School Authority	Tributary of Skippack Creek				
35				35	Marlborough	Green Lane Trailer Park	Perkiomen Creek				

Note: Map Numbers refer to Figure v-2.
Sources: Records of Pennsylvania Department of Health and refined from field checks by Montgomery County Planning Commission and Albright & Fritz.

MUNICIPAL, NON-MUNICIPAL, AND INDUSTRIAL WASTEWATER TREATMENT PLANTS IN MONTGOMERY COUNTY



- Municipal Plants
- ▲ Non-Municipal Plants
- Industrial Plants

Note: Numbers refer to Figure v-1
Note: For greater detail refer to Figure v-6

0 1 2 3 4 5 6 Miles

Prepared by the Montgomery County Planning Commission
Court House, Norristown, Pennsylvania March 1967

The preparation of this map was financed in part by the Pennsylvania Department of Environmental Resources. It is provided for in the Pennsylvania Sewage Facilities Act (Act 537 of 1966).

Source: Montgomery County Planning Commission, 1970.
Revised May 1972

Figure v-2

Other methods of disposing wastewater in Montgomery County are provided by lagoons, holding tanks and spray irrigation as well as illegal direct discharges. For the purposes of this report they have not been considered although a more detailed study and analysis should be undertaken in the future. The Department of Health has recently undertaken a program of reevaluating its policies toward these methods of disposal.

DISTRIBUTION OF SEWAGE TREATMENT FACILITIES IN MONTGOMERY COUNTY

1. A complete list of the 90 treatment plants according to their type (municipal, industrial and non-municipal), the municipalities in which they are located and their receiving streams is summarized in figure v-1.

2. The spatial distribution of the 90 wastewater treatment plants in operation in Montgomery County has been summarized in graphic form in figure v-2.

3. Much of Eastern Montgomery County (Cheltenham, Abington, Jenkintown and Rockledge) have extensive collection systems with treatment afforded on the Delaware River in Northeast Philadelphia.

4. Springfield, Narberth and much of Lower Merion are afforded service through extensive collection systems, and treatment is provided on the Schuylkill River in Southwest Philadelphia.

5. Many Montgomery County residents are afforded sewer service well beyond the county's boundaries. Interestingly enough, most of these cooperative efforts in solving sewer problems are longstanding and demonstrate a desirable degree of farsighted watershed-wide planning by responsible municipal officials.

6. The balance of Montgomery County's residents that are provided with public sewer service find municipal treatment facilities scattered over most of the county's landscape generally in a direct relationship to population concentrations. However, both industrial and non-municipal treatment plants are located in a much more random pattern and, therefore, do not display a direct relationship to population centers.

SEWAGE TREATMENT PLANTS IN WATERSHEDS ADJACENT TO MONTGOMERY COUNTY

1. Sewer planning for Montgomery County cannot realistically stop at the county boundary. Therefore, it was necessary to delineate drainage basins that have a direct bearing on the county sewage facilities plan and to survey both existing and proposed treatment facilities in these drainage basins.

2. Twenty-three drainage basins have been identified in Berks, Bucks, Chester, Delaware and Lehigh counties as well as in the city of Philadelphia that have a direct bearing on Montgomery County sewer planning. Some of these drainage basins lie astride the county boundary (for example, the Neshaminy Watershed is in both Montgomery and Bucks counties), while some of them are solely in neighboring counties (for example, the French Creek Watershed is solely in Chester County).

3. Based on material assembled, it is now evident that at least 36 existing and proposed municipal, non-municipal and industrial wastewater treatment plants are located in those portions of neighboring counties which have a direct effect on Montgomery County's sewer planning.

4. The watershed, county, type, identifying name and both the present status and the 10-year plan status of each of these 36 wastewater treatment plants are summarized in figure v-3.

5. The location of these 36 sewer treatment plants is graphically summarized in figure v-4. This graphic also serves to delineate the 23 drainage basins previously discussed.

6. Of the 36 plants, 32 now exist and four are proposed.

7. Of the 36 plants, eight are located (or proposed) in Bucks County, eight in Berks County, 18 in Chester County, two in Philadelphia and none in Delaware or Lehigh counties.

8. Twelve of the 32 existing plants are municipal, two are industrial and 18 are non-municipal. Of the four proposed treatment plants, three are proposed as municipal facilities, while one is proposed as a non-municipal plant.

9. Of the 32 existing plants, 17 are recommended for phasing out, six municipal plants are to be expanded and the remaining nine plants are to be unchanged.

AREAS WHERE SEWAGE TREATMENT PLANTS ARE CLUSTERED

1. The proliferation of sewage treatment plants is an undesirable feature since it compounds problems of wastewater management, makes the maintenance of stream quality a major problem of coordination, fosters duplication and overlapping of services and facilities and renders both the construction and operation of sewer systems more expensive.

2. Fourteen areas have been identified where treatment plants are proliferated. Ten of these 14 clusters are located solely within Montgomery County, three involve Montgomery County and one other county and one involves Montgomery and two other counties.

3. Figure v-5 graphically summarizes the location and areal extent of each of the 14 clusters.

4. Municipal, industrial and non-municipal treatment plants are all included in the delineation of clusters.

5. The cluster with the most treatment plants encompasses a 13-mile stretch of the Schuylkill River from Port Kennedy to Linfield. In this stretch there are 12 treatment plants, six of which are in Montgomery County and six in Chester County. Of the 12, five are municipal, four are industrial and three are non-municipal. In addition, two new treatment plants have been proposed within this proliferated stretch and both are in Chester County.

6. The cluster solely within Montgomery County with the most treatment plants is also found along the Schuylkill River. In the six-mile stretch between Miquon and Norristown, there are 11 treatment plants.

Figure v-3

LIST OF SELECTED WASTEWATER TREATMENT PLANTS LOCATED IN WATERSHEDS ADJACENT TO MONTGOMERY COUNTY

Number	Watershed	Name	County	Type	Existing Status 1970	Future Status 1979
1	Neshaminy	Chalfont-New Britain	Bucks	Municipal	Existing	Keep
2	Neshaminy	Doylestown (Harvey Street Plant)	Bucks	Municipal	Existing	Phase out
3	Neshaminy-Little Branch	Warminster Township	Bucks	Municipal	Existing	Keep
4	Neshaminy-Little Branch	Warrington Sewer Company	Bucks	Non-municipal	Existing	Phase out
5	Neshaminy-Little Branch	Palomino Sewer Company	Bucks	Non-municipal	Existing	Phase out
6	Neshaminy-Little Branch	Paul Valley	Bucks	Non-municipal	Existing	Phase out
7	Perkiomen-East Branch	Perkasie-Sellersville Boroughs	Bucks	Municipal	Existing	Keep
8	Perkiomen-Unami Creek	Finland	Bucks	Proposed municipal	Proposed	Keep
9	Perkiomen-West Branch	Bally	Berks	Municipal	Existing	Keep
10	Manatawny	Morysville	Berks	Municipal	Existing	Keep
11	Manatawny	Pleasantville	Berks	Proposed municipal	Proposed	Keep
12	Manatawny	Oley Valley School	Berks	Non-municipal	Existing	Phase out
13	Manatawny	East Vocational-Technical High School	Berks	Non-municipal	Existing	Phase out
14	Manatawny	Pine Forge Institute	Berks	Non-municipal	Existing	Keep
15	Upper Schuylkill	Amity Gardens	Berks	Non-municipal	Existing	Phase out
16	Upper Schuylkill	Mobile Parks Development, Inc.	Berks	Non-municipal	Existing	Phase out
17	Upper Schuylkill	North Coventry Township	Chester	Municipal	Existing	Keep
18	Upper Schuylkill-Pigeon	Turner's Trailer Grove	Chester	Proposed non-municipal	Proposed	Phase out
19	Upper Schuylkill	Pennhurst School	Chester	Non-municipal	Existing	Keep
20	Upper Schuylkill	Spring City Borough	Chester	Municipal	Existing	Keep
21	French	Owen J. Roberts School	Chester	Municipal	Existing	Keep
22	French	Oakleigh Mobile Homes Park	Chester	Non-municipal	Existing	Keep
23	French	French Creek Valley Joint School	Chester	Non-municipal	Existing	Keep
24	French	Phoenixville Borough	Chester	Municipal	Existing	Keep
25	French	Philadelphia Electric Company	Chester	Industrial	Existing	Phase out
26	Lower Schuylkill	Valley Forge Sewer Authority	Chester	Proposed municipal	Proposed	Keep
27	Lower Schuylkill	Freedoms Foundation	Chester	Non-municipal	Existing	Phase out
28	Lower Schuylkill-Valley	Paoli Industrial Park	Chester	Non-municipal	Existing	Phase out
29	Lower Schuylkill-Valley	Burroughs Corporation	Chester	Non-municipal	Existing	Phase out
30	Lower Schuylkill-Valley	Wyeth Laboratories	Chester	Non-municipal	Existing	Phase out
31	Lower Schuylkill-Valley	Camilla Hall	Chester	Non-municipal	Existing	Phase out
32	Lower Schuylkill-Valley	Immaculata College	Chester	Non-municipal	Existing	Phase out
33	Lower Schuylkill-Trout	Gulf Oil Turnpike Station #7	Chester	Industrial	Existing	Keep
34	Lower Schuylkill-Pickering	Great Valley High School	Chester	Non-municipal	Existing	Phase out
35	Delaware River	Southwest Philadelphia	Philadelphia	Municipal	Existing	Keep
36	Delaware River	Northeast Philadelphia	Philadelphia	Municipal	Existing	Keep

Source: Interviews and/or Act 537 Plan for neighboring counties.

SELECTED TREATMENT PLANTS BY WATERSHED OUTSIDE MONTGOMERY COUNTY WITH RELATION TO COUNTY PLANTS

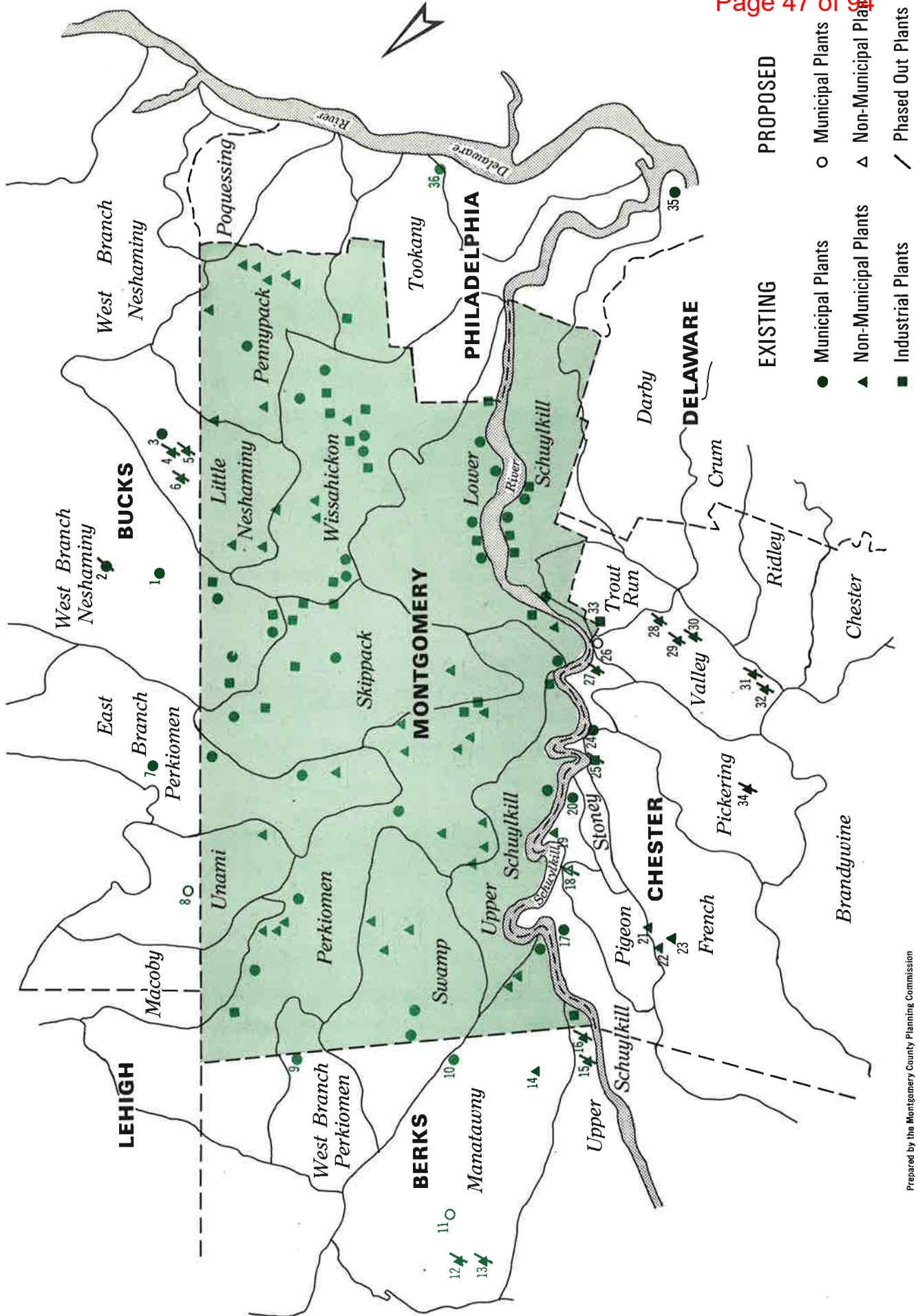


Figure v-4

Source: Montgomery County Planning Commission, 1970. Revised May 1972

Prepared by the Montgomery County Planning Commission
Court House, Norristown, Pennsylvania 1972

The preparation of this map was financed in part by the Pennsylvania Department of Environmental Resources, as provided for in the Pennsylvania Sewage Facilities Act (Act 537 of 1966).

CLUSTERS OF SEWAGE TREATMENT PLANTS IN MONTGOMERY COUNTY AND ADJOINING WATERSHEDS

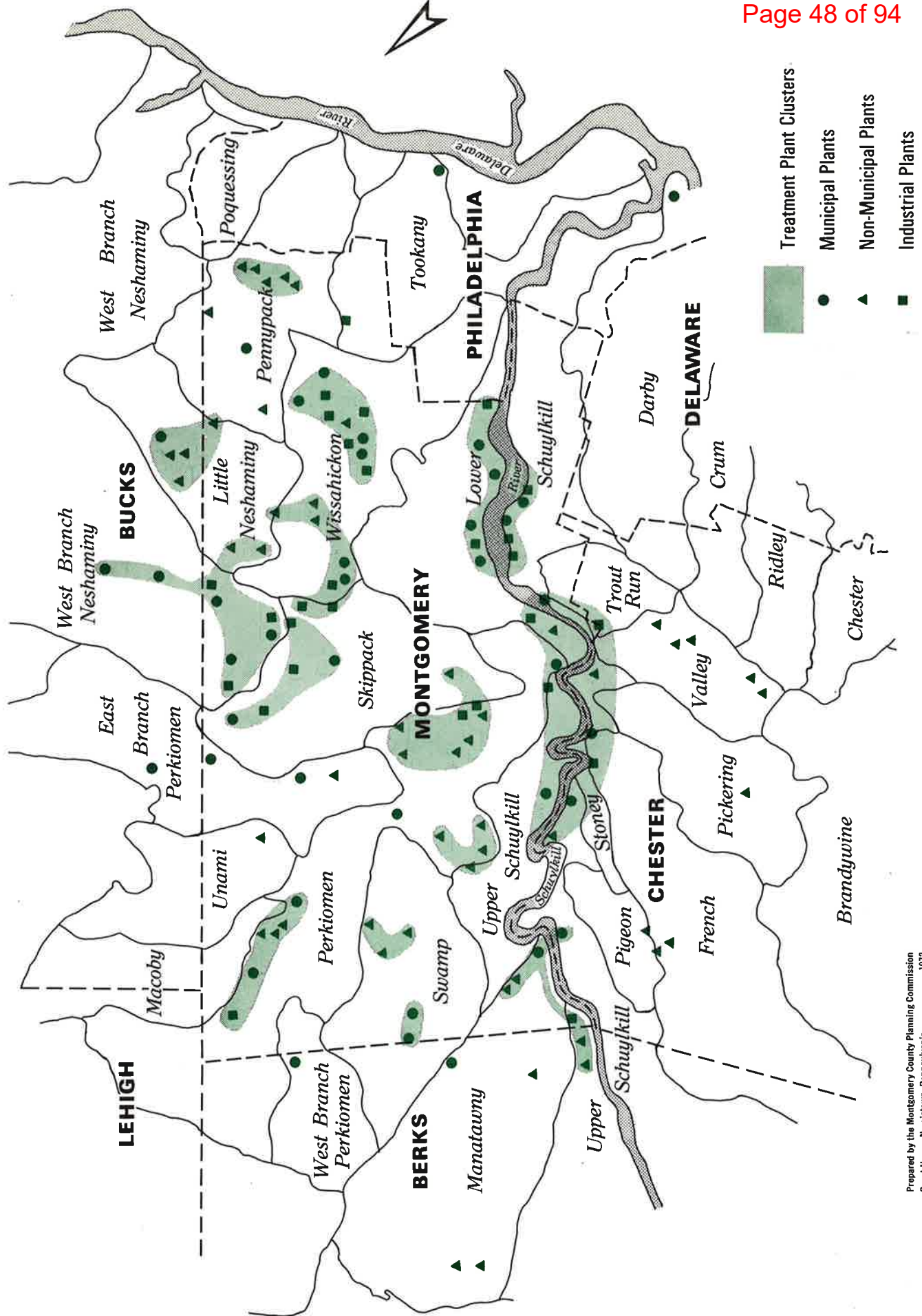


Figure v-5

Prepared by the Montgomery County Planning Commission
Court House, Norristown, Pennsylvania
1972

The preparation of this map was financed in part by the Pennsylvania Department of Environmental Resources, as provided for in the Pennsylvania Sewage Facilities Act (Act 537 of 1966).

Source: Montgomery County Planning Commission, 1970. Revised May 1972

7. One of the primary goals of the county-wide sewage facilities plan is to reduce the problems inherent in areas where treatment plants have been clustered. This would be accomplished by eliminating as many of the treatment plants within the cluster as possible and by avoiding the addition of new facilities in close proximity to the existing plants.

SEWAGE COLLECTION SYSTEMS

1. Information concerning collection systems was gathered as part of the data collection phase by the consulting engineers. Information concerning the location and characteristics of trunk lines, pumping stations and force mains was gathered and plotted on municipal base maps.

2. Information plotted on these municipal maps was generalized into a county-wide map which summarizes the geographic distribution of major collection system components. This information is embodied in figure v-6.

3. This information graphically portrays for the first time the spatial distribution of significant components of sewage collection systems within Montgomery County. The compilation of this important information should be considered an important by-product of the county-wide sewage facilities plan.

4. In order to easily identify those land areas which readily can be served by the various components of sanitary sewage collection systems, generalized sewer service areas have also been defined and delineated.

5. Delineation of existing sewer service areas provides an important county-wide perspective or "overview" for an area of the size and complexity of Montgomery County. Existing sewer service areas have been delineated on figure v-6.

6. Approximately 30% of Montgomery County's landscape is now served by public sewage facilities based upon analysis of the sewer service area delineation. The geographic distribution of the sewer services areas is an almost direct index of the densities of population and intensity of land use.

HISTORIC GROWTH OF EXISTING SEWAGE FACILITIES IN MONTGOMERY COUNTY

1. Apparently many communities had collection systems which "dumped" raw sewage into the watercourses of Montgomery County for many years. The first modern treatment facilities were provided to a Montgomery County municipality when Lower Merion began the construction of a public sanitary sewage collection system in 1904. Treatment was afforded by the Southwest Philadelphia Sewer Plant on the Schuylkill River.

2. The first Montgomery County community which provided both a collection and wastewater treatment facility within the county was the Borough of North Wales in 1915.

3. The first three municipal treatment plants to become operational in the county served a combined 1920 population of 14,629 persons, all in the North Penn Area.

4. During the 1920's Abington, Cheltenham, Rockledge and Jenkintown began to develop sanitary collection systems with treatment afforded by the Northeast Treatment Plant in Philadelphia on the Delaware River. Major interceptor lines were located in both the Pennypack and Tookany watersheds.

5. During the 1930's the number of treatment plants in Montgomery County jumped from three to 10 with the construction of plants serving Norristown, Pottstown, Upper Moreland/Hatboro, Ambler, Conshohocken, Royersford and Telford.

6. Springfield Township, late in the 1930's, began the construction of a collection system with treatment afforded at the Southwest Treatment Plant in Philadelphia by way of the Wissahickon Creek interceptor. Unfortunately the execution of this inter-county agreement was the last in which significant land areas in Montgomery County were to be provided with public sewer service which found treatment facilities located in Philadelphia.

7. Between 1940 and 1960 only one municipal treatment plant was built - the Abington Township plant.

8. In the past decade no less than 18 municipal plants were constructed. This is compared to the construction of 11 municipal plants in the previous 44 years.

9. Such rapid sewage plant construction is an indication of a general awareness prevailing in Montgomery County concerning the need for public sewage facilities. It is also an indication that many pivotal decisions have been made within a short period of time by many independent organizations. These are conditions which are not generally conducive to reaching sound long-range solutions.

The 29 municipal treatment plants located in Montgomery County serve about 475,000 persons. This is contrasted with the three municipal treatment plants in Philadelphia which serve two million persons. These figures alone represent important indications concerning the vastly different approach to solving sewer treatment conditions. On the one hand, the regionalized or watershed-wide approach has been implemented, while on the other hand, many independent decisions have been reached. The county sewage facilities plan is the first attempt to provide overall guidance to sewer decisions in Montgomery County. This plan will hopefully facilitate the implementation of needed sewage facilities which will meet a short-term need and be the basis of meeting long-term requirements on a watershed-wide basis.

VI

EVALUATION OF EXISTING SEWAGE FACILITIES

In developing a county-wide sewage facilities plan, there is a need to evaluate the adequacies of the existing sewerage systems throughout the county. The evaluation process will facilitate the formulation of recommendations concerning the role that the various treatment plants and collector system components will play in both the long-term as well as short-term future. The evaluation process makes it possible to clearly identify those parts of the present systems that, for one reason or another, should not be relied upon to play a significant role in the establishment of a comprehensive and cohesive county-wide system of sewage facilities. Conversely, those components of the existing systems which do "score well" in an objective evaluation process represent the "building blocks" upon which the expansion of sewer service can be based.

In addition to identifying the existing components which should be "phased out of" or "planned in to" the county-wide sewage facilities plan, the results of the evaluation process will materially facilitate the decision-making process in terms of resource allocation. Since there are limited public funds available for the construction, expansion and/or updating of treatment plants and collection system components, it is necessary that the county-wide sewage facilities plan reflect the manner in which these limited funds can best be directed. Therefore, the evaluation process will help identify those facilities which, because they rate high, should be the recipients of scarce public funds, while those facilities which rate low would not be assigned a high priority in receiving the funds. Proposed new facilities can also be measured and compared to existing facilities in terms of resources allocated as well as in terms of evolving a county-wide facilities plan.

The evaluation process can best be accomplished in an orderly fashion by considering municipal treatment plants, non-municipal and industrial treatment plants and collection system components in three separate categories.

MUNICIPAL TREATMENT PLANT EVALUATION

1. Engineering considerations have been stressed, but note has been made of various pertinent administrative and planning factors.
2. Engineering evaluation techniques developed by the county's sewer consultants, Albright & Friel, Inc., involved choosing 10 factors, each weighed according to its relative importance to each other factor, and evaluating all 29 municipal plants for each factor. The sum of the 10 assigned factor weights gives each plant's score.
3. The 10 factors in order of relative importance are summarized on figure vi-1.
4. A total "weighted" score was developed for each plant on the scale of 0 to 10. On this scale 10 points represent a theoretically perfect plant while the worst possible plant would score 0.
5. The summary results of the municipal sewer treatment plant evaluation process have been graphically portrayed in bargraph form (see figure vi-2).

Figure vi-1

FACTORS AND WEIGHTS UTILIZED IN MUNICIPAL TREATMENT
PLANT EVALUATION PROCESS

Factor Number	Scoring Factor Description	Percent
1.	Assimilative capacity of receiving stream	20.0
2.	Geographical location	16.2
3.	Expansion potential at plant site	15.0
4.	Availability of alternative treatment sites	13.2
5.	Present design capacity compared to potential loading	8.0
6.	Zoning in vicinity of plant site	7.2
7.	Optimum efficiency of treatment process	6.0
8.	Flexibility of process	5.6
9.	Physical condition of plant	4.4
10.	Sludge treatment and disposal	4.4
	Total	100.0

Source: Albright & Friel staff work.

6. The lowest of the 27 plants scored 3.75 (Souderton) while the highest is 6.89 (Pottstown).

7. All municipal sewage treatment plants scoring above 6.0 points are located on the Schuylkill River. This suggests the overall importance accorded the assimilative capacity of the receiving stream in treatment plant evaluations.

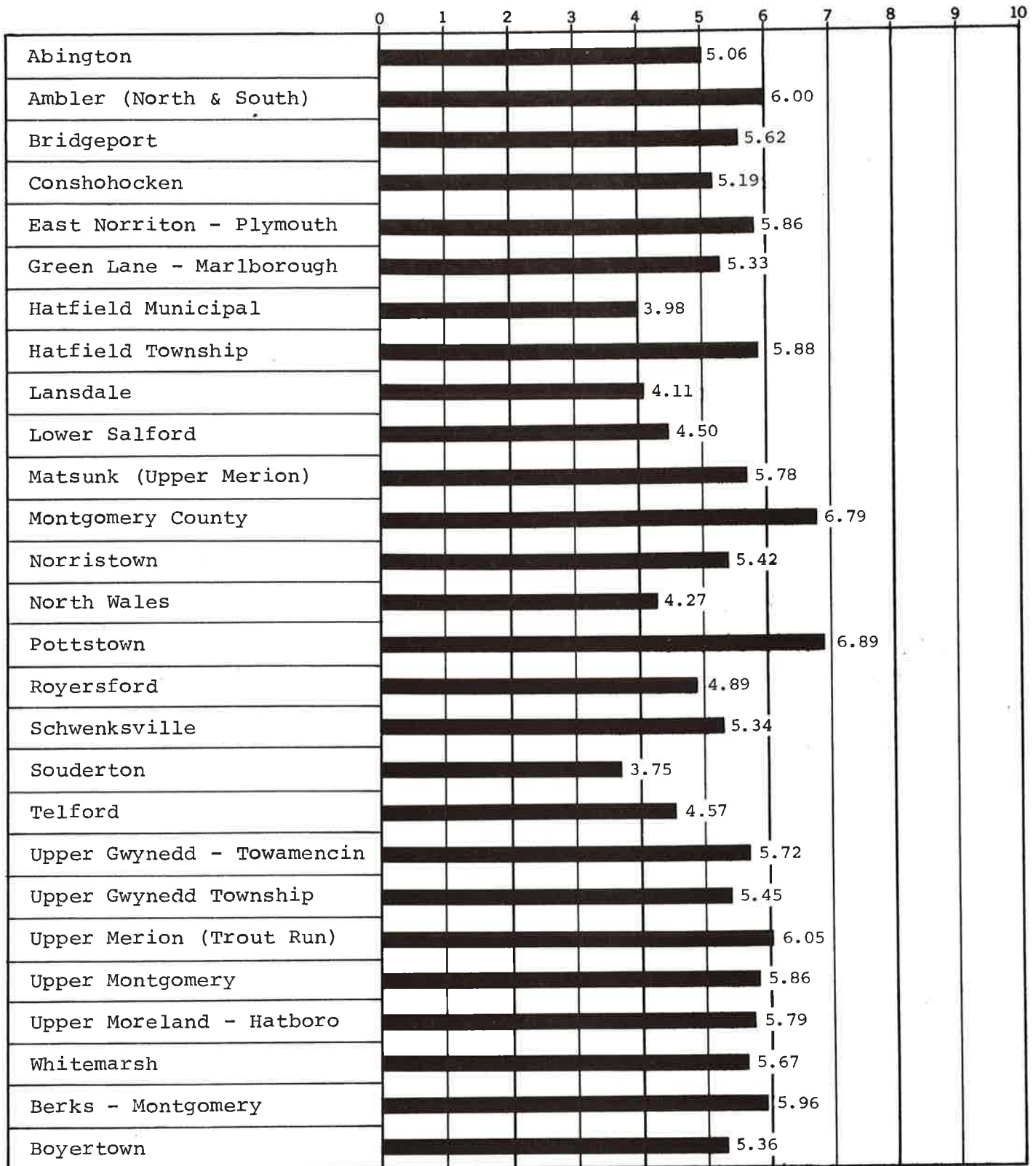
8. In addition to the engineering factors considered in the evaluation process, other factors should be considered in evaluating treatment plants. Unfortunately it is beyond the scope of this study to actually evaluate the facilities because of the general lack of data. In following up county-wide sewer planning activities, these other factors should be considered as the evaluation process becomes more refined.

9. Such factors to be considered in subsequent studies include financial aspects (unamortized debt, rate of repayment and schedule of service costs), water management planning (emphasis on low flow in county streams and recreational use of water), plant management and plant aesthetics.

NON-MUNICIPAL AND INDUSTRIAL TREATMENT PLANT EVALUATION

1. No detailed evaluation of these types of treatment plants was possible because it was outside the scope of the report. However, in subsequent county-wide sewer planning activities, evaluation of all non-municipal and industrial treatment plants should be undertaken.

RESULTS OF MUNICIPAL
SEWAGE TREATMENT PLANT EVALUATION



Note: The Aiden Lair Sewage Treatment Plant in Upper Dublin has been excluded.

Source: Albright and Friel staff compilation.

2. For purposes of this plan, a basic goal was established that all non-municipal and industrial treatment plants would be phased out if they are located within a 10-year growth area and if their effluent were amenable to treatment processes at the municipal facility. This goal is based on the premise that a higher quality of treatment at less cost with better control is more possible through municipal sewer service than through non-municipal and industrial operations.

3. It is recognized that further technical study is required concerning the quality of industrial wastes. Some are probably not amenable to treatment in municipal plants without extensive pretreatment. Where this is the case the basic goal (refer to previous paragraph) must be adjusted accordingly.

4. All non-municipal and industrial treatment plants that lie beyond a 10-year growth area have been assumed to remain in operation for the term of the 10-year sewer plan regardless of their efficiency and effectiveness. These decisions are based on lack of reasonable alternatives rather than intrinsic desirability.

5. The future in-depth evaluation of non-municipal and industrial treatment plants should include consideration of the following: quality of wastes (especially for industrial plants), cost considerations, effect of effluent on receiving stream, coordinating and managing wastewater treatment and municipal land use plans and land development regulations.

COLLECTOR SYSTEMS EVALUATION

1. Whereas sewage treatment plants can usually be expanded to meet growth conditions, collector system components must be planned and constructed with the ultimate capacities in mind to the extent possible. Hydraulic capacity is the main variable for major interceptor lines, and the evaluation of a collector system should contrast capacity with projected demands. This is perhaps the most important single criteria in evaluating the role of interceptor lines in developing a county-wide sewage facilities plan.

2. Other elements to consider in evaluating collector system components are the ownership (private versus municipal), extent of storm water and ground water infiltration, original construction costs, age, condition and extent of reliance on force mains and pumping stations. Data gathered does not permit a detailed evaluation based on these various factors. However, subsequent county-wide sewage facilities planning activities should consider these facilities as part of its refined data gathering and planning process.

3. Limitations inherent in existing collector system components have been considered to the extent possible in both the delineation of 10-year growth areas and in the assignment of growth areas for treatment in specified municipal systems.

4. Land use types and densities are directly related to collector system components, especially when considering financial aspects. This inter-relationship between land use and collector systems has been recognized as quite direct in the preparation of this plan. The relationship between land use and treatment facilities is much less direct.

5. Where evaluation shows that the existing collection systems cannot be adapted easily to handle flows from the outlying areas, the evolution of an orderly sewer system is adversely affected, the timing of service is modified and the costs are escalated. These practical realities have been recognized in developing the sewer plan.

Until recently the 27 public sewer systems in the county had not been viewed as being a major tool for combating stream pollution. They had been viewed essentially as disposing of wastes at minimum costs. In view of the new perspective it has been necessary to evaluate the existing systems so that subsequent public investments in sewer treatment plants and collection systems can more directly be applied to the dual purpose of handling sanitary wastewater in an economic manner and in combating stream pollution. This chapter has been concerned with the evaluation of existing sewage facilities so as to facilitate a more intelligent decision-making process concerning the allocation of scarce public funds.

SEWER FEASIBILITY STUDIES UNDERTAKEN IN MONTGOMERY COUNTY SINCE 1960

In developing 10-year sewage facilities plans for Montgomery County, it is important to have a working knowledge of "current sewer thinking" throughout the county. Many sewer decisions are reached by townships and boroughs working independently, and the nature and status of local sewer activities can only be ascertained by relying upon virtually all readily available sources. One of these sources is the municipal and/or area comprehensive plan which is prepared by planning organizations for communities throughout the county; the other source of current sewer thinking is embodied in studies collectively known as sewer feasibility studies.

The purposes of this chapter are to consider and evaluate the thinking reflected in sewer feasibility studies that have been undertaken by Montgomery County municipalities in the past decade in recognition of the fact that they lay the foundations upon which the plans for the next decade could be based. Sanitary sewer feasibility reports represent important reference points in county-wide sewage facilities planning since they are necessary prerequisites to implementing municipal sewer programs. These feasibility reports include background information and advance recommendations to meet the sewer problems of a community in light of its financial or economic capacity. Many of the sewer feasibility studies present alternative means for providing sewer service to a given community.

A number of revisions are frequently required in the interval between the preparation of a sewer feasibility report and the implementation of a given proposal. A wide variety of engineering consultants have been called upon by the townships and boroughs of Montgomery County to develop sewer feasibility studies. Unfortunately some of the sewer feasibility studies that have been prepared have failed to relate the sewer solutions in one community to the sewer conditions in neighboring communities. In some cases the studies were conducted without the benefit of guidance by comprehensive plans and in all cases they were prepared without the assistance of a county-wide sewage facilities plan.

This chapter serves to summarize sewer feasibility studies prepared throughout Montgomery County since 1960, to evaluate the various alternatives that have been proposed and to examine the relationship of the proposals to the emerging county-wide sewage facilities plan.

COMPILATION OF DATA

1. Information has been obtained from those sewer feasibility studies which are on file in the offices of the supervising sanitarian of the Pennsylvania Department of Health. If the feasibility study was completed but not filed with the department, no reference has been noted and it has not influenced the formulation of the county-wide sewage facilities plan. However, all information gained through the various local contacts made as part of this study was explored to the extent practical.

2. Twenty-seven feasibility studies have been prepared for Montgomery County municipalities since 1960. The county planning staff and the engineering consultants have utilized these reports. The material they contain has been evaluated and incorporated into the sewage facilities plan for Montgomery County wherever practical.

INVENTORY OF SEWER FEASIBILITY REPORTS PREPARED SINCE 1960 FOR MONTGOMERY COUNTY MUNICIPALITIES

Community	Year of Study	Sewage Treatment Proposed	Area Covered by Recommended Sewer Lines	Status of Study	Comments
1. Lower Salford	1960	New sewage treatment plant	Harleysville Area	Essentially implemented	Sewage treatment plant built
2. West Norriton	1961	Treatment in existing Norritown Sewage Plant with alternative for new plant	Virtually all of the Township	Essentially implemented	Utilized Norritown Sewage Treatment Plant
3. Lower Providence	1961	Two alternate treatment plants	Trooper and Audubon	Essentially implemented	Abandon 2 proposed plants, utilized county facility
4. Lower Gwynedd	1962	Treatment in Ambler Sewage Plant	Penilyn and Spring House	Generally implemented	Utilized Ambler Sewage Treatment Plant
5. Towamencin	1962	New sewage treatment plant (joint with Upper Gwynedd)	Kulpville	Essentially implemented	Sewage treatment plant built (joint with U. Gwynedd Township)
6. Upper Gwynedd	1962	New sewage treatment plant in Towamencin, and new plant in Upper Gwynedd	Most of Upper Gwynedd Township	Essentially implemented	Sewage treatment plants built (1 in Towamencin & 1 in U. Gwynedd)
7. Green Lane	1963	New sewage treatment plant (joint with Marlborough)	Entire Borough	Essentially implemented	Sewage treatment plant built (joint with Marlborough)
8. Marlborough	1963	New sewage treatment plant in Green Lane	Sumr/town	Essentially implemented	Sewage treatment plant in Green Lane
9. Hatfield Township	1963	Utilize existing sewage treatment plant	All but western Hatfield Township	Essentially implemented	Existing Sewage treatment plant utilized
10. Montgomery Township	1963	Utilize existing sewage treatment plant in Hatfield Township	Entire Township	Partially implemented	Utilized Hatfield Township Sewage Plant
11. Lower Moreland	1963	New sewage treatment plant proposed as alternate to tie in with Abington/Philadelphia system	Eastern portion of Township plus southern portion of Bryn Athyn	Partially implemented	Utilized Philadelphia system
12. Horsham	1963	Treatment in Upper Moreland/Hatboro plant as alternative for new plant	Eastern portion of Township	Partially implemented	New treatment plant not built - utilized U. Moreland-Hatboro Sewage Treatment Plant for portion implemented
13. East Norriton	1964	Two new plants proposed as alternative to treatment in Plymouth plant	All of Township	Generally implemented	Utilized Plymouth Treatment Plant as jointure
14. Montgomery County Sewer Authority	1964	New treatment plant	Lower: Perkiomen Valley	Generally implemented	Sewage treatment plant built
15. Upper Providence	1965	Treatment in Montgomery County sewage plant	All of Upper Providence	Partially implemented	Utilizing County sewage treatment plant
16. Lower Pottsgrove	1963	Treatment in existing Pottstown plant with alternative as construction of new plant	Southern portion of the Township	Not yet implemented	--
17. Worcester	1963	New treatment plant proposed	Entire Township	Not yet implemented	--
18. Limerick	1964	Connection with other treatment plants and provision of new plants both considered	Entire Township	Not yet implemented	--
19. Upper Pottsgrove	1964	Treatment in existing Borough of Pottstown plant	All but northern portion of the Township	Not yet implemented	--
20. West Conshohocken	1965	New treatment plant proposed with treatment in existing Conshohocken plant as an alternative	Entire Borough	Not yet implemented	--
21. Lower Frederick	1966	New treatment plant proposed as alternative for utilizing Montgomery County plant	Entire Township	Not yet implemented	--
22. Collegeville	1966	Connection with Montgomery County plant	Central portion of Collegeville	Not yet implemented	--
23. Trappe	1966	Connection with Montgomery County Plant with alternative providing a new plant	Entire Borough	Not yet implemented	--
24. Franconia	1965-67	New treatment plant as one of many alternatives, some of which utilize existing facility	Franconia, Earlinton to Telford/Souderton	Generally not yet implemented	--
25. New Hanover	1967	New sewage treatment plant	Southern half of Township is to be served	Not yet implemented	--
26. Skippack	1968	New treatment plant as an alternative to connecting into Montgomery County's plant	Entire Township	Not yet implemented	--
27. Perkiomen	1968	Connection into Montgomery County Plant	Entire Township	Generally not yet implemented	--

Sources: Sewer Feasibility Reports for identified communities--As filed with Montgomery County Supervising Sanitarian, Pennsylvania Department of Health.

SEWAGE FACILITIES PROPOSED IN FEASIBILITY REPORTS FOR MONTGOMERY COUNTY MUNICIPALITIES SINCE 1960

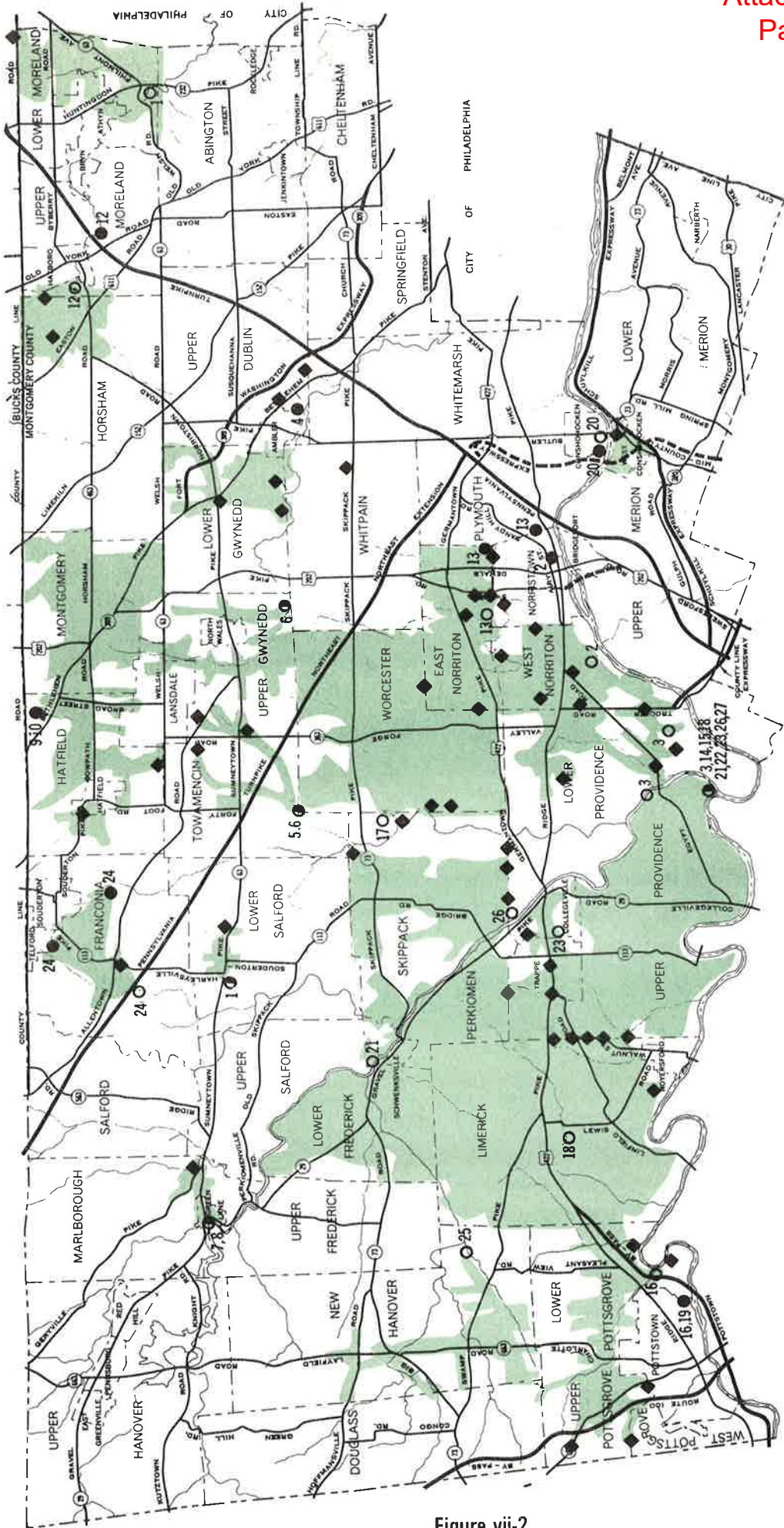


Figure vii-2

- Existing Plants-Recommended, in feasibility reports, to be used for providing sewer service to new areas
- ◆ New Plants-Recommended, in feasibility reports, for construction and subsequently been built
- Proposed Plants-Recommended, in feasibility reports, for construction but have not been built.

Service Areas as Proposed
in Feasibility Reports

◆ Pumping Station

Notes: (1) Map numbers refer to plants listed in Figure vii-1. (2) More than one number refers to alternative solution. (3) Plants with no direct bearing on recommendations not included.

Source: Pennsylvania Department of Health
Sewer Feasibility Studies

Prepared by the Montgomery County Planning Commission
Court House, Norristown, Pennsylvania
1972

The preparation of this map was financed in part by the Pennsylvania
Department of Environmental Resources, as provided for in the
Pennsylvania Sewerage Facilities Act (Act 537 of 1965).

3. Information extracted from the feasibility studies has been summarized in tabular form in figure vii-1. This chart brings the status of the feasibility studies up-to-date by indicating the approximate extent that each study has been implemented.

4. Various information was extracted from each of the 27 feasibility studies. The geographic areas proposed to be served by the sewer feasibility studies have been graphically summarized in figure vii-2 and represent the "most representative" set of recommendations or alternatives that have been embodied in the various feasibility studies.

5. Fifteen of the 27 studies completed since 1960 have been partially or completely implemented. It is estimated that public sewerage service has been provided for approximately 25,000 persons.

6. Of those studies which have not been implemented to a significant degree, some propose the construction of new sewage plants, some recommend the utilization of an existing plant and, in some instances, the studies suggest both courses of action as alternatives. In view of the numerous advantages inherent in utilizing existing facilities as opposed to the construction of new treatment plants, the county-wide sewage facilities plan hereby encourages those communities to pursue the alternative which does not require the construction of a new sewage treatment plant but instead favors the expansion of existing facilities.

DESCRIPTION OF CONTEMPLATED FACILITIES

1. Most sewer feasibility studies were undertaken by communities located in the central third of Montgomery County. This represents primarily the "urban fringe area" and generally reflects the impact of developmental activity.

2. Eight of the 10 communities in the Lower Perkiomen Valley undertook feasibility studies between 1960 and 1968.

3. Most other feasibility studies were undertaken by communities in areas adjacent to existing sewer service areas. These communities include Upper and Lower Pottsgrove, Towamencin, Upper Gwynedd, Montgomery, Hatfield (T), Franconia, East Norriton, West Norriton, Lower Providence, Lower Gwynedd and Horsham.

4. Those municipalities whose feasibility studies were completed and at least partially implemented since 1960 (in chronological order) are as follows: Lower Salford, West Norriton, Lower Providence, Lower Gwynedd, Towamencin-Upper Gwynedd townships, Green Lane Borough-Marlborough Township, Hatfield-Montgomery townships, Lower Moreland, Horsham, East Norriton townships, Montgomery County Sewer Authority and Upper Providence Township.

5. Those municipalities whose feasibility studies have been completed since 1960 but have not as yet been implemented to a significant extent are as follows: Bryn Athyn Borough, Lower Pottsgrove, Worcester, Limerick and Upper Pottsgrove townships, West Conshohocken Borough, Lower Frederick Township, Collegetown and Trappe boroughs, and Franconia, New Hanover, Skippack and Perkiomen townships.

6. It is interesting to note that many of those feasibility studies that have not been implemented were undertaken in the latter part of the 1960's. The fact that they have not yet been implemented is partly due to the normal time lag between the undertaking of a sewer feasibility study and its implementation. It is noted that some of the communities are now in various stages of implementing their sewer feasibility plans.

7. Some of the 12 feasibility studies that have not as yet been implemented are as much as seven years old. Many of them would have to be updated prior to implementation so as to reflect growth that has taken place in the interim as well as changing financial conditions. Any such updating should make reference to the county-wide sewage facilities plan.

8. If all 12 of the feasibility studies were implemented, it is estimated that approximately 40,000 persons would be provided with public sewer service.

9. It is recognized that the implementation of many of these feasibility studies is dependent upon the willingness and ability of municipal governments and sewer authorities to cooperate with one another. This is true in both the multi-municipal programs involving sewage treatment plants as well as the expansion of major interceptor lines. Unless the appropriate level of coordination is achieved, the orderly expansion of existing systems will be frustrated and sewage treatment plants will be built that could have been avoided.

SUMMARY OF IMPLICATIONS

Information embodied in the feasibility studies referred to in this chapter will be evaluated for incorporation into the Sewage Facilities Plan of Montgomery County. Those recommendations found in the feasibility studies that have been implemented will, of course, be evaluated as existing facilities. However, those recommendations concerning the construction of major interceptor lines and new sewage treatment plants (or the major expansion of existing treatment plants) have been considered to ascertain their incompatibility with the emerging county-wide sewage facilities plan.

Wherever appropriate, recommendations formulated in municipal sewer feasibility studies are incorporated into the county-wide sewage facilities plan. Where recommendations for municipal sewer feasibility studies are not found to be appropriate from the county-wide viewpoint, revisions to the municipal feasibility studies are suggested.

The challenge of the county-wide sewage facilities plan, therefore, is to evaluate all locally prepared proposals and to accept those which are valid and consistent with county-wide objectives and to recommend better solutions in those instances where the proposals are inadequate.

RECOMMENDED SEWAGE FACILITIES

The primary purpose of this chapter is to present recommendations concerning both the collection and treatment of wastewater in Montgomery County. These will be referenced to the time period of the next 10 years because of the emphasis of the Pennsylvania Sewage Facilities Act. However, they will also consider, in a general way, longer term sewerage requirements.

Prior to developing specific recommendations concerning sewage collection and treatment facilities, consideration must be given to the growth that is to be expected in Montgomery County in the next decade. This growth must be identified as to its magnitude, location and the type of development expected. Previous chapters of this report have provided the background information needed to discuss these questions. The identification of 10-year growth areas is outlined below.

TEN-YEAR GROWTH AREAS

1. For purposes of county-wide sewage facilities planning, 10-year growth areas have been defined as being those portions of the county that can reasonably be expected to have developed by 1980 to such an extent that public sewers apparently can economically be provided.
2. Ten-year growth areas include two basically different types of conditions:
 - a. those involving existing developed areas that are not presently served by sewer systems and which have at the present time, or will have by 1980, population densities that apparently support such a system;
 - b. those involving presently undeveloped areas that are expected to experience development at sufficient density and magnitude within the planning period to be able to support a public sewer system.
3. The delineation of 10-year growth areas provides the basis for the coordination and the implementation of sewage facilities. In such a manner, decisions influencing either or both collection system components or treatment facilities can be made with a degree of reliability that is otherwise unattainable.
4. The Montgomery County Planning Commission staff prepared "preliminary 10-year growth areas" for purposes of local review and approval. The staff relied upon the following information in delineating the growth areas: population estimates, forecasts of land use development, employment statistics, comprehensive plans, personal knowledge of portions of the county, data from its land development review function, the areal distribution of existing sewage and water facilities, the sewer feasibility reports that have yet to be implemented, the location of significant highway improvements and existing as well as planned open space areas.
5. The preliminary growth areas, as delineated by the Montgomery County Planning Commission staff, were then reviewed by the municipalities of Montgomery County. At a series of area-wide meetings, municipal representatives were presented with the preliminary growth areas and were

requested to review them with local governing bodies, sewer authorities and planning commissions. They were specifically asked to suggest changes to the growth areas they felt appropriate and forward them to the planning staff.

6. At the 11 area meetings with municipal representatives, information was distributed which included the following: (a) graphic summarizations of the existing sewer systems, and (b) delineation of the preliminary growth areas. A status report was presented at these meetings and the municipalities were provided with the opportunity to comment upon the emerging sewage facilities plan.

7. Upon receipt of locally suggested revisions to the 10-year growth areas, the staff made adjustments and the 10 year growth areas were finalized so as to serve as a guide for subsequent sewer planning decisions. It is to be noted that minor deviations between the 10-year growth areas delineated and actual development will not generally affect the recommendations. Moreover they are unavoidable because of the nature of the task of projecting growth areas accurately.

8. The finalized 10-year growth areas are graphically summarized in figure viii-1. The county-wide map also shows the relationship between 10-year growth areas and existing sewer service areas.

9. The interplay between land use development and the factors which influence the timing, the character and the location of development must be considered in the delineation of 10-year growth areas.

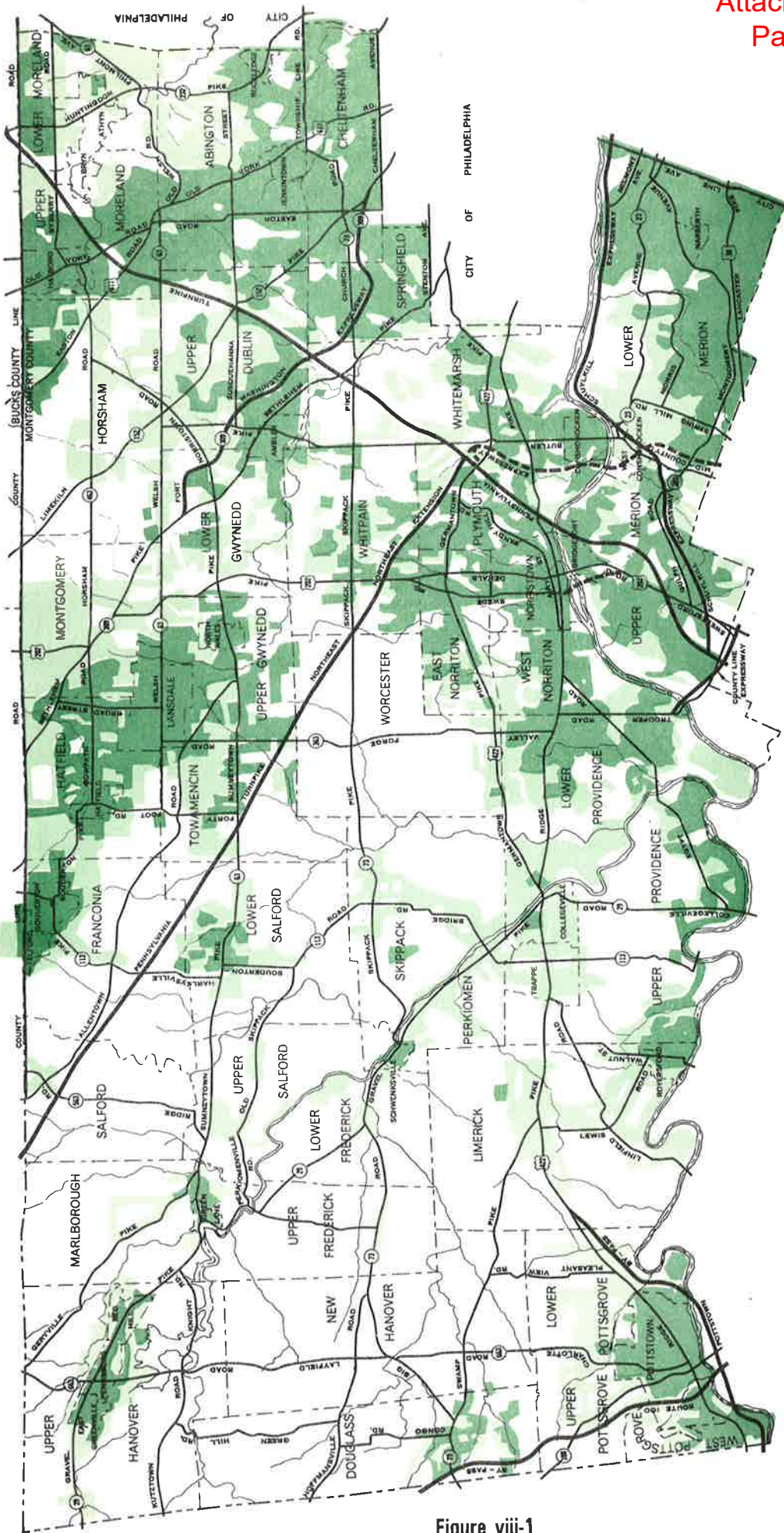
10. Comprehensive planning and municipal zoning regulations have a direct effect on the timing and type of land development. The interaction between community planning, zoning, growth areas and sewage facilities must be recognized. For example, certain minimum land development densities must be provided in order to facilitate the economic provision of public sewer service. There are numerous areas of the county where existing zoning requirements provide for densities which impede rather than facilitate the provision of public sewers. This is an undesirable feature in areas that have been designated as 10-year growth areas.

11. On the other hand, there are certain areas of the county which lie outside projected 10-year growth areas but have a zoning density so great as to virtually require the provision of sanitary sewer facilities. In such instances, relatively high density land development may occur in areas removed from public sewer service and on soils unsuited for on-site disposal. In such instances it is apparent that the zoning requirements should be altered, or sewer planning revised, if the establishment of communities with sanitary conditions is to be fostered.

RECOMMENDATIONS FOR ADDITIONAL SEWAGE FACILITIES

1. In developing a county-wide sewage facilities plan, a fundamental decision had to be made concerning which existing sewage treatment plants should be phased out, which existing sewage treatment plants should continue to operate and which should receive additional flows from subsequent growth. It was of paramount importance here to avoid placing emphasis on those facilities which, in the long term, would not appear to be in the best location for Montgomery County and adjacent areas.

TEN-YEAR GROWTH AREAS SHOWING RELATIONSHIP WITH EXISTING SEWER SERVICE AREAS



Presently Served Areas

Ten-Year Growth Areas

0 1 2 3 4 5 6 Miles

Prepared by the Montgomery County Planning Commission
Court House, Norristown, Pennsylvania March 1967

The preparation of this map was financed in part by the Pennsylvania Department of Environmental Resources, as provided for in the Pennsylvania Sewerage Facilities Act (Act 537 of 1962).

Source: Montgomery County Planning Commission, 1970. Revised May 1972

Figure viii-1

Figure viii-2
DISPOSITION OF WASTEWATER TREATMENT PLANTS BY WATERSHED

WATERSHED	Name of Wastewater Treatment Plant	1969 Average Flow (MGD)	Design Capacity (MGD)	1979 Average Flow (MGD)	Recommendations
PENNYPACK Including Poquessing Creek	Municipal Plants				
	1. U. Moreland-Hatboro	4.23	3.60	6.16	Expand
	2. City of Philadelphia Northeast Plant	169.	175.	4.5 ^a	No Change
	Non-Municipal Plants				
	3. Chapel Hill	.07	.12	.07	No Change
	4. Bethayr's Estates	.02	.02	--	Phased out with flows to Phila. NE STP
	5. L. Moreland School	N.A.	N.A.	--	"
	6. Holy Redeemer Hospital	N.A.	N.A.	--	"
	7. Meadowbrook Apts.	.04	.11	--	"
	8. Academy of the New Church	.035	.065	--	"
9. St. Catherine of Sienna	N.A.	.015	--	Phased out with flows to U. Moreland STP	
TOOKANY	Municipal Plants				
	1. City of Philadelphia Northeast Plant	165.	175.	8.5 ^a	No Change
	2. Standard Pressed Steel	.15	N.A.	--	Phased out with flows to Phil NE STP
NESHAMINY	Municipal Plants				
	1. Hatfield Twp.	.62	.90	2.09	Expand
	2. Hatfield Boro.	.28	.38	--	Phased out with flows to Hatfield Twp. STP
	3. Lansdale	3.37	5.00	3.9 ^g	No Change
	4. Warminster	--	N.A.	1.1 ^h	No Change
	Non-Municipal Plants				
	5. Golden Chariot Motel	N.A.	.01	--	Phased out with flows to Hatfield Twp. STP
	6. Montgomery School	N.A.	.006	--	"
	7. English Village Apts.	N.A.	.12	--	Phased out with flows to Warminster STP
	8. U.S. Naval Air Station	.22	1.00	--	"
	Industrial Plants				
	9. Hunter Spring Co.	N.A.	N.A.	--	Phased out with flows to Hatfield STP
10. Link Belt Co.	.04	.13	--	"	
11. American Olean Tile Co.	.017	N.A.	--	Phased out with flows to Lansdale STP	
12. Philco-Ford Co.	.36	N.A.	--	"	
WISSAHICKON	Municipal Plants				
	1. Abington Township	3.00	4.60	3.15 ^b	No Change
	2. Ambler (North & South)	1.65	2.26	2.28 ^b	Expand
	3. U. Gwynedd Twp.	.42	.58	1.19	Expand
	4. North Wales Boro.	.40	.65	--	Phased out with flows to U. Gwynedd STP
	5. U. Dublin-Aiden Lair	N.A.	N.A.	--	Phased out with flows to Abington STP
	6. City of Philadelphia Southwest Plant	130.	136.	2.9 ^a	No Change
	Non-Municipal Plants				
	7. Gwynedd Mercy College	.031	.06	--	Phased out with flows to Ambler STP
	8. Silver Stream Nursing Home	.008	.02	--	Phased out with flows to Ambler STP
	9. Penn Pike Motor Inn	N.A.	.09	--	"
	Industrial Plants				
	10. Merck, Sharp, & Dohme	N.A.	.44	--	Phased out with flows to U. Gwynedd STP
	11. Precision Tube Co.	N.A.	N.A.	--	"
	12. Leeds & Northrup	.05	.07	--	"
	13. Selas Corp.	.015	.009	--	Phased out with flows to Abington STP
	14. Delaware Valley	.60	.45	--	Phased out with flows to Ambler STP
15. McNeil Laboratories	.09	.035	--	Phased out with flows to Phila. Southwest STP	
16. Nicolet Industries	.3	N.A.	N.A.	Phased out with flows to Ambler STP	
17. Certain Teed Pipe Co.	.29	.29	--	Phased out with flows to Ambler STP	
LOWER SCHUYLKILL Including Indian Creek	Municipal Plants				
	1. Bridgeport	.50	1.25	.57	No Change
	2. Conshohocken	1.02	1.36	2.09	Expand
	3. E. Norriton-Plymouth	2.90	4.40	6.90	Expand
	4. Matsunk	.60	1.50	1.09	No Change
	5. Norristown	7.00	9.75	7.82	No Change
	6. U. Merion	3.00	5.00	4.48	No Change
	7. Whitemarsh	1.20	2.00	2.38	Expand
	8. City of Philadelphia Southwest Plant	130.	136.	8.55 ^a	No Change
	Industrial Plants				
	9. Darling Paper Co.	.14	.30	N.A.	No Change
	10. Polychem Co.	2.2	3.00	N.A.	No Change
	11. Nicolet Industries	N.A.	N.A.	N.A.	Phased out with flows to Norristown STP
	12. Taylor Corp.	N.A.	N.A.	N.A.	"
13. Westfield Paper Co.	.36	.425	N.A.	No Change	
14. Weyerhaeuser	3.2	4.5	N.A.	No Change	

Figure viii-2

DISPOSITION OF WASTEWATER TREATMENT PLANTS BY WATERSHED
(Continued)

WATERSHED	Name of Wastewater Treatment Plant	1969 Average Flow (MGD)	Design Capacity (MGD)	1979 Average Flow (MGD)	Recommendations
LOWER PERKIOMEN	Municipal Plants				
	1. Montgomery County Municipal Auth.	1.0	2.0	6.54	Expand
	Non-Municipal Plants				
	2. Ridgeview Terrace	N.A.	.016	--	Phased out with flows to Montco. STP
	3. Limerick Trailer Park	N.A.	N.A.	--	"
	4. Western Montco. Vocational School	.009	.022	--	"
	5. Limerick Twp. Elementary School	.015	.011	--	No Change
	6. Collegeville Arms Apts.	N.A.	.02	--	Phased out with flows to Montco. STP
	7. Ursinus College	N.A.	N.A.	--	"
	8. Collegeville Inn	.004	.011	--	"
	9. Valley Forge Terrace	.18	.35	--	"
	10. Skippack Elementary School	.004	N.A.	--	"
	11. L. Providence-Worcester Joint School	.018	.04	--	"
	12. Eastern State Penitentiary	.415	.5	--	No Change
	Industrial Plants				
13. Ajax Stamping & Manufacturing Co.	.025	.043	--	Phased out with flows to Montco. STP	
14. Superior Tube	.02	.03	--	"	
15. B. F. Goodrich	(no longer in operation)				
UPPER PERKIOMEN	Municipal Plants				
	1. U. Montgomery	.25	.72	.53	No Change
	2. Green Lane-Marlborough	.06	.25	.23	No Change
	3. Schwenksville	.04	.21	.06	No Change
	4. Montgomery County Municipal Auth. (Oaks)	--	2.0	.49 ^c	Expand
	Non-Municipal Plants				
	5. Northeast Bible Inst.	.009	.03	N.A.	No Change
	6. Candlewick Inn	N.A.	.005	N.A.	No Change
	7. Camp Green Lane	N.A.	N.A.	N.A.	No Change
8. Green Hill Trailer Park Industrial Park	N.A.	N.A.	N.A.	No Change	
Industrial Plant					
9. Pillsbury Co.	.01	.02	N.A.	Phased out with flows to U. Montco. STP	
SWAMP CREEK	Municipal Plants				
	1. Boyertown	.48	.75	.60	No Change
	2. Berks-Montgomery	.37	.31	.88	Expand
	3. Frederick-Obelisk	--	--	.09	Recommended for construction
	Non-Municipal Plants				
	4. Mennonite Home	.015	.025	--	Phased out with flows to proposed Obelisk STP
5. New Hanover School	.007	N.A.	N.A.	No Change	
6. Camp Laughing Waters	N.A.	.03	--	No Change	
UPPER SCHUYLKILL	Municipal Plants				
	1. Pottstown	5.65	5.90	7.72	Expand
	2. Royersford	.28	.50	--	Phased out with flows to Montco. STP
	Non-Municipal Plants				
	3. Arlen's Dept. Store	N.A.	N.A.	--	Phased out with flows to Pottstown STP
4. North End Shopping Center	N.A.	N.A.	--	"	
Industrial Plants					
5. Doehler-Jarvis	.075	.12	--	"	
SKIPPACK	Municipal Plants				
	1. Souderton	.50	.68	.80	Expand
	2. U. Gwynedd-Towamencin	.88	1.00	1.6	Expand
	Industrial Plants				
3. North Penn Hide Co.	.007	.01	N.A.	No Change	
4. Nice Ball Bearing Co.	.008	.01	--	Phased out with flows to Towamencin STP	
EAST BRANCH PERKIOMEN	Municipal Plants				
	1. Lower Salford	.15	.28	.65	Expand
	2. Telford	.23	1.00	.65	No Change
	3. Tylersport	--	--	.12	Recommended for construction
Non-Municipal Plants					
4. New Life Boys Ranch	.005	.015	N.A.	No Change	

Notes: ^aLoadings from Montgomery County only.
^bNot adjusted for possible flows from U. Dublin growth areas.
^cLoadings from U. Perkiomen Area only.
N.A.: Not available.

Source: Albright & Friel recommendations.

2. In reaching that decision, emphasis was placed on the evaluation of existing treatment plants which was discussed in Chapter VI. Moreover, various alternatives were considered which included constructing long interceptors, constructing major pumping stations, abandoning whole groups of plants, phasing out certain plants and expanding nearby facilities, and constructing new facilities.

3. The primary consideration in studying the recommendations of the county-wide sewage facilities plan was providing the best service to the most people at a reasonable cost not only for the 10-year horizon but for the long-range horizon as well.

4. It is recommended that three municipal treatment plants be phased out, pending more detailed economic feasibility study, that one new plant be added and that many of the present plants be expanded to handle additional flows and upgraded so as to produce a higher quality of effluent. Stressing the utilization of existing municipal plants and placing them in a watershed planning context results in greater long-term emphasis on the establishment of collection systems. This is true both in terms of designing collection systems to include larger service areas than has been the practice in the past and in building interceptors to carry wastewater loads from the new service areas to the nearest existing sewage treatment plant.

5. The acceptance of the regionalization concept when applied to Montgomery County leads to the formulation of recommendations that all industrial and non-municipal treatment plants that can be phased out, should be phased out. Hence, all industrial and non-municipal treatment plants lying within existing sewer service areas or within projected 10-year growth areas are recommended for phasing out in the 10-year horizon. The only exception to this principle is in the case of industrial treatment plants where wastewaters are not amenable to treatment at a municipal facility. In such instances pre-treatment should be considered.

6. Conversely, industrial and non-municipal plants located outside 10-year growth areas have been categorically recommended to continue operations for the coming decade. Major effort, however, should be made to avoid the creation of new facilities of this type, especially those which would tend to lead to their proliferation in any given area.

7. The disposition of all 90 treatment plants (municipal and industrial as well as non-municipal) is summarized in chart form in figure viii-2. Information includes 1969 average daily flow, design capacity and the average flow in 1979, as well as recommendations concerning the future of each plant in terms of whether there will be no change in design capacity, if expansion is necessary, if phase-out is proposed and where flow will be sent for treatment.

8. The recommendations of the sewage facilities plan involving both treatment plants and collection system components are graphically summarized in figure viii-3. Existing sewer service areas, 10-year growth areas, existing collection system components and proposed collection system components are shown as are those treatment plants which are recommended to be operational within Montgomery County by the year 1979.

9. While figures viii-2 and viii-3 summarize the recommendations of the sewage facilities plan, a brief discussion of the more salient features on a watershed-by-watershed basis is presented in the following section.

SEWAGE FACILITY RECOMMENDATIONS BY WATERSHED

1. Pennypack Watershed

a. The Upper Moreland-Hatboro municipal plant is recommended for expansion. The Chapel Hill non-municipal plant will continue to serve a residential area in this watershed with no change in anticipated flow.

b. The other six non-municipal plants should be phased out within the 10-year planning period and flows from them diverted to the Philadelphia system. These six plants are: Bethayres Estates, Lower Moreland School Authority, Holy Redeemer Hospital, Meadowbrook Apartments, the Academy of the New Church and St. Catherine of Sienna.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: along the Pennypack Creek from Moredon Road to Bryn Athyn Borough; in Meadowbrook from Washington Lane to Pennypack Creek; and along the Pennypack Creek from the Hatboro-Upper Moreland Township line to Witmer Road. A force main paralleling the Pennsylvania Railroad from Davisville Road to Byberry Road is of major significance in serving a portion of Upper Moreland Township.

d. For purposes of this report, the Poquessing Watershed has been treated as a part of the Pennypack Watershed.

2. Tookany Watershed

a. It is recommended that all future growth will be provided with public sewer service through the city of Philadelphia system.

b. It is recommended that the Standard Pressed Steel Sewage Treatment Plant be phased out and its flows treated at the Philadelphia plant.

c. There are no major interceptor lines of significance recommended to further the orderly growth of sewer service in this area, but several existing major lines will need to be replaced and capacity expanded.

3. Neshaminy Watershed

a. Three of the four municipal treatment plants are recommended for continued operation. The Hatfield Township plant is recommended for expansion. The fourth municipal plant in this watershed, the Hatfield Borough plant, is recommended for phasing out with treatment afforded by the Hatfield Township plant.

b. Six industrial and non-municipal plants which lie within this watershed should be phased out. The Hunter Spring, Link Belt, Golden Chariot Motel and Montgomery School facilities should be connected to the Hatfield Township sewage treatment plant, while the American Olean Tile Company and Philco-Ford Corporation plants should be connected to the Lansdale plant.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: along the Park Creek from Welsh Road to County Line Road in Horsham Township (the economic feasibility of this alternative is presently under study); along an unnamed tributary of the Neshaminy Creek generally paralleling Route 309 from the Neshaminy Creek to County Line Road in Hatfield Township; along the Neshaminy Creek from the existing Hatfield Borough sewage treatment plant downstream to Trewigtown Road; along Bethlehem Pike and Lansdale Avenue from Colmar to the Lansdale-Montgomery Township line; and along an unnamed tributary parallel to and between County Line Road and Horsham Road from Colmar to the vicinity of Stump Road. These latter two interceptor lines also involve significant lengths of force mains, the one providing service to portions of Montgomery Township adjacent to Lansdale and the other providing service to extensive portions of Montgomery Township in the Little Neshaminy Watershed.

4. Wissahickon Watershed

a. Five municipal treatment plants serve this watershed plus the Philadelphia Southwest Plant. The Aidon Lair plant is recommended for phasing out by 1979; the North Wales plant is also recommended for phasing out, subject to a feasibility study. Two plants (the Ambler and Upper Gwynedd plants) are recommended for expansion by 1979; the Abington plant is recommended to continue operations at essentially its present capacity.

b. The following industrial plants should be phased out and connected to the Upper Gwynedd plant: Merck, Sharp & Dohme; Precision Tube and Leeds & Northrup. In addition, the following non-municipal and industrial treatment facilities should be phased out and incorporated into the Ambler treatment plant: Delaware Valley, Gwynedd Mercy College, Silver Stream Nursing Home, Nicolet Industries, Penn Pike Motor Inn and Certain-Teed Pipe Co. The McNeil Laboratories and Selas Corporation plants should be phased out with treatment afforded by the Philadelphia sewer system and the Abington Township system, respectively.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: along the Wissahickon Creek from Ambler to Penllyn Pike and from the Lower Gwynedd-Whitpain Township line to an unnamed tributary just short of Route 202, along a branch of the Trewellyn Creek to Sumneytown Pike with a force main to Spring House in the first phase to be replaced by a gravity line down the Trewellyn Creek to the Wissahickon interceptor at a later date, along Hancock Street to Dodsworth Run to serve parts of Upper Gwynedd; through the Hamilton Park section of Lower Gwynedd Township between Bethlehem Pike and Norristown Road; along the Sandy Run and Wissahickon Creek from the Fort Washington Interchange to the Ambler treatment plant; and along the Lorraine Run, complete with a force main crossing Stenton Avenue, to serve central portions of Whitmarsh Township; a gravity intercepting sewer following the Wissahickon Creek from below Stenton Avenue to connect with the city of Philadelphia. Wissahickon Low Level Collection Sewer is recommended to replace an existing sewer and pumping station that parallels and eventually meets Stenton Avenue at a point just west of Northwestern Avenue.

5. Lower Schuylkill Watershed

a. Four of the seven municipal treatment plants within the Montgomery County section of the watershed are recommended to continue operations at essentially their present level (Bridgeport, Matsunk, Norristown and Upper Merion (Trout Run)). Further study of the Whitemarsh plant will be needed to determine if expansion is necessary due to an increased service area. The Conshohocken and East Norriton-Plymouth municipal plants are recommended for expansion before 1979. No municipal treatment plants are recommended for phasing out in this watershed.

b. The Daring Paper and Polychem plants both have industrial treatment plants in Bridgeport Borough lying within 10-year growth areas and should be phased out, if possible. At this time it is not certain whether either the Bridgeport or Matsunk facility could be modified to accept the types of waste presently treated by these plants. The Nicolet Industries and Taylor Corporation plants should be phased out with treatment diverted to the Norristown treatment plant, while the Westfield Paper Corporation plant in West Conshohocken and Weyerhaeuser Paper plant in Whitemarsh should continue to operate in the next 10-year period.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: a new system serving West Conshohocken and a part of Lower Merion, with treatment to be provided in the Conshohocken STP. The major lines would parallel the Schuylkill River from the Conshohocken Bridge to Saw Mill Run; along Mill Run to Route 23; along Arrowmink Run to New Gulph Road; and parallel Matsonford Road to serve West Conshohocken; along the Gulph Creek, upstream from Gulph Mills, to provide service to portions of Upper Merion Township; in the upper portions of Abrams Run to provide service to portions of Upper Merion Township; along the Pennsylvania Turnpike between Germantown Pike and Butler Pike to provide service to portions of Plymouth and Whitemarsh townships; and along an unnamed tributary of the Schuylkill River to provide service to the Barren Hill Road section of Whitemarsh Township.

6. Lower Perkiomen Watershed

a. Montgomery County's treatment plant is the only operational municipal plant within this stream reach, and it is recommended for continued operation. It will be necessary to more than triple its capacity within the next 10 years.

b. Eleven industrial and non-municipal plants are recommended for phasing out in the next 10 years with connections to the Montgomery County plant at Oaks for treatment. These 11 plants are: Ridge View Terrace Mobile Home Park, Collegeville Inn, College Arms Apartments, Ursinus College, Valley Forge Terrace Mobile Home Park, Ajax Stamping and Manufacturing, Superior Tube, Skippack Elementary School, Lower Providence-Worcester Joint School, Limerick Trailer Park and Western Montgomery County Vocational-Technical School.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: along Route 113, Creamery Road, Evansburg Road and Skippack Pike to provide service to the Skippack and Creamery portions of Skippack Township; along the Perkiomen Creek from Graterford to Schwenksville (and upstream); along the Lodal Creek to provide service to portions of Perkiomen Township; along School House Run to provide service to Trappe Borough; paralleling Main Street to provide service to Collegetown and portions of Trappe; and paralleling Germantown Pike to provide service to Evansburg in Lower Providence.

7. Upper Perkiomen Watershed

a. All three municipal plants in this watershed are recommended for continued operation within the next 10 years. No major expansion is contemplated for these plants. Flows from the proposed service areas in Lower Frederick and Upper Salford will be carried in an interceptor past Schwenksville with connection made to the Montgomery County Sewer Authority interceptor above Graterford. Treatment will be at the county plant at Oaks.

b. The Pillsbury Company treatment plant should be phased out and its flow treated at the Upper Montgomery treatment plant. That is the only non-municipal/industrial plant within this watershed to be recommended for phasing out.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: along the Perkiomen Creek to provide service to portions of Lower Frederick and Upper Salford townships; along the Macoby Creek to provide service to portions of Marlborough Township and along the Perkiomen Creek upstream from the Green Lane Reservoir to provide service to the Palm area of Upper Hanover Township.

8. Swamp Creek Watershed

a. The Boyertown treatment plant should continue to operate up to its design capacity and as such no major changes are recommended in the coming 10 years. It is recommended, however, that the other municipal plant in this watershed (the Berks-Montgomery facility) be expanded by 1979. In order to provide sewer service in the Frederick-Obelisk area a new municipal interim treatment plant is recommended.

b. The non-municipal treatment facility of the Mennonite Home for the Aged is to be phased out with flows to the proposed Frederick-Obelisk plant. The other two plants in this watershed are not recommended for phasing out within the next 10 years because they are far removed from any existing service areas and/or 10-year growth areas.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: along the lower reaches of Swamp and Goschenhoppen creeks to provide service to Lower Frederick Township.

9. Upper Schuylkill Watershed

a. Of the two municipal treatment plants now operating in the watershed, one (the Royersford plant) is recommended for phasing out by 1979, subject to a feasibility study, while the other (the Pottstown plant) is recommended for expansion by 1979.

b. The following industrial and/or non-municipal treatment plants are recommended for phasing out within the coming 10-year period (Arlan's Department Store, North End Shopping Center and the Doehler-Jarvis plant). Effluent from all should be treated in the Pottstown sewage treatment plant.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: along the Manatawny Creek to provide service to West Pottsgrove and portions of Berks County; along an unnamed creek paralleling Farmington Avenue to provide service to Upper Pottsgrove Township; along the Sprogels Run and Sanatoga Creek to provide service to Upper and Lower Pottsgrove townships; along Mingo Creek, Limerick Road and Ridge Pike to provide service to the central portions of Limerick Township; and along Lewis Road to provide service to western portions of Limerick Township.

10. Skippack Watershed

a. At the present time, there are two treatment plants within this watershed, the Souderton Borough plant and the Upper Gwynedd-Towamencin plant, both of which are recommended for expansion by 1979.

b. The Nice Ball Bearing plant is the only non-municipal/ industrial plant that is recommended for phasing out in this watershed in the coming 10 years. Their wastewater should be treated in the Upper Gwynedd-Towamencin plant.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: along the Skippack Creek and Grange Avenue and Germantown Pike to provide service to the Eagleville section of Lower Providence Township and the Fairview Village section of Worcester Township; along Evansburg Road and Skippack Pike to provide service to the upper portions of Skippack Township (this is the upper portion of a previously referred to interceptor line); and along the Skippack Creek in Franconia Township to provide service to areas adjacent to Souderton. In addition a line is recommended along Route 113 west of Souderton with treatment at either the Souderton or Telford plant, depending on the outcome of additional feasibility studies.

11. East Branch of the Perkiomen Creek Watershed

a. The Lower Salford Township treatment plant is recommended for expansion before 1979 and the only other municipal treatment plant in this watershed - the Telford Borough facility - is recommended to continue its operations at essentially its current level. Moreover, a new municipal interim package plant is recommended to serve the Tylersport area of Salford Township.

b. The New Life Boys Ranch treatment plant is the only operating non-municipal treatment plant in the watershed and is recommended to continue its operation because it is far removed from any probable 10-year growth area.

c. Major interceptor lines of most significance to the orderly growth of sewer service in this area are: paralleling Route 113 to provide service to the Lederach area of Lower Salford Township; paralleling Route 113 and Telford Pike to provide service to the central portions of Franconia Township (see comment at end of subsection C, Skippack Watershed) and along Old Sunneystown Road and Bergey Road to provide service to the Woxall, Bergey and Salfordville portions of Upper Salford Township (this is the upper portion of a previously mentioned interceptor).

SCALE OF RECOMMENDATIONS

1. Since this report is not an economic feasibility study, it is difficult to measure the recommendations in monetary terms. However, based upon preliminary estimates, it would appear that the cost of implementing the recommendations of the sewer facilities plan is \$66 million.

2. It is estimated that the total residential population to be served by municipal wastewater treatment facilities by 1979 is 754,000 persons. This represents an increase of 263,000 persons from the 1969 figure of 491,000. The 1979 estimate of 754,000 people is 92% of the estimated total population at that time.

3. It is anticipated that by 1979, 42 of the 60 municipalities participating in this study will be providing public sewer service to more than 90% of their respective populations. This is compared with only 23 municipalities which provided public sewer service to more than 90% of their respective populations in 1969.

4. Data also shows that, at present, 15 municipalities provide public sewer service for 10% of their population or less. By 1979, it is anticipated that every municipality will provide at least 10% of their population with some type of public sewer service. In fact only five municipalities will probably provide less than half of their population with public sewer service by 1979. Only those persons living in a truly rural environment would not be provided with such services.

5. Of the 29 municipal treatment plants existing in 1969, three have been recommended for phasing out, 15 will require expansion by 1979 and two new municipal package plants have been recommended. Eleven municipal plants would continue their present operation with no significant change.

6. Of the 35 non-municipal plants in Montgomery County at the present time, it is anticipated that 25 would be phased out by 1979 and the other 10 would continue to operate with no significant change through 1979.

7. Of the 26 industrial plants five are visualized to continue at their present operation with no significant change by 1979, while the other 21 are recommended for phasing out. That recommendation is predicated on their waste being amenable to treatment at municipal plants.

Figure viii-4

STATUS OF WASTEWATER TREATMENT PLANTS
ASSUMING IMPLEMENTATION OF PLAN RECOMMENDATIONS

Type of Plant and Status	Number of Plants 1969	Status of Plants 1979
Municipal Plants	29	
Continue present operation- no change		11
Phase out		3
Expand		15
Construct new facility		2
Non-Municipal Plants	35	
Continue present operation- no change		10
Phase out		25
Industrial Plants	26	
Continue present operation- no change		5
Phase out		21
Final Status after Plan Imple- mentation		
Continue present operation- no change		26
Phase out		49
Expand		15
New		2

Note: 49 plants are to be phased out, 2 new plants provided. This results in a net reduction of 47 plants.

Source: Albright & Friel recommendations, 1970.

8. While in 1979 there will be only one less municipal sewage treatment plant in the county, the total number of all types of sewage treatment plants has been recommended for significant reduction. The number of plants operating in 1979 would be 43. The net elimination of 47 plants should be viewed as a significant stride forward in wastewater management of Montgomery County. The elimination of these plants is accomplished through the orderly extension of existing systems into the 10-year growth areas that have been delineated. The disposition of the sewer treatment plants in accordance with the recommendations of the 10-year county sewage facilities plan is summarized in figure viii-4. This information is a summary of the more detailed recommendations found in figure viii-2.

9. The county-wide sewage facilities plan has recognized the value of regionalized facilities. For a plan of this nature to be implemented, it must now be supplemented in many cases by detailed engineering studies to verify that the solutions herein recommended are workable from an economic standpoint.

10. A county-wide sewage facilities plan is intended to assist and guide in the orderly development of needed wastewater facilities so as to meet the growing needs of Montgomery County. Until now no such comprehensive sewer planning existed on a county-wide basis. In the long run, combining sound planning principles with good engineering judgment will, it is hoped, produce a new trend in meeting Montgomery County's sewage problems. This report is intended to be the first basic step in establishing that trend.

11. In order for this plan to be a proper and useful guide, it must be periodically updated to conform with the inevitable changes in land development, population growth, technological improvements and economic considerations.

IX

CRITICAL SEWER PROBLEM AREAS

In recognition of the health hazards posed to the community's welfare in certain areas of the county by problems associated with wastewater disposal, an inventory of such areas was prepared, critical sewer problem areas were identified and background information was assembled and analyzed. The amelioration of conditions adversely affecting community health in these critical sewer problem areas becomes a "top priority" thrust of the county-wide sewage facilities plan. In-depth studies leading to the timely implementation of the plan recommendations are needed for those critical sewer problem areas which fall within the 10-year growth areas. For areas outside the 10-year growth areas, programs must be developed to minimize the existing and potential hazards. Every effort should be made to avoid the creation of new critical problem areas through the repetition of past mistakes.

Therefore, the primary purposes of this chapter are to:

1. Define what a critical sewer problem is and prepare a county-wide inventory of these areas;
2. Facilitate general awareness of the nature and the scale of the problems involved;
3. Develop recommendations for corrective action (as such the chapter should be viewed as a basic input of the plan itself); and
4. Fulfill the intent of the Pennsylvania Sewage Facilities Act concerning the identification of community health hazards involving sanitary wastewater disposal.

THE TWO TYPES OF CRITICAL SEWER PROBLEM AREAS

1. Malfunctioning On-site Disposal Systems
 - a. This type of problem area includes those portions of the county where on-site systems are known to malfunction as well as those areas of the county where malfunctioning on-site systems can be expected because of existing conditions.
 - b. Only areas where existing (or potential) malfunctioning on-site disposal systems are "clustered" have been included in the inventory.
 - c. Malfunctioning on-site systems can cause ground water pollution, surface seepage and/or stream pollution.
2. Areas Where Sewage Treatment Plants are Proliferated
 - a. This type of problem area includes those portions of the county where sewage treatment plants are clustered (refer to Chapter V).
 - b. Proliferation of plants causes difficulties in stream quality management and often results in stream pollution.

METHODS USED TO DELINEATE CRITICAL SEWER PROBLEM AREAS

1. The planning staff prepared a preliminary inventory based on meetings with local officials, reports available and general knowledge of the county.
2. Preliminary inventory was given in-depth review by the Montgomery County supervising sanitarian's office (Pennsylvania Department of Health).
3. Field checks were conducted by planning staff to verify conditions prevalent and to finalize identification and delineation of problem areas.

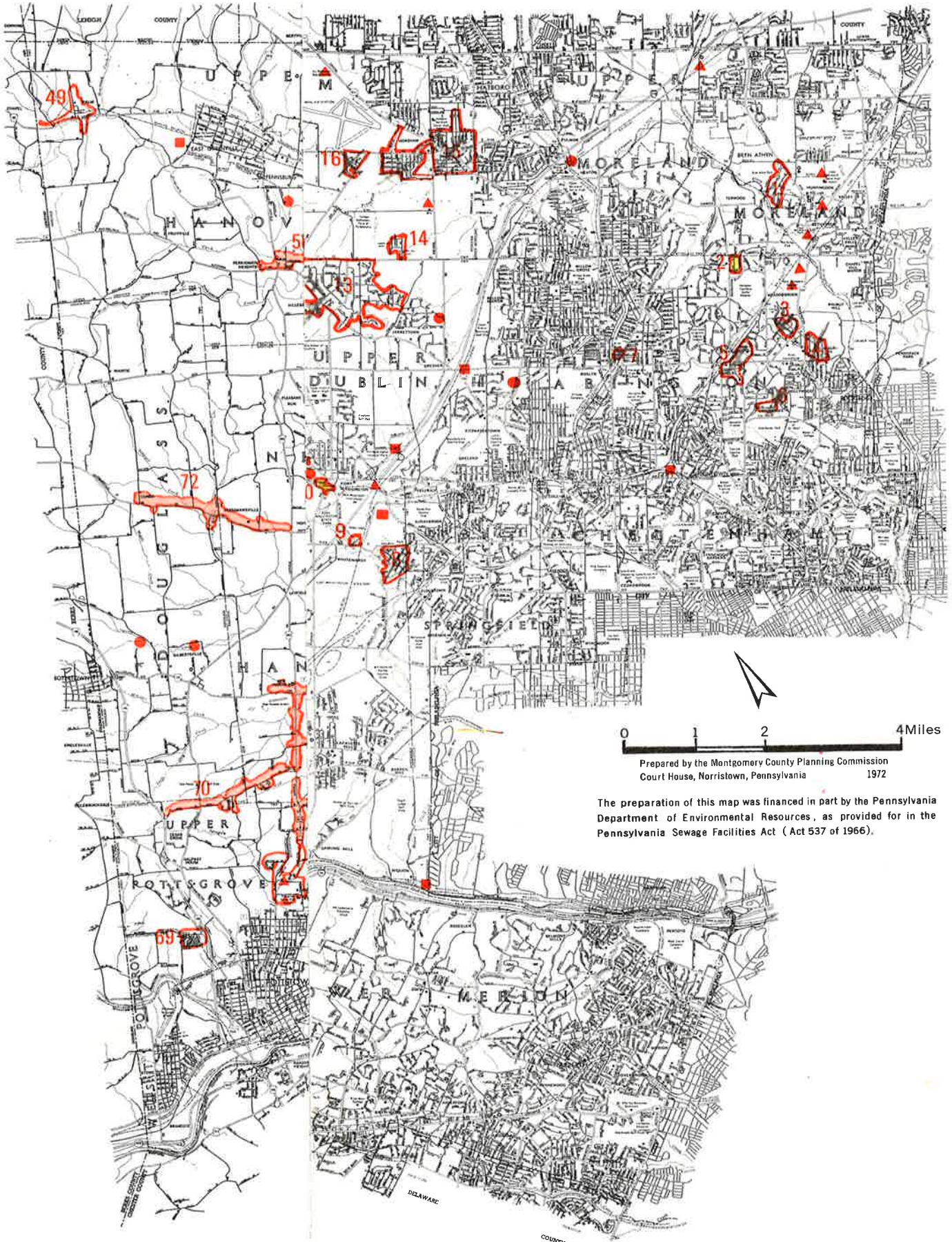
AREAS WITH MALFUNCTIONING ON-SITE SYSTEMS

1. The inventory identifies 73 areas which are summarized in figure ix-1 and includes background information. The areas are graphically summarized in figure ix-2.
2. Fifty-four of the 73 identified problem areas are located within 10-year growth areas. Assuming implementation of the plan, the health hazards in these 54 areas would be eliminated by 1979.
3. Virtually all of the critical sewer problem areas involve residential land uses that pose hazards to county residents.
4. Only one-third of the problem areas are now served by central water facilities. In 48 of the 73 areas, therefore, the distinct possibility exists that residents are relying upon a water supply that is or can easily become contaminated.
5. Sixty-one of the 73 problem areas are located on soils which pose severe limitations to on-site systems.
6. Many of the problem areas consist of relatively new developments. This is an indication that land development and the provision of community facilities (i.e. public sewer service) are not adequately coordinated in Montgomery County.
7. Some of the problem areas are quite old and are now experiencing difficulties because of inherent soil limitations such that on-site systems are not capable of handling the increasing volume of wastewater created by the typical resident.
8. In some of the problem areas containing housing of marginal value, the provision of public sewers (as well as other public facilities normally paid by front foot-type assessments) poses an economic situation that requires a new financial approach.

AREAS INVOLVING PROLIFERATED SEWAGE TREATMENT PLANTS

1. The inventory identifies 14 areas which are summarized in figure ix-3 and graphically delineated in figure ix-4.
2. Assuming implementation of the sewer plan, eight of the 14 areas identified will no longer constitute a problem area by 1979 because of the plan's recommendation to eliminate most, if not all, of the treatment plants involved.

SYSTEMS



0 1 2 4 Miles

Prepared by the Montgomery County Planning Commission
Court House, Norristown, Pennsylvania 1972

The preparation of this map was financed in part by the Pennsylvania Department of Environmental Resources, as provided for in the Pennsylvania Sewage Facilities Act (Act 537 of 1966).

CAUTIONING ON-SITE SEWAGE SYSTEMS

Map Number	Identifying Name	Municipality	In A Ten-Year Growth Area	Geographic Isolation ¹	Topographic Impediments	Land Use Type	Character of Development	Water Supply Characteristics	Soil Suitability for On-Site Disposal
11	Skippack	Skippack	Yes	Montgomery County-4-1/2 Miles	Must cross ridge	Res./Comm.	Med. Density/ Intermittent	Wells	Severe & some moderate
12	Cedars	Worcester	No	U. Gwynedd/Towamencin 1-1/2 Miles	None	Res./Comm.	Low Density/ Scattered	Wells	Severe & some moderate
13	Mainland	Lower Salford/Towamencin	No/Yes	U. Gwynedd/Towamencin-1 Mile	None	Res./Comm./Inst.	Med. Density/ Intermittent	Wells	Severe & some moderate
14	Elroy	Franconia	No	Hatfield Boro. 1 Mile	Must cross ridge	Residential	Low Density/ Scattered	Wells	Severe & some moderate
15	Franconia Square	Franconia	No	L. Salford-1 Mile	None	Residential	Low Density/ Widely Scattered	Wells	Severe & some moderate
16	Franconia Square	Franconia	Mostly Yes	Telford-1 Mile	Lies astride a ridge top	Res./Comm.	Low Density/ Scattered	Wells	Severe & some moderate
17	Earlington	Franconia	No	Telford-1-1/2 Miles	None	Residential	Low Density/ Widely Scattered	Wells	Severe & some moderate
18	Tylersport	Salford	Yes	Proposed package plant	On ridge top	Res./Comm.	Low Density/ Intermittent	Wells	Moderate & some severe
19	Palm	Upper Hanover	Yes	U. Montgomery County-1-1/2 Miles	None	Res./Comm.	Low Density/ Scattered	Wells	Moderate & severe
20	Perkiomen Heights	Upper Hanover	No	U. Montgomery County-1-1/2 Miles	Must cross Green Lane Reservoir	Residential	Low Density/ Intermittent	Wells	Severe
21	Perkiomenville	Upper Frederick/Marlborough	No	Green Lane/Marlborough 1 Mile	Downstream	Res./Comm.	Low Density/ Intermittent	Wells	Severe
22	Woxall	Upper Salford	Yes	Schwenksville-3-1/2 Miles	On ridge top	Residential	Low Density/ Intermittent	Wells	Severe and some mod.
23	Salfordville	Upper Salford	Yes	Schwenksville-3 Miles	On ridge top	Residential	Low Density/ Scattered	Wells	Severe and some mod.
24	Hendricks-Salford	Upper Salford	Yes	Schwenksville-3 Miles	None	Residential	Low Density/ Widely Scattered	Wells	Severe
25	Spring Mount	Lower Frederick	Yes	Schwenksville 1-1/2 Miles	None	Residential	Low Density/ Intermittent	Wells	Moderate, some severe & slight
26	Zieglersville	Lower Frederick	Yes	Schwenksville 1-1/2 Miles	None	Res./Comm.	Low Density/ Scattered	Wells	Moderate, some severe
27	Delphi	Lower Frederick	Yes	Schwenksville Adjacent	None	Residential	Med. Density/ Intermittent	Central	Severe
28	Lederach	Lower Salford	Yes	Lower Salford 1 Mile	On ridge top	Residential	Low Density/ Intermittent	Wells	Severe, some moderate
29	Graterford	Perkiomen	Yes	Montgomery County-4 1/2 Miles	None	Residential	Low Density/ Intermittent	Wells	Moderate
30	Pamenpinto Drive Area	Perkiomen	Yes	Montgomery County-4 Miles	None	Residential	Med. Density/ Contiguous	Wells	Moderate
31	Acoma Lane Area	Perkiomen/Upper Providence	No	Montgomery County-3 Miles	None	Residential	Low Density/ Contiguous	Wells	Severe
32	Rahns	Perkiomen	Yes	Montgomery County-3-1/2 Miles	None	Res./Comm.	Med. Density/ Intermittent	Wells	Moderate & some severe
33	Trappe	Trappe	Yes	Montgomery County-2-1/2 Miles	None	Residential	Med. Density/ Intermittent	Central	Severe, some moderate
34	Limerick Center	Limerick	Yes	Montgomery County-2-1/2 Miles	Must cross ridge	Res./Comm.	Med. Density/ Intermittent	Wells	Severe
35	Limerick Center	Limerick	Yes	Montgomery County-3-1/2 Miles	Must cross ridge	Residential	Med. Density/ Intermittent	Wells	Moderate & some severe
36	Linfield	Limerick	Yes	Montgomery County 3 miles	None	Res./Comm.	Med. Density/ Intermittent	Wells	Moderate & some severe
37	Sanatoga	Lower Pottsgrove	Yes	Pottstown-1 Mile	Downstream	Res./Comm.	Low Density/ Intermittent	Wells	Severe & moderate
38	Route 663	New Hanover & Lower and Upper Pottsgroves	No/Yes	Pottstown-Adjacent	On ridge top	Residential	Low Density/ Scattered	Wells	Severe & some moderate
39	Oakview	West Pottsgrove	Yes	Pottstown-1/2 Mile	None	Residential	Med. Density/ Contiguous	Wells	Severe
40	Moyer	Upper Pottsgrove, New Hanover & Douglass	No	Berks-Montgomery County-1/2 Mile	Major ridge traverses problem area	Residential	Very Low Density/ Scattered	Wells	Severe & some moderate
41	New Hanover Square	New Hanover	No	Berks-Montgomery County-1/2 Mile	Downstream	Res./Comm.	Low Density/ Scattered	Wells	Severe
42	Congo-Sassamansville-Hoffmansville	Douglass & New Hanover	No	Berks-Montgomery County-2 Miles	None	Res./Inst.	Low Density/ Scattered	Wells	Severe
43	Frederick & Obelisk	Upper Frederick	Yes	Proposed package plant	None	Res./Inst.	Low Density/ Scattered	Wells	Severe

NOTE: ¹"Geographic Isolation" is measured in straight line distance to nearest public sewer system.

Source: Montgomery County Planning Commission staff compilation based upon meetings with staff of Supervising Sanitarian, Pennsylvania Department of Health, Fall 1970.

3. Six of the 14 problem areas are expected to remain as problem areas in 1979 - three of somewhat reduced proportions, two of increased proportions and one of approximately the same proportions.

OVERALL OBSERVATIONS

The elimination of the problem areas should be viewed as a "top priority" of the plan and its implementing program.

More detailed studies are needed to implement the above recommendations. These further studies should consider economic feasibility and engineering details.

Some of the existing problem areas remain unresolved by this plan. They must be further studied as part of the on-going planning process. At the very least, effort must be made to prevent the worsening of the health hazards in these areas. The provision of public water service, the cessation of new building activity, accelerated surveillance of treatment plant operations and upgrading the quality of effluent are means to accomplish this objective.

It is essential that appropriate levels of government take the necessary steps to avoid the creation of new problem areas. Progress that can be made to improve the environmental health of the community through the implementation of the county-wide sewage facilities plan can be "undone" if new problem areas are created by the failure of proper authorities to exercise their leadership and regulatory roles.



Some new residential developments must rely upon on-site sewage systems which are potentially hazardous, especially when occurring on certain soil types. Such problems could be avoided if land development and the provision of public sewers were more closely coordinated.

Figure 1x-3

PROLIFERATED SEWAGE TREATMENT PLANT TYPE OF CRITICAL SEWER PROBLEM AREA

Cluster Identification	Watershed and Stream	Municipalities	Number of Plants Involved				Relation of S.T.P. to 10-Year Recommendations	Status of Critical Sewer Problem Area (as of 1979)
			Total	Municipal	Non-municipal	Industrial		
A	Pennypack/Pennypack and Huntingdon Valley Creek tributaries, Robin Hood Brook	Lower Moreland and Abington	5	--	5	--	All 5 of these plants are eliminated	No longer a problem area
B	Lower Wissahickon Creek/Sandy Run, Pine Run	Upper Dublin, White-marsh and Ambler	10	4	1	5	7 of the 10 plants are eliminated; 2 expand; 1 uncertain	No longer a problem area
C	Lower Schuylkill/Schuylkill River and Spring Mill Creek	Whitemarsh, Plymouth, Conshohocken, Upper Merion, Bridgeport, Norristown	11	6	--	5	Only 1 of the 11 plants is eliminated; 2 expanded	Remains a problem area but of increased proportions
D	Middle Schuylkill/main stem of Schuylkill River	Upper Merion, West Norriton, Lower Providence, Upper Providence, Royersford and Chester County	12	5	3	4	5 are to be phased out; 4 are to be expanded; 2 are uncertain, and 3 new plants proposed	Remains a problem area but of reduced proportions
E	Perkiomen, Skippack/Perkiomen Creek and unnamed tributary thereof	Worcester, Lower Providence, Skippack and Colleeville	8	--	6	2	7 of the 8 are to be eliminated	No longer a problem area
F	Perkiomen Creek/Landis Brook	Limerick	4	--	4	--	3 of the 4 are to be eliminated	No longer a problem area
G	Upper Schuylkill Watershed/Schuylkill and tributaries thereof	Pottstown, Lower Pottsgrove, West Pottsgrove, Berks and Chester counties	7	2	4	1	5 of the 7 to be eliminated; expand 1; and 1 is uncertain and may be replaced with a new plant	No longer a problem area
H	Swamp Drainage Basin/Swamp Creek, tributaries of the Scioto	Upper Frederick and New Hanover	3	--	3	--	1 of the 3 to be eliminated; 1 new plant proposed	Remains a problem of same magnitude
I	Swamp Creek/main stem of Swamp Creek	Douglass	2	2	--	--	1 is to expand	Remains a problem of increased proportion
J	Upper Perkiomen/main stem of Perkiomen Creek	Green Lane, Marlborough, Upper Hanover and East Greenville	6	2	3	1	Only 1 of the 6 plants is to be phased out	Remains a problem area but of reduced proportions
K	Skippack/Skipack and Towamencin Creeks and tributary thereof	Towamencin, Upper Gwynedd and Franconia	5	2	--	3	Only 2 of the 5 plants are to be eliminated; 1 to be expanded	Remains a problem area but of reduced proportions
L	Neshaminy/West Branch of Neshaminy Creek and its tributary	Montgomery, Hatfield Boro. and Twp., Lansdale and Bucks County	10	5	2	3	Only 6 of the 10 plants are to be eliminated; 2 to be expanded; 1 uncertain	No longer a problem area
M	Upper Wissahickon/main stem of Wissahickon Creek, Trewellyn Creek, and tributary thereof	North Wales, Upper Gwynedd, Horsham and Lower Gwynedd	8	2	3	3	7 of the 8 plants are to be eliminated; 1 is to be expanded	No longer a problem area
N	Neshaminy/Little Neshaminy Creek and tributary thereof	Horsham and Bucks County	5	1	4	--	4 of the 5 plants are to be eliminated; 1 is to be expanded	No longer a problem area

Source: Montgomery County Planning Commission Staff Compilation, Fall 1970.

RESOLVED AND UNRESOLVED PROBLEM AREAS OF SEWAGE TREATMENT PLANT CLUSTERS IN FACILITIES PLAN

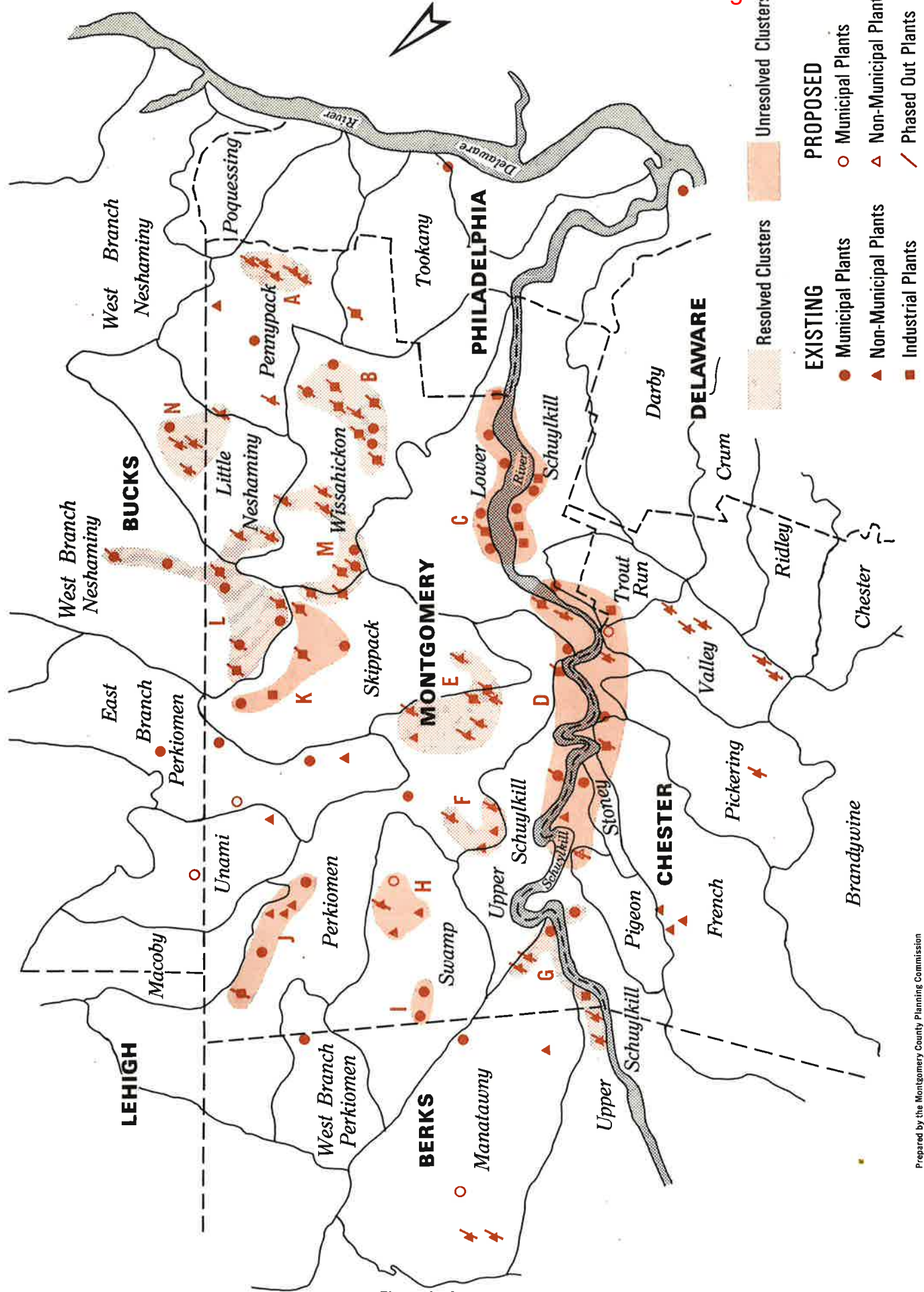


Figure ix-4

Prepared by the Montgomery County Planning Commission
Court House, Norristown, Pennsylvania
1972

The preparation of this map was financed in part by the Pennsylvania
Department of Environmental Resources, as provided for in the
Pennsylvania Sewage Facilities Act (Act 537 of 1965).

Source: Montgomery County Planning Commission, 1970. Revised May 1972

Note: Letters refer to Figure ix-3.

PROBLEMS OF IMPLEMENTATION AND RECOMMENDATIONS FOR PLAN EFFECTUATION

The Montgomery County Sewage Facilities Plan rests on the basic premise that optimum and economic wastewater collection and treatment is achieved when drainage basins are viewed as the basic planning units. The foundation of this concept is that physiographic, rather than political, boundaries are most appropriate for sewage facilities planning. This, in turn, implies a change in the manner in which sewer programs are conceived, planned and executed in Montgomery County.

The principles of implementation of watershed-wide sewer planning present challenges to Montgomery County and the municipalities. No mechanism now exists to coordinate policy formation and program development or to allocate resources among those organizations responsible for the municipal sewage plants, the 61 non-municipal and industrial plant operators and the six adjacent counties. The voluntary cooperation that has been practiced in the past simply has not been sufficient to prevent the proliferation of plants that has occurred in the past decade.

This chapter is concerned with identifying the essential principles that tend to impede the implementation of the recommendations of this report and the spirit of watershed-wide planning upon which it is based. The key issues raised in the report will be summarized. Those factors which tend to inhibit watershed-wide solutions to sewer problems will be discussed, and recommendations for resolving these factors will be advanced.

REVIEW OF FINDINGS

1. The Montgomery County Sewage Facilities Plan has two important aspects. They are as follows:
 - a. The plan inventories and analyzes many facts related to sewage planning which had not heretofore been systematically compiled and organized in a single county-wide report.
 - b. The plan draws basic conclusions from the above information concerning the best way to approach wastewater disposal in the future.
2. It is estimated that 74% of Montgomery County residents are now served by municipal collection and treatment plants. Of the 170,000 residents that now depend upon on-site disposal systems in the county, all but 30,000 reside in locations relatively close to existing sewer service areas. One of the goals of the sewage facilities plan is to provide public sewer service to most of these 170,000 people.
3. Seventy-three problem areas characterized by malfunctioning on-site disposal systems have been identified in Montgomery County. The provision of public sewer service to as many of these critical sewer problem areas as feasible is also a basic plan goal.
4. Available evidence suggests that Montgomery County's streams are seriously polluted. Both sewage treatment plant effluent and malfunctioning on-site disposal systems contribute significantly to the pollution. Another fundamental goal of the sewage facilities plan is to minimize the stream pollution caused by sewage-related problems to the extent practical.

5. It is estimated that an additional 168,000 persons will live in Montgomery County by 1979. Because of generally poor soil conditions for on-site disposal facilities, a goal of the plan is to provide public sewer service to as many of these "new residents" as feasible.

REVIEW OF RECOMMENDATIONS

1. The county-wide sewage facilities plan recommends the extension of public sewer service to 56 of the 73 critical sewer problem areas where malfunctioning on-site disposal systems exist or where a public health hazard is a clear potential.

2. Recommendations have been advanced which would provide sewer service to over 75% of the county's presently unserved population and which would provide public sewer service to 91% of the county's anticipated 1979 population of 829,000.

3. The plan also strongly recommends discouraging construction of new sewage treatment plants, phasing out of three municipal treatment plants (Hatfield Borough, North Wales and Royersford), reducing the number of industrial plants from 26 to 5 and the number of non-municipal plants from 35 to 10.

4. Only two small interim municipal package-type sewage treatment plants have been proposed to provide sewer service in Frederick-Obelisk and Tylersport.

5. The plan recommends more detailed study to explore further consolidation of existing municipal, industrial and non-municipal treatment plants.

6. Further studies are also recommended for those 25 critical sewer problem areas which have not been recommended for public sewer service within 10 years.

7. On a county-wide basis the sewage facilities plan recommends the following:

- a. Additional sewage treatment plant capacity of approximately 18.6 million gallons per day.
- b. Additional length of major interceptor lines - 152½ miles.
- c. Additional length of force mains - 27½ miles.
- d. Additional pumping stations - 46.

This information is presented in figure x-1 for each of the municipal sewerage systems in the county.

8. It is estimated that construction costs of the items listed above would represent approximately \$51 million. This is broken down as follows:

- a. Additional sewage treatment plant capacity - \$25.3 million.
- b. Interceptors - \$22.3 million.

3. Six of the 14 problem areas are expected to remain as problem areas in 1979 - three of somewhat reduced proportions, two of increased proportions and one of approximately the same proportions.

OVERALL OBSERVATIONS

The elimination of the problem areas should be viewed as a "top priority" of the plan and its implementing program.

More detailed studies are needed to implement the above recommendations. These further studies should consider economic feasibility and engineering details.

Some of the existing problem areas remain unresolved by this plan. They must be further studied as part of the on-going planning process. At the very least, effort must be made to prevent the worsening of the health hazards in these areas. The provision of public water service, the cessation of new building activity, accelerated surveillance of treatment plant operations and upgrading the quality of effluent are means to accomplish this objective.

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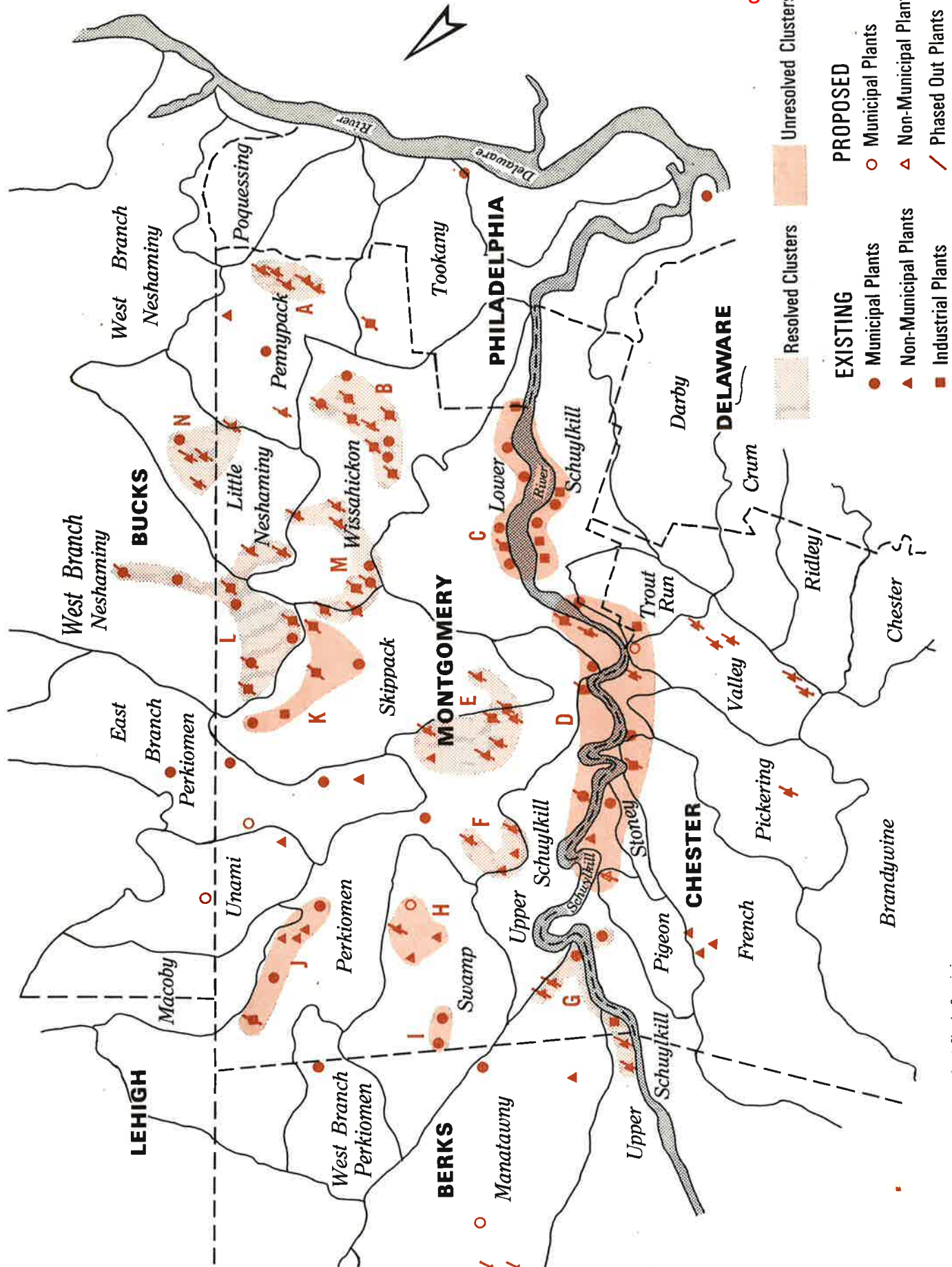


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This information is presented in figure x-1 for each of the municipal sewerage systems in the county.

8. It is estimated that construction costs of the items listed above would represent approximately \$51 million. This is broken down as follows:

a. Additional sewage treatment plant capacity - \$25.3 million.

b. Interceptors - \$22.3 million.

Act 537 Sewage Facilities Plan

Hatfield Township Montgomery County, Pennsylvania

November 2010
Approved November 2013

Prepared by:
GHD



1240 North Mountain Rd.
Harrisburg, PA 17112
Ph: 717-541-0622
Fax: 717-541-8004



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

RECEIVED
GHD Inc

NOV 12 2013

NOV 05 2013

Mr. Andrew Haines, Manager
Hatfield Township
1950 School Road
Hatfield, PA 19440

Re: Act 537 Plan Update
APS ID 642877, AUTH ID 862201
Hatfield Township
Montgomery County

Dear Mr. Haines:

We have completed our review of your municipality's updated official sewage facilities plan (Plan) titled *Hatfield Township Act 537 Sewage Facilities Plan*, as prepared by CET Engineering Services, dated November 2010 and revised October 16, 2013. The review was conducted in accordance with the provisions of the Pennsylvania Sewage Facilities Act.

Approval of the Plan is hereby granted. The Plan provides for the following:

1. Hatfield Township Municipal Authority (HTMA) will apply for a rerate of the wastewater treatment facility from an annual average flow of 6.98 MGD to 7.55 MGD.
2. Hatfield Township and HTMA will use 250 gpd/EDU for sewage facilities planning.
3. Hatfield Township will implement a township-wide on-lot sewage management ordinance, Ordinance 608, enacted September 29, 2010, and supplemented by Ordinance 627, enacted July 13, 2011.
4. Hatfield Township will negotiate and coordinate with Towamencin Township to enter into an agreement for the sanitary sewer service for the Derstine Road Sewer Area, portions of Basins 14 and 16 and the Derstine Run development.

DEP Review 3



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

May 16, 2012

Mr. Andrew Haines, Manager
Hatfield Township
1950 School Road
Hatfield, PA 19440

Re: Request for Flow Determination
Hatfield Township Act 537 Plan
Hatfield Township
Montgomery County

Dear Mr. Haines:

The Southeast Regional Office (SERO) is in receipt of the February 9, 2012, correspondence from Ms. Jodi Reese of CET Engineering Services, requesting that the Department of Environmental Protection (Department) allow the use of 216 GPD/EDU in reviewing Hatfield Township's (Township) pending Act 537 Plan Update. The Hatfield Township Municipal Authority (HTMA) would prefer to use a single per EDU flow figure for both Act 537 planning and tapping fee calculation purposes. The flow figure currently used for tapping fee calculation is 216 GPD/EDU, which was presented as the flow figure for new connections in the Act 537 plan update.

In its letters of January 25, 2011 and August 31, 2011, SERO asked that HTMA provide justification for its use of 216 GPD/EDU as a planning flow figure. SERO had expressed concerns that the flow per EDU in HTMA's sewer system is actually 326 GPD/EDU, based on data included with the Act 537 plan update, and further urged HTMA to use a flow figure of 262.6 GPD/EDU for new connections. Representatives of SERO met with Hatfield Township and HTMA representatives on November 30, 2011, to discuss the matter further, but no resolution was reached.

Ms. Reese's February 9, 2011, letter bases the use of 216 GPD/EDU for new connections on the use of improved modern materials for pipe construction, the requirement that all new construction be equipped with water conservation plumbing fixtures, and on the basis of metered flows from a force main serving 125 homes. Upon consideration of this information, we cannot agree to your request to use 216 GPD/EDU for planning purposes for the following reasons:

1. The flow data cited was obtained from a force main connection. Force mains and low pressure sewers tend to be less prone to infiltration and inflow (I/I) over time and thus may not provide an accurate long-term estimate of future flows.

Joel Kostelac

From: Tom Whittle
Sent: Thursday, August 15, 2013 2:56 PM
To: Joel Kostelac
Subject: FW: Hatfield Township's Pending 537 Plan
Attachments: 20130815102935095.pdf

CompleteRepository: 8910075
Description: 00592.660000-00 Hatfield Township Municipal Authority-537 Plan
JobNo: 10075
OperatingCentre: 89
RepoEmail: 8910075@ghd.com
RepoType: Job

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

From: Peter Dorney [<mailto:pdorneyhtma@verizon.net>]
Sent: Thursday, August 15, 2013 2:34 PM
To: 'Paul Mullin'; 'Steve Hann'
Cc: Jodi Reese; Tom Whittle
Subject: FW: Hatfield Township's Pending 537 Plan

Here is the first email today from DEP.

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

From: Yosmanovich, Stefanie [<mailto:syosmanovi@pa.gov>]
Sent: Thursday, August 15, 2013 11:30 AM
To: Peter Dorney (pdorneyhtma@verizon.net)
Cc: Abibro@hatfield-township.org
Subject: Hatfield Township's Pending 537 Plan

Pete, Aaron,

Beth Mahoney and I were contacting you both this morning regarding Hatfield Township's pending 537 Plan. The 2012 Chapter 94 (Municipal Wasteload Management) states that Hatfield is awaiting a response from the Department regarding the letter sent to us on February 9, 2012 from CET Engineering Services.

Attached is the Department's response to the February 9, 2012 letter.

Please inform the Department the status of a resubmission.

Thank you,

efanie

Stefanie Yosmanovich | Sewage Planning Specialist 2 Department of Environmental Protection | Clean Water Program
Southeast Regional Office

DEP Review 2



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE

August 31, 2011

Mr. Andrew Haines, Manager
Hatfield Township
1950 School Road
Hatfield, PA 19440

Re: Act 537 Plan Update
APS ID 642877, AUTH ID 862201
Hatfield Township
Montgomery County

Dear Mr. Haines:

On August 1, 2011, this office received a resubmission of your Proposed Official Sewage Facilities Plan Update for Hatfield Township, Montgomery County titled *Hatfield Township Act 537 Plan*, as prepared by CET Engineering Services dated November 2010 and revised July 2011. This plan is being submitted to the Department of Environmental Protection (Department) in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program.

We have now completed our technical review of the plan and have identified the following deficiencies that must be resolved before the Department can approve the plan:

1. Item 3 in the Department's January 25, 2011, letter recommended that HTMA reevaluate their use of 216 gpd/equivalent dwelling unit (EDU) and provide a justification for the use of 216 gpd/EDU. The justification provided is not adequate. The Department agrees that new sewer construction material is superior to the material used in 1960, which is when sewers were first constructed in Hatfield Township. However, the justification does not take into account for new flow going through older sewers in Hatfield Township. Flows for new sewer connections should take into account I/I from older portions of the sewer system. If Hatfield Township has a low percentage of old sewers in the Hatfield Township or has retrofitted the older sewers, please provide that information to the Department. Further, on pages 3-6, Hatfield Township has demonstrated that the 5-year average flow per EDU in Hatfield Township is 326 gpd which is significantly higher than the 216 gpd/EDU that Hatfield Township is currently using. The flow figure 216 gpd/EDU is lower than what the Department's Domestic Wastewater Facilities Manual recommends for new sewer systems which is 262.5 gpd/EDU. The Department strongly recommends that Hatfield Township reevaluate its use of 216 gpd/EDU.
2. In the resubmission received on August 1, 2011, the information on pages 4-5 has changed. The flow per proposed EDU has changed from 275 gpd/EDU to 216 gpd/EDU. However, the Chapter 94 projected connections flow did not change in Table IV-5. Please provide an explanation for the change.



CET ENGINEERING SERVICES

September 27, 2011

Stefanie Yosmanovich
Water Department
Southeast Regional Office
Pennsylvania Department of Environmental Protection
2 East Main Street
Norristown, PA 19401-4915

Re: Hatfield Township Act 537 Plan Revision
Response to Review Comments

Dear Ms. Yosmanovich,

In response to your August 31, 2011 letter and on behalf of Hatfield Township and the Hatfield Township Municipal Authority we offer the following responses.

1. Infiltration occurs when groundwater enters into the collection system through cracks in pipes, loose or poorly constructed fittings, or variety of other entry points. Some level of infiltration exists in collection systems regardless of sewage flow in these areas. Older sewers do not experience more infiltration simply when wastewater flows increase. In older areas of the system a greater volume of groundwater can enter as compared to tighter, newer areas of the system and this existing volume of infiltration is captured and accounted for in the existing plant flows used in the projections provided. Flow from new connections does not experience additional infiltration as it is conveyed to the WWTP. 326 gpd/EDU is the current average daily flow for existing connections, and includes accurate levels of infiltration and inflow from these connections. 216 gpd/EDU was selected to be consistent with the 2010 Chapter 94 submission as well as current tapping fee law. As demonstrated in our July 27, 2011 letter (attached for reference), this value is conservative and does include some allowance for I/I in new connections beyond what is metered now in the areas indicated in points 3 and 4. This I/I occurs at these connections and does not increase as the flow continues.

HTMA and Hatfield Township is utilizing 216 gpd/EDU to provide a realistic expectation of how much additional capacity may be necessary and to avoid placing an undue burden on the ratepayer. Understanding that there may be some uncertainty in the buildout flow projections, preliminary treatment limits and the Selected Alternative were based on a required flow of 7.55 MGD, above the 7.35 MGD required as indicated in Table IV-5.

Also, as can be seen by the two attached charts, plant flow is affected significantly more by precipitation than it is by new connections. Flow and precipitation generally follow the same trend, while flow does not respond in the same manner when new connections are added. This is due to inflow and infiltration in the older portions of the existing collection system. HTMA has performed significant inspection of old and new sewer lines within its system, and the overriding conclusion is that areas with newer construction materials such as PVC pipe as opposed to clay and concrete pipe, have in general only minor I/I. Furthermore, as HTMA's

Table 1. Plant Flow vs. Precipitation

Year	Annual Avg. Flow (MGD)	Annual Total Rainfall	Total Rainfall ¹	Flow:Rain Ratio	
1	2002	4.87	39.93	3.99	1.22
2	2003	6.73	57.47	5.75	1.17
3	2004	5.92	52.44	5.24	1.13
4	2005	5.86	43.40	4.34	1.35
5	2006	6.62	55.41	5.54	1.20
6	2007	5.80	47.82	4.78	1.21
7	2008	5.98	50.30	5.03	1.19
8	2009	6.35	52.31	5.23	1.21
9	2010	5.74	43.57	4.36	1.32
AVG	5.99	49.18	4.92	1.22	

(1) Total Rainfall was divided by 10 to normalize the data, as shown flow to rainfall ratios are consistent

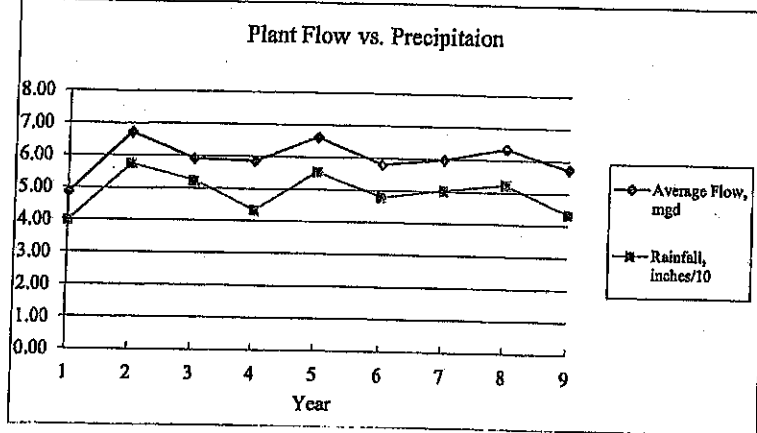
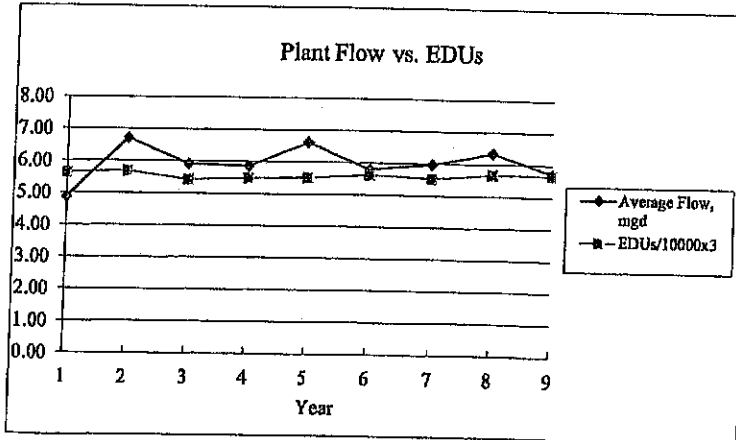


Table 2. Plant Flow vs. EDUs

Year	Annual Avg. Flow (MGD)	EDUs ¹	
1	2002	4.87	5.637
2	2003	6.73	5.688
3	2004	5.92	5.430
4	2005	5.86	5.490
5	2006	6.62	5.517
6	2007	5.80	5.625
7	2008	5.98	5.535
8	2009	6.35	5.676
9	2010	5.74	5.676
AVG	5.99	5.59	

(1) Similar to above, an arithmetic change was made to normalize the values; and to clearly illustrate trending



ORDINANCE NO. 627

**AN ORDINANCE ESTABLISHING REGULATIONS FOR THE INSPECTION,
PUMPING, MAINTENANCE, OPERATION, REHABILITATION AND
ADMINISTRATION OF ONLOT SEWAGE SYSTEMS AND PROVIDING PENALTIES
FOR VIOLATIONS THEREOF**

WHEREAS, Hatfield Township (the "Township") has an obligation to provide for and/or insure adequate sewage treatment and protection of the public health by preventing the discharge of untreated or inadequately treated sewage as mandated by municipal codes, the Clean Streams Law (35 P.S. §691.1001) and the Pennsylvania Sewage Facilities Act (35 P.S. §750.1 et seq.).

WHEREAS, the Township Act 537 Official Wastewater Facilities Plan has evaluated the need to provide adequate sewage facilities and has found the formation of an On-Lot Sewage Management Program to be an effective method of preventing and abating water pollution and hazards to the public health.

WHEREAS, the purpose of this Ordinance is to: (1) keep the Township compliant with the requirements of the Clean Streams Law (Act of 1937, P.L. 1987, No. 394) and the Pennsylvania Sewage Facilities Act (Act of 1966 P.L. 1535, No. 537, as amended, known as Act 537); (2) provide for inspection, pumping, maintenance, and rehabilitation of on-lot sewage disposal systems; (3) establish penalties and appeal procedures necessary for the proper administration of such a management program.

WHEREAS, the Commissioners of the Township after due consideration of the proposed ordinance at a duly advertised public meeting, has determined that the health, safety and general welfare of the citizens and residents of Hatfield Township will be served by the passing of the within ordinance.

NOW, THEREFORE, IT IS HEREBY ENACTED AND ORDAINED by the Board of Commissioners of Hatfield Township, Montgomery County, Pennsylvania, as follows:

§I. Amendment of the Code.

Chapter 224, Sewers and Sewage Disposal, Article IV, On-Lot Sewage Management Program is hereby amended as follows:

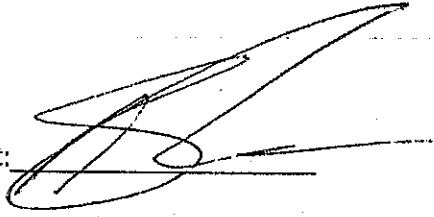
i. Section 224-38, Subsection A is hereby amended to read as follows:

A. Upon adoption of this Ordinance, The Township shall provide written notification to all owners of property served by an on-lot sewage system that their system must be pumped within 90 days of receipt of notification or provide notification to the Township that the on-lot system had been pumped within the previous three (3) years. Thereafter, the Township shall follow a schedule whereby all of the owners of properties within the Township served by an on-lot sewage system are notified once every three (3) years. The notified property owners must have the sewage system pumped within the time specified in the Township's letter, unless the owner(s) can provide the Township with a pumping certification indicating that the on-lot sewage system was pumped within one (1) year prior to the date of the Township's notice letter.

§VI. Enactment.


Under the authority conferred by the First Class Township Code and other relevant statutory law, the Commissioners of the Township of Hatfield in the County of Montgomery, Commonwealth of Pennsylvania do hereby enact and ordain this ordinance to the Code of Ordinances for the Township of Hatfield this 13 day of July 2011.

Attest:

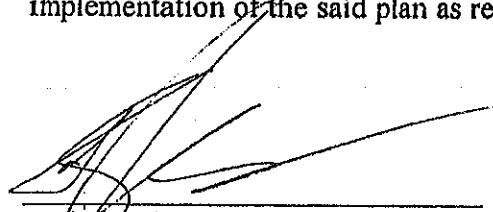


HATFIELD TOWNSHIP

By:



NOW, THEREFORE, BE IT RESOLVED that the Board of Commissioners of Hatfield Township hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the Township, the above referenced Act 537 Plan Update. The Township hereby assures the Department of the complete and timely implementation of the said plan as required by law.



Andrew S. Haines, Manager

HATFIELD TOWNSHIP
BOARD OF COMMISSIONERS

BY: 

Thomas C. Zipfel, President



C E T E N G I N E E R I N G S E R V I C E S

A Subsidiary of



CLIENTS | PEOPLE | PERFORMANCE

February 9, 2012

Jenifer Fields, P.E.
Clean Water Department, Program Manager
Southeast Regional Office
Pennsylvania Department of Environmental Protection
2 East Main Street
Norristown, PA 19401-4915

Re: Hatfield Township Act 537 Plan Revision

Dear Ms. Fields:

The Hatfield Township Municipal Authority (HTMA) met and discussed the impact of having two different flow rates per EDU: one for tapping fee calculations as required by the Municipal Authorities Act (Act 57) and one for Act 537 Planning as discussed during the November 30, 2011 meeting with SERO.

Hatfield Township and the HTMA would like the SERO to forward this letter to DEP Central Office for their review of using **216 gpd/EDU for the Annual Average Flow Rate** from new connections for Act 537 planning purposes. This flow rate is considered to be a conservative value. The justification of that flow rate is provided below.

1. Sewers were first constructed in Hatfield beginning in 1960. During that time, pipe material, pipe joints, and installation practices were significantly inferior as compared to today. HTMA has "STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEM EXTENSIONS" that must be followed for new construction which include use of superior pipe material, inspection during construction, and testing of all sewer mains and laterals (air testing) and manholes (vacuum testing). These specifications have been in place since the year 2000.
2. In 2004, Pennsylvania adopted the Uniform Construction Code (UCC) which requires water conservation plumbing fixtures in new home construction.
3. A force main sewer to HTMA from Chalfont – New Britton is metered. The sewered area initially had 124 residential EDUs with construction of the homes completed in 2009 using PVC sewers. All flow is pumped and metered into the HTMA sewer system.

The total flow for 2010 was 7,900,730. With 124 EDUs, the flow per EDU is **175 gpd/EDU**.

In 2011, there were 125 residential EDUs with a total flow of 7,142,986. The weekly average flows ranged from 136 to 182 gpd/EDU and the annual average flow rate was **158 gpd/EDU**.



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

May 16, 2012

Mr. Andrew Haines, Manager
Hatfield Township
1950 School Road
Hatfield, PA 19440

Re: Request for Flow Determination
Hatfield Township Act 537 Plan
Hatfield Township
Montgomery County

Dear Mr. Haines:

The Southeast Regional Office (SERO) is in receipt of the February 9, 2012, correspondence from Ms. Jodi Reese of CET Engineering Services, requesting that the Department of Environmental Protection (Department) allow the use of 216 GPD/EDU in reviewing Hatfield Township's (Township) pending Act 537 Plan Update. The Hatfield Township Municipal Authority (HTMA) would prefer to use a single per EDU flow figure for both Act 537 planning and tapping fee calculation purposes. The flow figure currently used for tapping fee calculation is 216 GPD/EDU, which was presented as the flow figure for new connections in the Act 537 plan update.

In its letters of January 25, 2011 and August 31, 2011, SERO asked that HTMA provide justification for its use of 216 GPD/EDU as a planning flow figure. SERO had expressed concerns that the flow per EDU in HTMA's sewer system is actually 326 GPD/EDU, based on data included with the Act 537 plan update, and further urged HTMA to use a flow figure of 262.6 GPD/EDU for new connections. Representatives of SERO met with Hatfield Township and HTMA representatives on November 30, 2011, to discuss the matter further, but no resolution was reached.

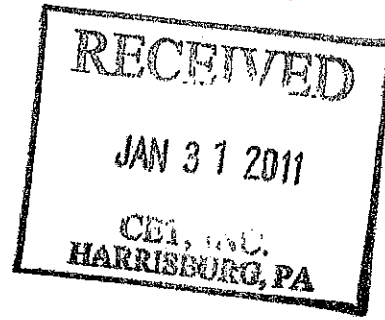
Ms. Reese's February 9, 2011, letter bases the use of 216 GPD/EDU for new connections on the use of improved modern materials for pipe construction, the requirement that all new construction be equipped with water conservation plumbing fixtures, and on the basis of metered flows from a force main serving 125 homes. Upon consideration of this information, we cannot agree to your request to use 216 GPD/EDU for planning purposes for the following reasons:

1. The flow data cited was obtained from a force main connection. Force mains and low pressure sewers tend to be less prone to infiltration and inflow (I/I) over time and thus may not provide an accurate long-term estimate of future flows.

DEP Review 1



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE



January 25, 2011

Mr. Andrew Haines, Manager
Hatfield Township
1950 School Road
Hatfield, PA 19440

Re: Act 537 Plan Update
APS ID 642877, AUTH ID 862201
Hatfield Township
Montgomery County

Dear Mr. Haines:

On November 24, 2011, this office received your Proposed Official Sewage Facilities Plan Update (Plan) for Hatfield Township (Township), Montgomery County, titled *Hatfield Township Act 537 Plan*, as prepared by CET Engineering Services, dated November 2010. This Plan is being submitted to this Department of Environmental Protection (Department) in accordance with the provisions set forth by Section 5 of the Pennsylvania Sewage Facilities Act and Chapter 71, the Administration of Sewage Facilities Program.

A preliminary review has indicated that the plan update is incomplete for the following reasons:

1. Please provide a site plan showing the service areas in the adjacent municipalities that are served by the Hatfield Township Municipal Authority (HTMA).
2. Please clarify the following for Table III-1 on page 3-3:
 - a. Please identify what the acronyms PHF and AAF stand for.
 - b. Note 3 refers to a PHF of 4; please identify what this means and how this number was derived.
 - c. The capacities listed for the wastewater treatment facility are the maximum month flows. We recommend that the Table also contain the average annual permitted capacity and that the average annual projected and average annual remaining capacities be included in the Table.

Mr. Andrew Haines, Manager

- 3 -

January 25, 2011

9. The Department notes that the wastewater treatment facility discharges to the West Branch of the Neshaminy Creek. The Neshaminy Creek is an impaired waterway and may require certain treatment requirements. If HTMA has not done so already, please contact Mr. Sohan Garg, NPDES Permits Chief, at sgarg@state.pa.us to request Preliminary Treatment Requirements for the expansion of the treatment facility.

Please include a copy of your preliminary treatment limits with your response and provide documentation that the wastewater treatment facility will be able to meet these limits.

10. The Department has the following concerns regarding the on-lot operation and maintenance ordinance included in Exhibit V-5:
- a. Section 224-38, Maintenance, states that properties with an on-lot disposal system will be notified once every 4 years to get their system pumped. Please refer to the enclosed fact sheet. The Department recommends that septic tanks be pumped once every 3 years or whenever an inspection reveals solids or scum in excess of 1/3 of the liquid depth of the tank, or more frequently if recommended by the manufacturer of any of the component parts of the system.
 - b. For aerobic systems, the Department recommends that the ordinance include language similar to "The Owner shall provide an adequate supply of electrical power with the proper phase, frequency, and voltage as recommended by the equipment manufacturers of the various components of the system."
 - c. Please identify how the pumping schedule will be established for the existing on-lot disposal systems within the Township.
11. The Department recommends that the implementation schedule be revised as follows:
- a. We discourage the use of actual dates; rather, the schedule should start with the Department approval of the Act 537 Plan as "Time Zero." Any schedule of items after that should be referenced by the number of months after "Time Zero."
 - b. The implementation schedule does not include the submission of permits to the Department that will be required for the upgrades.
 - c. The schedule should also include an estimated completion date.
 - d. The Department recommends that a new Resolution of Adoption be passed since the original one contains the previous implementation schedule.



CET ENGINEERING SERVICES

July 27, 2011

Stefanie Yosmanovich
Water Department
Southeast Regional Office
Pennsylvania Department of Environmental Protection
2 East Main Street
Norristown, PA 19401-4915

Re: Hatfield Township Act 537 Plan Revision
Response to Preliminary Review Comments

Dear Ms. Yosmanovich,

In response to your January 25, 2011 letter and on behalf of Hatfield Township and the Hatfield Township Municipal Authority we offer the following responses. As discussed, new copies of all the revised sections are attached with page references for revisions noted below.

Comment 1. Please provide a site plan showing the service areas in the adjacent municipalities that are served by the Hatfield Township Municipal Authority.

Response 1. Plate 1 has been revised and is attached.

Comment 2. Please clarify the following for Table III-1 on page 3-3:

a. Please identify what the acronyms PHF and AAF stand for.

Response 2a. (See Page 3-3): PHF stands for Peak Hourly Flow; AAF stands for Annual Average Flow

b. Note 3 refers to a PHF of 4; please identify what this means and how this number was derived.
Response 2b. (See Page 3-3): This note describes how the Peak Hourly Flow (PHF) of tributary EDUs was derived. A peaking factor of 4 (PHF to AAF) was selected, and thus the AAF contribution of 216 gpd/EDU was multiplied by 4 for a PHF contribution of 864 gpd / EDU. A peaking factor of 4 is a widely accepted factor when estimating peak flows from average flows.

c. The capacities listed for the wastewater treatment facility area the maximum month flows. We recommend that the Table also contain the average annual permitted capacity and that the average annual projected and average annual remaining capacities be included in the Table.

Response 2c. (See Page 3-6): Pumping station and interceptor design capacities are based on peak hourly flows, not average annual flows. In regard to the WWTP a comparison of annual average flow and projected annual average flow is shown on Table III-3 on page 3-6. An additional column has been added showing the remaining capacity.

Comment 3. Page 3-6, demonstrates that the 5-year average flow per EDU in the Township is 326 gpd. However, HTMA is using 216 gpd/EDU and no justification has been provided for the

Response 5a. The selected alternative does not involve a physical upgrade to the treatment plant and as such, no cost analysis was accomplished.

b. The cost analysis of the sewage management program does not appear to include all of the lots in the Township that have an on-lot sewage disposal system. The calculation only appears to include the 30 lots in the Derstine Road Study Area.

Response 5b (See Page 6-4). This analysis has been revised to reflect all known systems.

c. Chapter 71 requires the Township to identify both a primary and contingency funding source to implement its plan. Please identify the contingency funding source.

Response 5c. Should existing revenues or reserves not be sufficient the Township or HTMA will secure funding through a bond sale.

Comment 6. Please provide copies of the on-lot sewage needs surveys that were returned to HTMA and the door to door surveys that were completed.

Response 6. Copies are attached for your use.

Comment 7. The Sewage Needs Table in Exhibit III-3 has a column heading of <72. Please identify what this heading describes.

Response 7. This heading refers to systems that were installed prior to 1972.

Comment 8. Exhibit IV-8 includes a letter from Hilltown Township noting concerns that they have about the Plan Revisions. Please provide a copy of Hatfield Township's response to Hilltown Township.

Response 8. Upon receipt of the response letter from Hilltown Township, HTMA made several attempts to address their concerns. Specifically, HTMA offered Hilltown Township service, but the terms of a service agreement could not be agreed upon. Most recently, in conjunction with the 2010 Chapter 94 prep, HTMA did receive correspondence regard Hilltown connections of the next five years. This correspondence is included.

Comment 9. The Department notes that the wastewater treatment facility discharges to the West Branch of the Neshaminy Creek. The Neshaminy Creek is an impaired waterway and may require certain treatment requirements. If HTMA has not done so already, please contact Mr. Sohan Garg, NPDES Permits Chief, at sgarg@state.pa.us to request Preliminary Treatment Requirements for the expansion of the treatment facility.

Please include a copy of your preliminary treatment limits with your response and provide documentation that the wastewater treatment facility will be able to meet these limits.

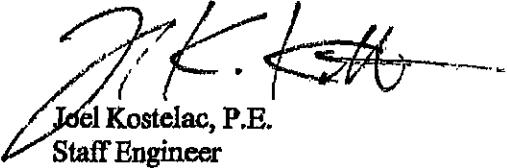
Response 9. HTMA can meet the proposed upper limits at the increased flow and is currently treating to well below these parameters. Since the final TN and TP lower limits listed are based on the Departments assessment only, as to future limits that may be placed in an EPA TMDL, or statewide nutrient criteria, they are not addressed. When these limits are finalized, HTMA will conduct the necessary evaluation to determine if and what process upgrades are required. There is sufficient space on the site to accommodate future upgrades. Regarding toxics, these limits were not evaluated by the Department. Evaluation via PennTOX was requested and the Department stated this was not accomplished at the PTR phase and would occur during the permitting phase. As such, any necessary upgrades would be evaluated at the time final limits are established. Again, there is sufficient space on site to accommodate future process upgrades.

Comment 10. The Department has the following concerns regarding the on-lot operation and maintenance ordinance included in Exhibit V-5:

CET ENGINEERING SERVICES

Thanks very much, please don't hesitate to contact us should you have any concerns.

Sincerely,



Joel Kostelac, P.E.
Staff Engineer

Enclosure

Xc: Andrew Haines, Hatfield Township

~~Peter Dorney, Hatfield Township Municipal Authority~~

Mr. Peter Dorney, Executive Director
Subject: Chapter 94 Annual Report
January 13, 2011
Page 2

5. Section (a)(5) - A calibration report shall be included for all flow measuring, indicating and recording equipment within the collection/conveyance system. Calibration should occur annually.

Hatfield Township Municipal Authority owns and maintains the sanitary sewer system, and should be responsible for the calibration report.

6. Section (a)(6) - A discussion of the condition of the sewer system, including portions of the sewer system where conveyance capacity is being exceeded or is projected to be exceeded in the next five years.

Hatfield Township Municipal Authority owns and maintains the sewer system. Hilltown Township performs no inspections, and is unaware of the condition of the sanitary sewer system.

7. Section (a)(6) - Existing capacity should be documented with actual metering of present maximum flows. If not already existing, the permittee should consider best placement of flow meters to document the capacity of major interceptors (greater than 10" in diameter) and/or where lines cross municipal borders. A discussion of present maximum flows should be documented with hourly or instantaneous peak readings taken during the major storm events (greater than 1" of rain). Autodialers may be installed to alert of high flow conditions. The Chapter 94 Report should compare the peak instantaneous flow for each major storm event to the design hydraulic conveyance capacity of the sewer in order to determine whether sufficient capacity is available. The ratio of peak (hourly or instantaneous) to annual average flows should be determined to assess the actual peaking factor for this system.

Hatfield Township Municipal Authority owns and maintains sanitary sewer system. Hilltown Township has no information regarding existing capacity or metering of flow.

8. Section (a)(6) - A discussion of portions of the system where rehabilitation or cleaning is needed or underway to maintain the integrity of the system and prevent or eliminate bypassing, combined sewer overflow, sanitary sewer overflow, excess infiltration, and other system problems.

Hatfield Township Municipal Authority owns and maintains sanitary sewer system. Hilltown Township has no information regarding necessary rehabilitation, cleaning, bypass overflow or infiltration.

If you have any questions, please do not hesitate to contact me.

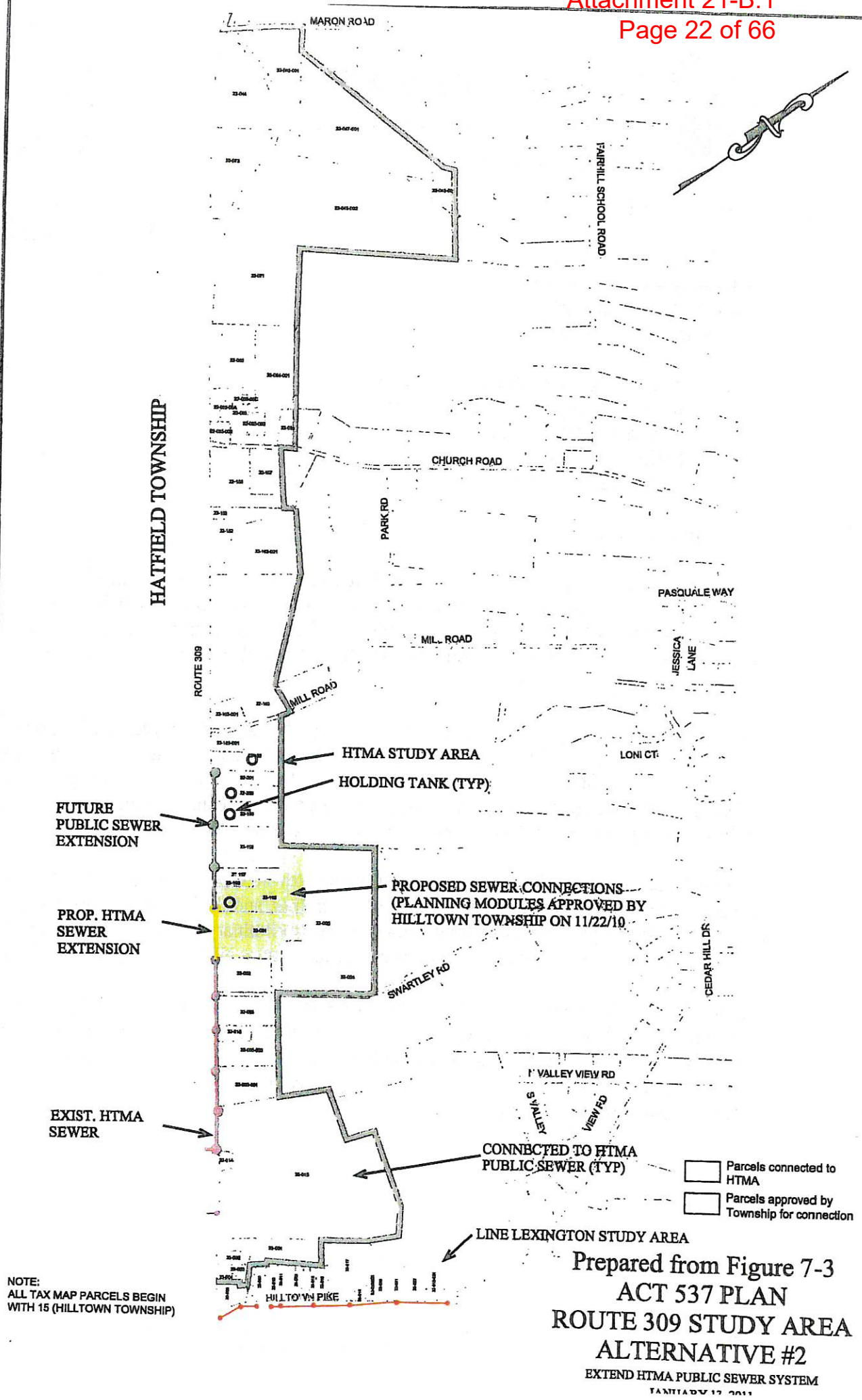
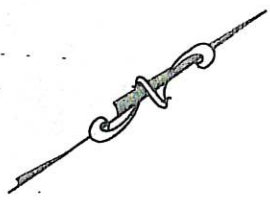
Very truly yours,



C. Robert Wynn, P.E.
Township Engineer

W/ajp

cc: Nancy Adams, Environmental Scientist, CET Engineering Services
Christopher S. Christman, Township Manager (via email)



Prepared from Figure 7-3
ACT 537 PLAN
ROUTE 309 STUDY AREA
ALTERNATIVE #2
EXTEND HTMA PUBLIC SEWER SYSTEM
JANUARY 12, 2011

Mr. Joel Kostelac, P.E.

- 2 -

West Branch Neshaminy Creek is listed as impaired due to excessive nutrients. The Department is expecting nutrient criteria in the near future, and the Environmental Protection Agency (EPA) is in the process of developing a Total Maximum Daily Load (TMDL) for the Neshaminy Creek basin. We anticipate that the final TMDL will require significant reductions for phosphorus and possibly nitrogen. In the interim, the permitted discharge load of phosphorus will be capped based on the existing discharge load.

If you have any questions, please call Mr. Orest Kolodij at 484-250-5191.

Sincerely,



Sohan L. Garg, P.E.
Environmental Engineer Manager
NPDES Permits Section
Water Management

Enclosures

cc: Hatfield Township
Mr. Peter Dorney, HTMA
Mr. Bill Gelles
Mr. Jenifer Fields
Planning Section
File

**HATFIELD TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA
RESOLUTION #11-22**

**A RESOLUTION OF THE COMMISSIONERS OF
HATFIELD TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA,
ADOPTING THE TOWNSHIP'S 537 PLAN.**

RECITALS

A. 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 ("DEP") adopted pursuant thereto and being Chapter 71 of Title 25 of the Pennsylvania Code, requires Hatfield Township ("Township") 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 Township.

B. Hatfield Township Municipal Authority ("Authority"), the entity responsible for the disposal and treatment of sewage wastes within the Township, through its engineer, CET Engineering Services, has prepared an "Act 537 Plan Update" which provides for the sewage facilities in a portion of Hatfield Township.

C. Based upon studies and available alternatives, the alternative of choice to be implemented is the re-rate of the existing Advanced Wastewater Treatment Facility to meet existing and future flow requirements and the implementation of a Sewage Management Program to provide oversight of the existing on-lot sewage disposal systems within the Township. The key implementation activities and dates are detailed in Section VIII-C of the 537 Plan.

D. The Township finds that the Act 537 Plan Update described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

I, Andrew S. Haines, Secretary of Hatfield Township, hereby certify that the foregoing is a true copy of Township Resolution #11-22 adopted 13th July 2011.

ii. **Section 224-38, Subsection B is hereby amended to read as follows:**

B. Commencing from the date of the pumping as prescribed in section 224-38(A), removal of septage or other solids from an on-lot sewage system shall be performed at least once every three (3) years thereafter or whenever an inspection reveals solids or scum in excess of 1/3 liquid depth of the tank, or more frequently if recommended by the manufacturer of any of the component parts of the system. The property owner shall furnish a copy of the pumping certification to the Township within thirty (30) days of the date of the pumping.

iii. **Section 224-38, Subsection C is hereby amended to read as follows:**

C. The Township may allow an on-lot sewage system to be pumped out at less frequent intervals when the owner can demonstrate that the sewage system and/or uses thereof are unique and do not require pumping every three (3) years. In no case shall such period extend beyond six (6) years. The Township shall solely determine if an extension of time will be granted and the length of the extension.

iv. **Section 224-38, Subsection G is hereby amended to read as follows:**

G. Any person owning a structure served by a sewage system containing an aerobic treatment tank shall follow the operation and maintenance recommendations of the equipment manufacturer. In no case may the service or pumping interval for aerobic treatment tanks exceed that required for septic tanks. The Owner shall provide an adequate supply of electrical power with the proper phase, frequency, and voltage as recommended by the equipment manufacturers of the various components of the system.

§II. **Repealer.**

All ordinances or parts of ordinances which are inconsistent herewith are hereby repealed, it being understood and intended that all ordinances and the Code of Ordinances for the Township of Hatfield such as are not otherwise specifically in conflict or inconsistent with this ordinance, shall remain in full force and effect, the same being reaffirmed hereby.

§III. **Severability.**

If any section, subsection, sentence, clause, phrase, or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such provisions shall be separate, distinct and independent, and such holding shall not effect the validity of the remaining portions of this Ordinance.

§IV. **Failure to Enforce not a Waiver.**

The failure of the Township to enforce any provision of this Ordinance shall not constitute a waiver by the Township of its rights of future enforcement hereunder.

§V. **Effective Date.**

This ordinance shall take effect within five (5) days of passage.

Base
Township Line
Road
Stream
Water Body

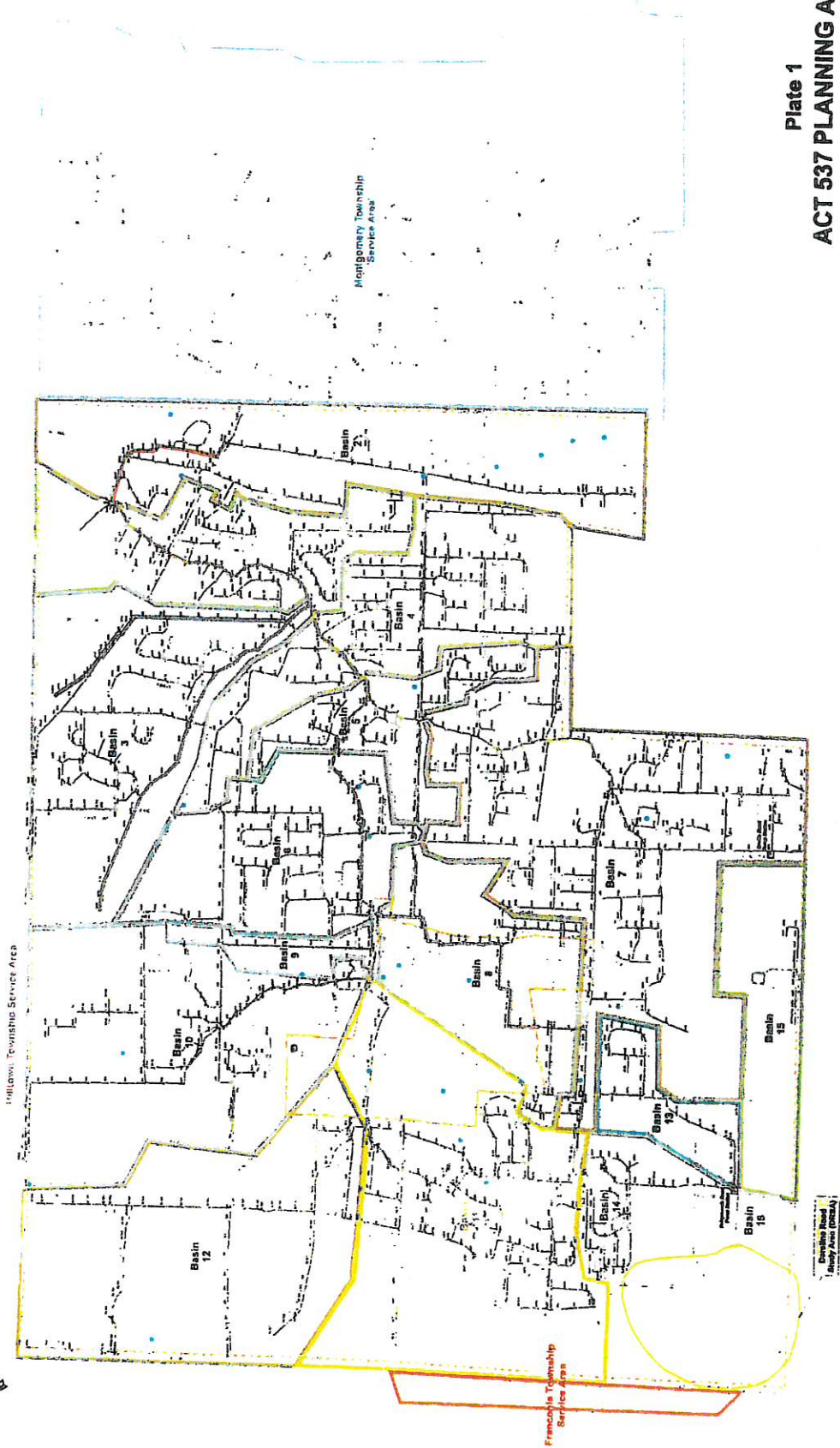


Plate 1

ACT 537 PLANNING AREA

Hatfield Township Municipal Authority
Hatfield Township, Montgomery County, Pennsylvania

CET ENGINEERING SERVICES
Harrisburg, Pennsylvania

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Conformed Plan

PLAN SUMMARY

HATFIELD TOWNSHIP ACT 537 OFFICIAL PLAN – UPDATE REVISION

Hatfield Township, Montgomery County, a first-class Township incorporated in 1742, has evolved from a rural farming community into a suburban community with a mix of residential, commercial and industrial users including a well-known food processing operation. The Township, which surrounds the 0.6 sq.mi. Borough of Hatfield, is approximately 30 miles north of Philadelphia. The Township lies primarily in the Neshaminy Creek watershed and covers an area of approximately 10 square miles.

As required by the Pennsylvania Department of Environmental Protection, the Township is updating its Act 537 Sewage Facilities Plan in accordance with the Pennsylvania Sewage Facilities Act and Chapter 71 of the DEP regulations.¹

As required by Chapter 71.21, the Township determined the planning elements necessary to meet the specific needs of the Township and submitted a Plan of Study and Task Activity Report to DEP, which was approved in August 2008. A copy of these documents can be found in Exhibit I-2.

The purpose of this Update Revision is to evaluate the adequacy of existing sewage facilities, to identify on-lot sewage disposal needs areas, and to identify and evaluate alternatives, as necessary, for the continued use of existing facilities. The Plan has been conducted and prepared on behalf of the Township by CET Engineering Services (CET).

As described in DEP's *Sewage Facilities Planning – A Guide for Preparing Act 537 Update Revisions*, February 1998, the purposes of this Plan are:

- To protect the health, safety, and welfare of the citizens in the Township
- To prevent future sewage disposal problems
- To provide protection for both the groundwater and surface waters of the Commonwealth.

The objectives of this Act 537 Plan Update include:

- Conduct a needs analysis for wastewater collection and treatment for individual parcels and areas of the Township that are not served by public sewerage. This analysis then focused in greater detail on the area of the Township with the greatest concentration of these systems. This area lies in the southwestern portion of the Township and is adjacent to Derstine Road.

¹ Pennsylvania Sewage Facilities Act, P.L. 1535, No. 537 effective January 24, 1968 as amended and supplemented, and codified in Chapter 71 of Title 25 adopted August 2, 1971, as amended.
<http://www.pacode.com/secure/data/025/chapter71/chap71toc.html>

The WWTP has a permitted design capacity of 6.43 MGD annual average flow and 8.37 MGD maximum monthly flow and was constructed in 1986 - 1987. Additionally, it is permitted for 22,300 lb/day of organic loading. In March of 2008 the HTMA entered into a Consent Order and Agreement adjusting the design flow to 6.98 MGD. A schematic diagram of the plant as well as an aerial view and site plate is included in Section III.

The HTMA wastewater treatment plant processes include pretreatment facilities, mechanical screening, grit and grease removal, primary clarification, conventional activated sludge using countercurrent aeration units, final clarification, and ultraviolet disinfection prior to discharge to the west branch of Neshaminy Creek. Waste sludge is dewatered with centrifuges and incinerated with on-site facilities.

In addition to wastewater flows generated in the planning area, HTMA also receives domestic holding tank and septic tank waste with a minimal amount of industrial process waste via tanker truck for treatment at the HTMA pretreatment facilities. Effluent from the pretreatment facility blends with the influent prior to the primary clarifiers and the HTMA secondary treatment process. The acceptance of this waste is at the discretion of HTMA.

Based on projected growth and future development planning conducted in this plan revision, a future flow requirement was established. It is projected that a future average daily flow requirement of 7.55 MGD could result. This would require an additional nearly 600,000 gpd in design capacity at the WWTP. Additionally, a projected hydraulic overload on a maximum monthly basis could occur beyond 2013. These projections are discussed in Section IV and alternatives to address this issue are presented in this summary and in detail Section V.

ON-LOT SEWAGE DISPOSAL SYSTEMS (OLDS)

Areas not served by the HTMA owned and operated collection and conveyance system or non-municipal DEP permitted sewage systems are served by individual on-lot systems permitted by Montgomery County Health Department and their Sewage Enforcement Officer. One specific area, the Derstine Road Study Area (DRSA), was identified for a detailed evaluation. This evaluation consisted of mail surveys, door to door surveys, system checks and well water sampling. The results of this are presented in Section III. While none of the systems sampled had contaminants higher than DEP accepted levels, some nitrate contamination was present.

EPA's safe drinking water criteria for nitrate in public water supplies is 10 milligrams per liter of sample (10 mg/l). Sources of nitrate-nitrogen include natural decay of organic matter, precipitation, mineral weathering, manure application, chemical fertilizers, and malfunctioning sewage disposal systems. None of the well samples exceeded these criteria.

B. ALTERNATIVES IDENTIFIED FOR FURTHER ANALYSIS

CONVENTIONAL WASTEWATER TREATMENT AND COLLECTION ALTERNATIVES

- | | |
|----------------|----------------------|
| 7. Operation | Owner |
| 8. Maintenance | Owner or Association |

Currently, the Montgomery County Health Department (MCHD) is tasked with Sewage Enforcement Officer duties. The Township will work with the MCHD to maintain this relationship and assist in the further development of this program. Through an Onlot Management Ordinance, passed by the Township, the operation and maintenance of existing and future systems, maintenance and inspection requirements and reminders, and a systems inventory will be improved. The implementation of a management program will provide a mechanism whereby systems are inspected and evaluated for needed repairs or upgrades. The requirement to pump tanks and inspect systems will extend the life of these systems thereby protecting the drinking water source. The inventory of this information will then identify areas of failing or marginal systems needing further analysis through a Sewage Facilities Special Study.

An Onlot Management Program Ordinance would include the following required provisions:

- The removal of septage to avoid the carry-over of solids into the absorption area. Septic tanks would be required to be pumped within four years of DEP's approval of this Plan and at least once every four years thereafter, or whenever a tank inspection reveals that the tank is filled in excess of 1/3 the liquid depth of the tank with scum or solids.
- Documentation of septage pumping and hauling that indicates proper final disposal.
- Maintenance of surface contouring to divert stormwater away from the system.
- Requirements for water conservation devices if systems are found to be malfunctioning due to hydraulic overload.
- Maintenance of electrical, mechanical, and other system components including collection/conveyance piping, pressure lines and pump pits, alarm and flow recorders, pumps, disinfection equipment and related safety equipment.

Through the use of educational flyers and handouts, the Township can provide public education to address siting, design, construction, operation, and maintenance of onlot systems.

Educational topics would also include well construction and condition, the use of water softeners and garbage disposals, prohibited substances, pump out scheduling, and troubleshooting guidance. Examples of some of these flyers can be found in Section V.

- C. No-action alternative for the continued use of On-lot Sewage Disposal Systems. (Section V – Alternative 4) No immediate public health or groundwater contamination concerns exist, therefore it is possible for the Township to continue to rely on the MCHD to address on-lot system repairs, permitting, and enforcement (when problems arise).

D. STUDY ADOPTION AND COMMENT PERIOD

The Township adopted the Act 537 Plan Revision in October 2010. A copy of the executed resolution is included in Appendix C.

A copy of the draft Plan Revision was submitted to the Montgomery County Planning Commission for their review and approval as well as contributing, neighboring municipalities. A copy of the submission letter, the Planning Commission's May 2010 review letter, and CET's response letter, are included in Appendix D. In addition, a public notice indicating the Township's intention to adopt the Plan Revision and announcing the required 30 day public comment period was published in The Intelligencer News on March 23, 2010. The proof of public notice is included in Appendix E. No public comments were received, as indicated in the Township's May 27, 2010 letter included in Appendix F.

E. IMPLEMENTATION

It is anticipated that the selected alternatives of this Plan revision would be implemented upon approval of the revision by PA DEP.

Hatfield Township
Act 537 Plan

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APPENDICES

Appendix A	Resolution of Adoption
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Appendix D	Public Comments and Responses

I. PREVIOUS WASTEWATER PLANNING

A. PLANS AND STATUS OF IMPLEMENTATION

The Pennsylvania Sewage Facilities Act (P.L. 1535 No. 537 of January 24, 1966, effective January 1, 1968, as amended, and enforced upon promulgation of rules and regulations codified under PA Code Chapters 71, 72 and 73) requires that all Commonwealth municipalities develop and implement comprehensive official plans that provide adequate sewage systems for the resolution of existing sewage disposal problems, and for the future sewage disposal needs of new land development and the municipality. Act 537 planning has been a municipal requirement since 1971.

1972 – MONTGOMERY COUNTY – OFFICIAL SEWAGE FACILITIES PLAN

The Montgomery County Planning Commission developed an Official Act 537 Sewage Facilities Plan in 1972, and later updated this in 1978. This plan emphasized large regional treatment plants and expansive interceptor sewers. The Township of Hatfield adopted the Montgomery County prepared Act 537 Plan and constructed an Advanced Wastewater Treatment Facility in 1970 – 1972, as well as a major relief interceptor sewer in 1982 - 1983.

1984 – HATFIELD TOWNSHIP – OFFICIAL PLAN REVISION

The Township submitted an Act 537 Plan Revision in July 1984, which was approved in January 1985. A copy of this approval is located in Exhibit I-1. This Plan Revision established the Hatfield Township Municipal Authority (HTMA) service area. This service area consists of all of Hatfield Township, Hatfield Borough, Hilltown Township in the Line Lexington – Rte. 309 Area, Franconia Township adjacent to Township Line Rd and Rte 309 South, and portions of Montgomery Township.

The primary recommendation of the Plan Revision was to construct a new \$7.2 million, 6.43 million gallon per day (MGD) counter current, low-load aeration treatment facility. Capacity in the treatment facility was divided between Hatfield Township (3.79 MGD), Hatfield Borough (0.50 MGD) and Montgomery Township (2.14 MGD). Other contributing municipalities did not enter into capacity agreements. This facility was constructed in 1986 - 1987.

The 1984 Official Plan Revision also identified the “Fairgrounds area between Cowpath and Elroy Rd.” as the single remaining unsewered area of the Township. At the time of the plan preparation, the engineering design and negotiations with developers to provide sewer service to this area was underway. Since that time sewer service has been provided.

The Township kicked off the current plan revision in mid-2008 with the submission of a Plan of Study and Task Activity Report. These items were approved in August 2008, and a copy of the documents and approval is located in Exhibit I-2.

Planning Module Component 1 is used for exceptions to planning requirements, if the following conditions exist:

- Subdivision contains less than 10 lots (created after May 15, 1972).
- Soils or site conditions are suitable for onlot sewage systems.
- Proposed sewage system is not underlain by carbonate geology.
- Proposed sewage system is not within one-quarter mile of water supplies that exceed 5 ppm (mg/L) nitrate-nitrogen.
- Proposed development is outside a high quality or exceptional value watershed.
- Subdivision lots and remaining tracts are each larger than 1 acre.

Planning Module Component 2 is used for individual and community onlot systems:

- Non-accepted systems and residential spray irrigation systems
- Proposed retaining tanks – holding tanks, privies, chemical, incinerating, recycling or composting toilets
- Proposed community onlot sewage disposal systems permitted by the County
- Proposing individual or community large volume onlot sewage disposal systems permitted by DEP

Planning Module Component 3 is used for sewage collection and treatment facilities when the following is proposed:

- A subdivision served by sewage collection, conveyance or treatment facilities
- A tap-in to public sewers from a lot with 2 EDUs or more
- Construction or modification of wastewater collection, conveyance or treatment facilities that require a DEP permit

II. PHYSICAL IMPACTS ON WATER RESOURCES AND WASTEWATER SYSTEMS

This section discusses the effects and constraints on water supply and wastewater disposal by land use activities and the natural environment – planning, surface water, groundwater, soils, geology, topography, potable water supplies, wetlands, and floodplains.

A. PLANNING AREAS, MUNICIPAL BOUNDARIES, AND SERVICE AREA BOUNDARIES.

Hatfield Township's *Planning Area* consists of all the land within the municipal boundaries of the Township, and the areas within the adjacent municipalities served by Hatfield Township Municipal Authority sewer facilities. This service area consists of all of Hatfield Township, the Borough of Hatfield, portions of Montgomery Township to the east, Hilltown Township to the north and Franconia Township to the west.

Hatfield Township, Montgomery County, a first-class Township incorporated in 1742, has evolved from a rural farming community into a suburban community with a mix of residential, commercial and industrial users including a well-known food processing operation. The Township, which surrounds the 0.6 sq.mi. Borough of Hatfield, is approximately 30 miles north of Philadelphia. The Township lies primarily in the Neshaminy Creek watershed and covers an area of approximately 10 square miles.

Primary vehicular access to the Township is via PA Route 309 in the northern portion and the Northeast Extension of the PA Turnpike to the south. These prominent traffic routes provide access to population centers in the Route 309 corridor as well as the City of Philadelphia. Additionally, the North Penn Railroad passes through the center of the township in a northwestern direction.

According to the Delaware Valley Regional Planning Commission, the projected 2010 population of the Township is 18,174. With the addition of contributing municipalities to the sewer service area, the HTMA system served 19,214 EDU's in 2009¹.

Most of the planning area is served by the public sewerage and collection system owned and operated by the HTMA. The Planning Area is made up of 16 drainage areas totaling approximately 6,400 acres in Hatfield Township and two basins in Montgomery Township. This area is depicted Plate 1. The North Penn Water Authority (NPWA) provides public water service to the majority of the Township and the Planning Area. There are a relatively small number of on-lot sewage systems and individual wells throughout the Township with the largest concentration of about 30 conventional on-lot systems in the Derstine Road area.

This area, shown on Plate 1, and Figure II-1, is referred to as the Derstine Road Study Area (DRSA).

¹ According to 2009 Chapter 94 Wasteload Management Report (Exhibit III-3)

This TMDL was later withdrawn in 2008. The Pa DEP intends to issue a new TMDL for the streams and tributaries listed in Category 5 not later than 2015. A full listing of the streams and tributaries of the West Branch Neshaminy, their impairments, potential TMDL timings and causes can be found in Exhibit II-1.

The DRSA is drained by numerous unnamed tributaries to the Skippack Creek. These feed Unnamed Tributary 01097, which is listed under Category 4c in the 2008 Pennsylvania Integrated Water Quality Monitoring and Assessment Report. Category 4c waters are impaired for one or more designated use but not needing a TMDL, as the source of impairment is not a pollutant. A full listing of the streams and tributaries of the Skippack Creek in the DRSA and their impairments and causes can be found in Exhibit II-2. These tributaries are shown on the numerous figures throughout this section.

C. SOILS

Soil characteristics, such as depth to rock or redox features and slope, are used to determine suitability for onlot systems. According to the Montgomery County Soil Survey, as well as USDA and NRCS data, two primary soil associations are found in the Hatfield Township Planning area. These associations are the Abbottstown-Readington-Croton association, occupying most of the planning area, and the Reaville-Penn-Klinesville association which makes up the southwestern portion of the planning area including the DRSA. The extent and location of each are also depicted in Figure II-2, the General Soil Map of Montgomery County.

The Abbottstown-Readington-Croton association is characterized by deep, moderately well drained to poorly drained soils underlain by shale and sandstone. The Abbottstown soil group makes up approximately 30% of this association, Readington approximately 30% and Croton approximately 25%. Hydrologic Soil Group (HSG) classifications for these soils are C (Abbottstown and Readington) and D (Croton). HSG ratings describe the physical drainage properties of each soil series, including texture and permeability, as well as certain physiographic properties, such as depth to bedrock and water table. HSG Group A are well drained and highly permeable and HSG Group D are poorly drained and produce much greater runoff. HSG Groups C and D are not ideal soils for the use of conventional on-lot sewage disposal systems, as they are slowly permeable and have a seasonal high water table. While there are number of these systems in the planning area in this soil association the proximity of these systems to the existing collection and conveyance system lends itself to connection in the future should problems arise or development necessitate. All known on-lot systems in the planning area are shown on Plate 3.

The remainder of the planning area, including the largest concentration of on-lots systems is located in the Reaville-Penn-Klinesville soil association. This soil association is characterized by shallow to moderately deep soils that are well drained to somewhat poorly drained. These soils are underlain by shale with bedrock between 10" and 36" below the surface. The Reaville soil group is the predominant group of this association and makes up approximately 35 – 40% of the association. The Reaville soil group is moderately deep with shale fragments, slowly permeable and in HSG Group C. The Penn soil group, making up approximately 25% of the of the association is moderately deep to shallow, well drained and overlays bedrock. The Penn soil

elevation); however minimum and maximum elevations of 20' and 1355' above MSL can be found.

Carbonate bedrock as limestone and dolomite that has weathered results in karst topography with features such as sinkholes, depressions and caves. Karst features can function as direct recharge to groundwater aquifers causing contamination. In 2003, the PA Geological Survey published a karst density map. Exhibit II-6 shows the Montgomery County area clipped from this map. As shown there are no karst areas of concern in either the planning area or the DRSA. According to DEP's eMap, no sinkholes are catalogued for the planning area.

Planning area and DRSA topography are shown in Plate 2 and Figure II-1. The impact of slope on suitability for on-lot systems is depicted graphically on Figure II-6.

F. POTABLE WATER SUPPLIES

Potable water is supplied by the North Penn Water Authority (NPWA), a ten member municipal authority serving the entire planning area as well as many neighboring municipalities. NPWA owns and operates the Forest Park Water Treatment Plant (FPWTP); PWS permit no. 0997510, in Chalfont, Bucks County. The NPWA serves over 30,000 customers.

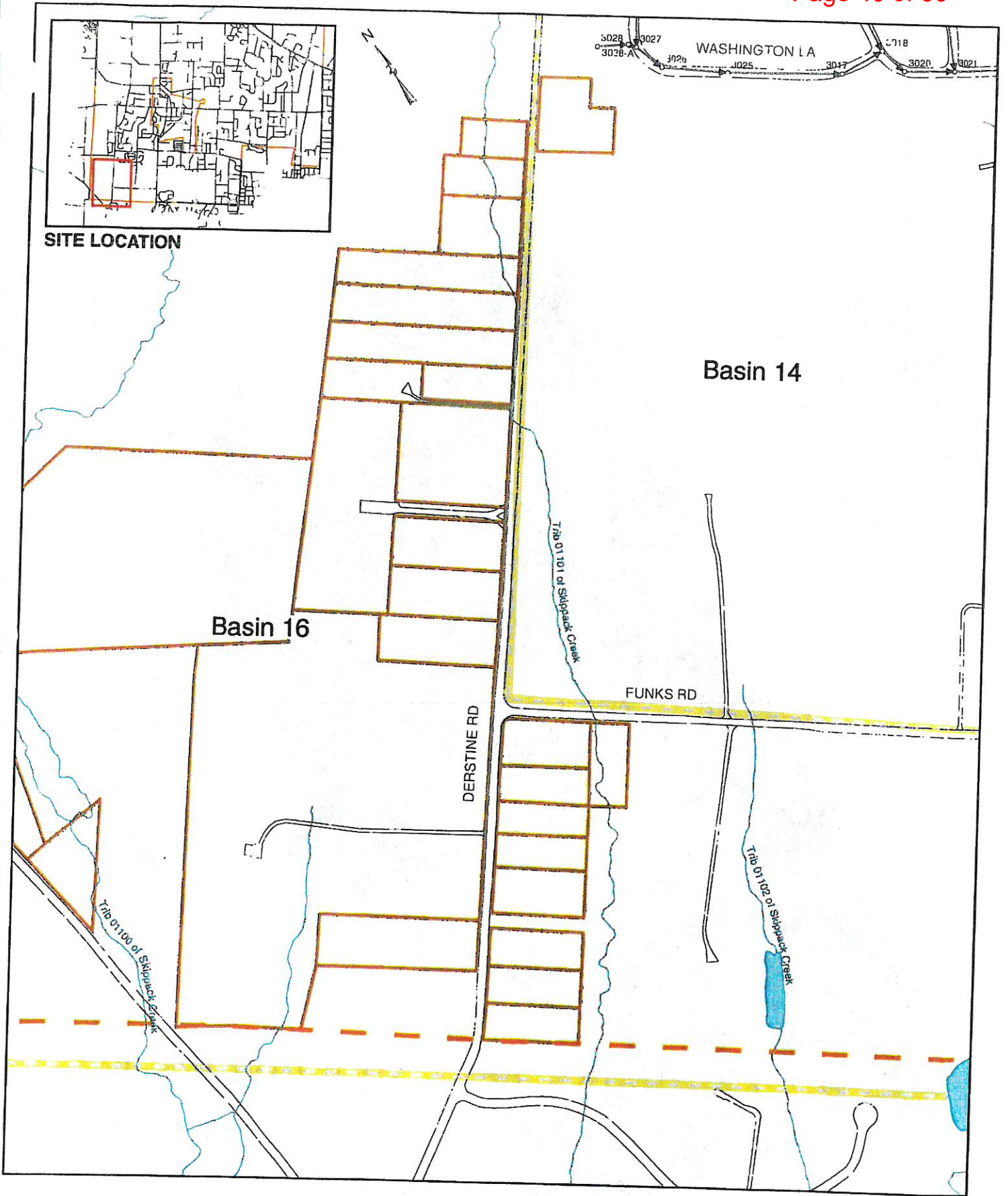
Much of the source water treated at the FPWTP is withdrawn from the Neshaminy Creek below Lake Galena in Bucks County. In the summer months, some source water is withdrawn from the Delaware River at Point Pleasant and used to augment the supply in the Lake Galena reservoir. The FPWTP process includes conventional filtration, granular activated carbon, and ozone disinfection prior to distribution. NPWA also operates twenty groundwater wells in the planning area. Water from these sources is chlorinated prior to distribution.

Where public water is not available, property owners rely on groundwater wells. Most of the more productive aquifers are in carbonate rocks, primarily limestone. Although the water-yielding character of the carbonate rocks depends on the degree of fracturing and development of solution cavities in the rock, the limestone formations generally yield moderate to large volumes of water. Well yields in the Piedmont crystalline-rock aquifers are 15 – 20 gpm. Plate 4 includes the NPWA wells and water supply tanks within the planning area. As shown, NPWA does not operate any facilities within the DRSA.

G. WETLANDS AND FLOODPLAINS

Wetland identification focused on the DRSA due to its large concentration of conventional on-lot sewage disposal systems. Wetlands were identified using the National Wetlands Inventory (NWI) mapping⁵. These wetland areas, along with other water resources and hydric soils identified using the Soil Survey of Montgomery County (2003) are shown on Figure II-4. Hydric soils are generally found along watercourses coinciding with wetlands and/or floodplains, although hydric soils are often more extensive than wetland areas. The NWI mapping was compiled by the U.S. Fish and Wildlife Service using color infrared aerial photos indicating soil

⁵ <http://www.fws.gov/nwi/>



- Survey Results Received
- Water Body
- Parcels
- Hatfield Sanitation Basins
- Stream
- Township Line

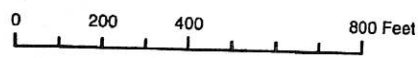
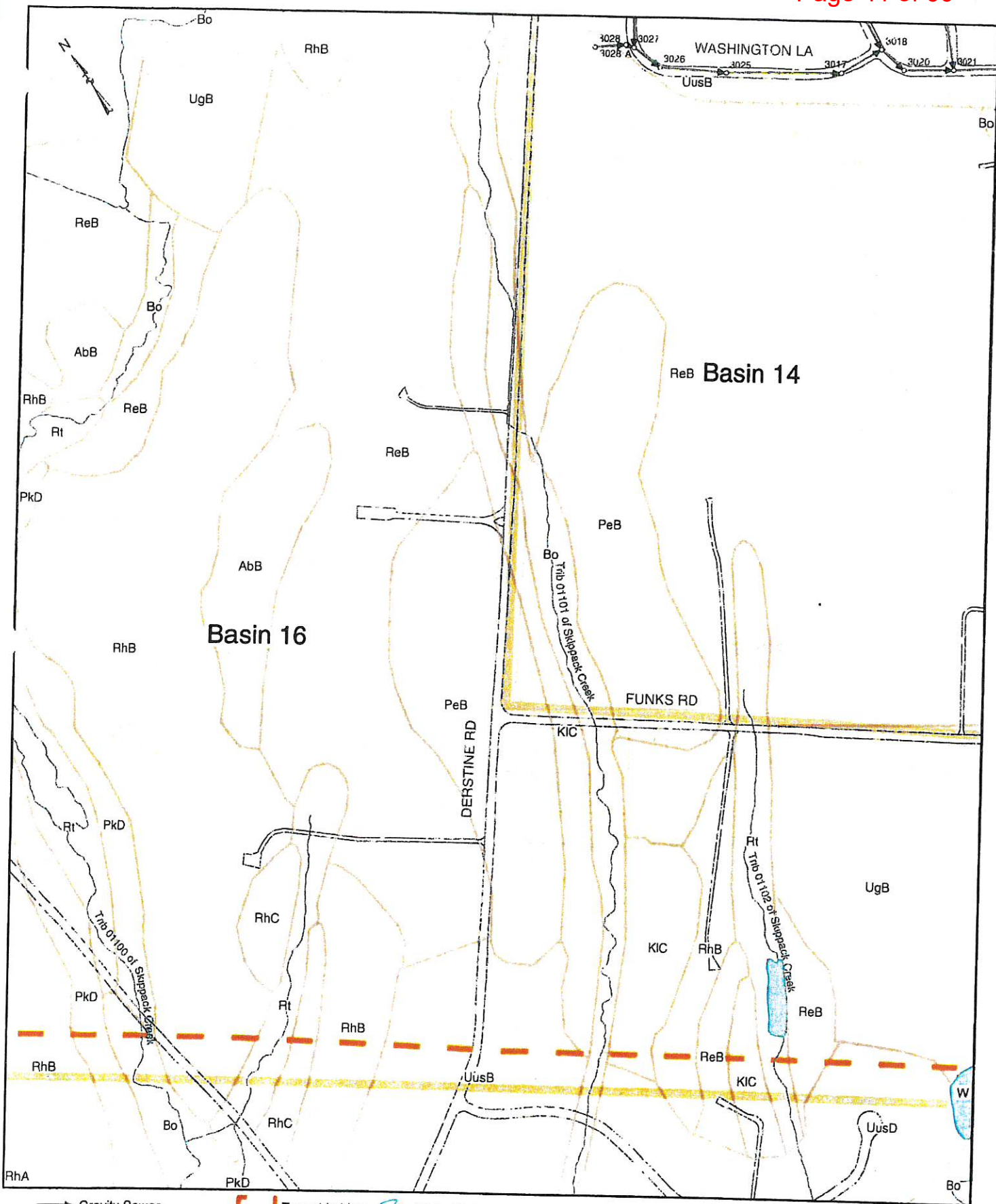
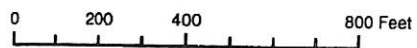


Figure II-1
DERSTINE RD STUDY AREA (DRSA)
Hatfield Township Municipal Authority
Hatfield Township, Montgomery County, Pennsylvania
CET ENGINEERING SERVICES
Harrisburg, Pennsylvania
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- Gravity Sewer
- Manhole
- ▭ Township Line
- ▭ Parcels
- ☁ Water Body
- Stream

Hatfield Sanitation Basins



**Figure II-3
DRSA - SOILS**

Hatfield Township Municipal Authority
Hatfield Township, Montgomery County, Pennsylvania
CET ENGINEERING SERVICES
Harrisburg, Pennsylvania

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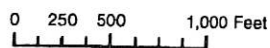
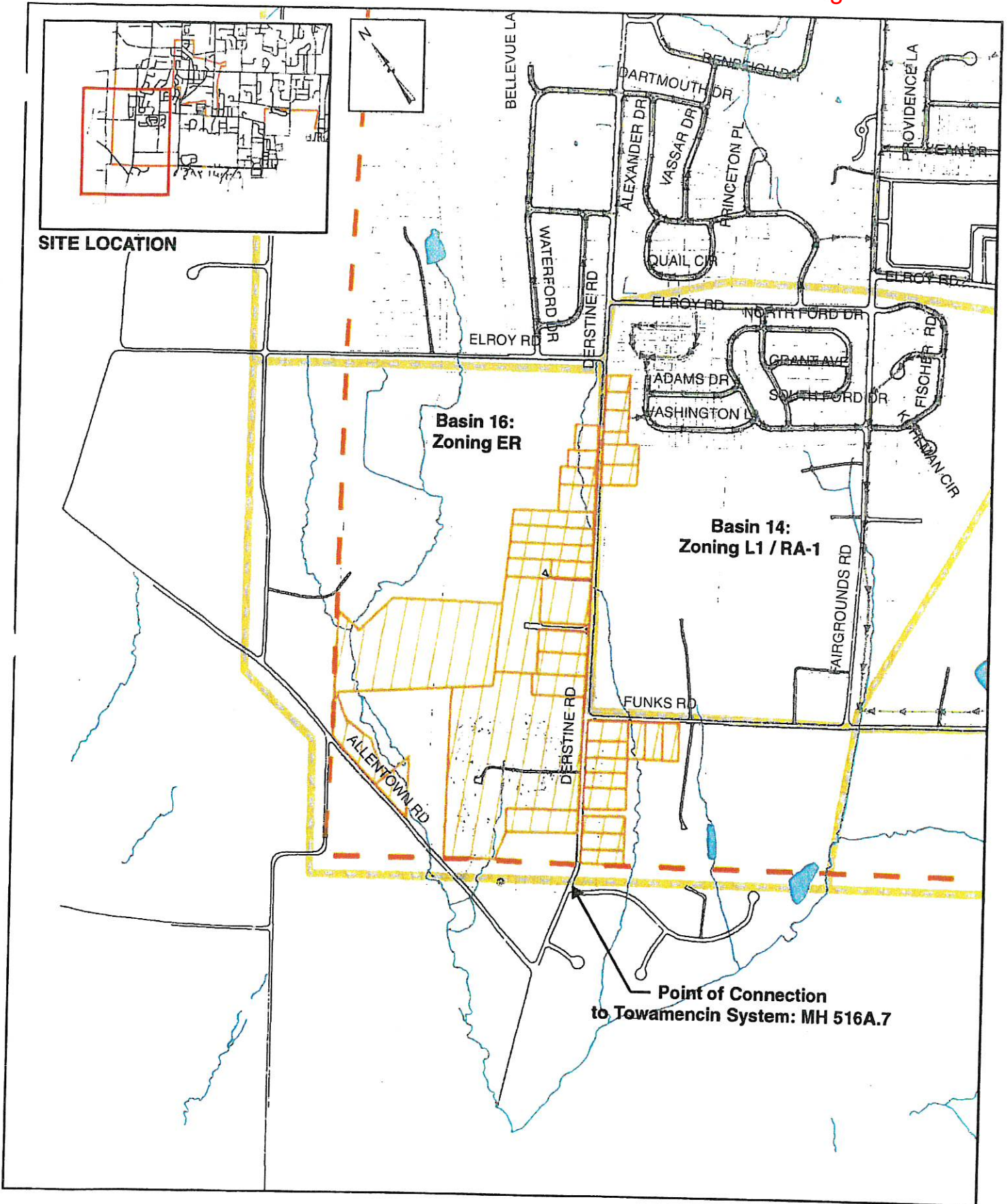


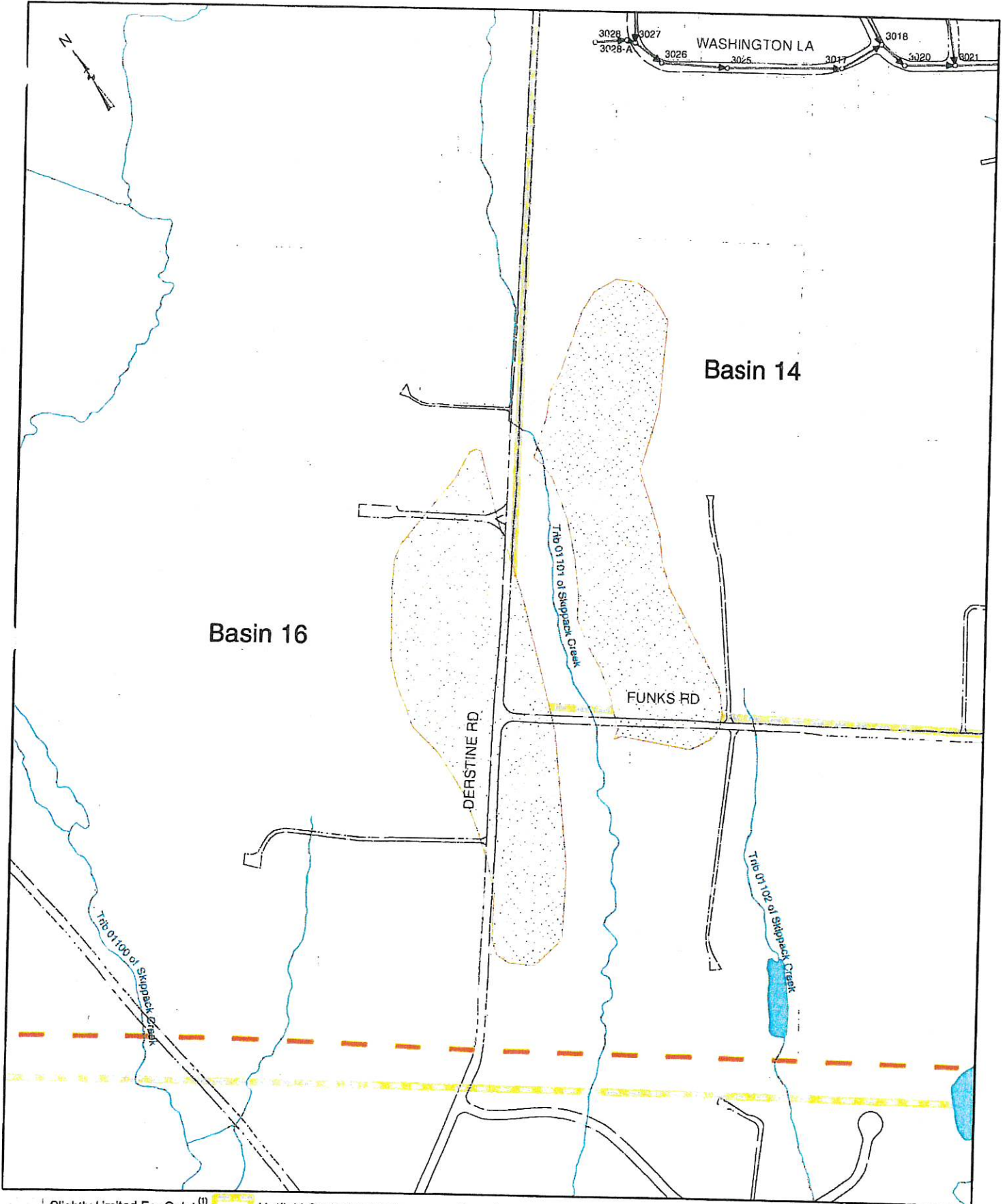
Figure V-1
DERSTINE RD STUDY AREA (DRSA)

Hatfield Township Municipal Authority
Hatfield Township, Montgomery County, Pennsylvania

CET ENGINEERING SERVICES

Harrisburg, Pennsylvania

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Slightly Limited For Onlot ⁽¹⁾	Hatfield Sanitation Basins	Parcels
15-25% Slope ⁽²⁾	Gravity Sewer	Township Line
Hydric Soils	Manhole	Water Body
		Stream

(1) Slightly Limited for Sand Mound Bed or Trench and Spray Irrigation.
All other areas mapped are Very Limited for Onlot.
(2) All other areas mapped are under 15%

0 200 400 800 Feet

Figure II-6
SOIL SUITABILITY FOR ON-LOT SYSTEMS
Hatfield Township Municipal Authority
Hatfield Township, Montgomery County, Pennsylvania
CET ENGINEERING SERVICES
Harrisburg, Pennsylvania
Copyright © 2010 by Commonwealth Engineering & Technology, Inc. T/A CET Engineering Services
All Rights Reserved.

III. EXISTING SEWAGE FACILITIES IN THE PLANNING AREA – IDENTIFYING THE EXISTING NEEDS

A. SEWER SERVICE AREAS

COLLECTION AND CONVEYANCE

Plate 4 shows the location of the Hatfield Township public sewer service system including interceptors, pump stations, force mains and the Township's wastewater treatment plant in the planning area. As described previously in this plan revision, the HTMA sewer system serves a planning area encompassing 16 basins in the Township, all of the Borough of Hatfield, and portions of Montgomery and Franconia Townships

The Hatfield Township Municipal Authority owns and maintains approximately 81 miles of sewer and 1,440 manholes. The majority of the collection sewers are 8-inch PVC, and the size of the interceptors are as large as 36 inches in diameter. The primary HTMA interceptors are the Neshaminy Interceptor (including the South and West Branch), the Montgomery Interceptor, the Lexington Interceptor, the Hilltown Interceptor and the Fairview Road Interceptor. The HTMA collection system includes two (2) HTMA-owned pump stations, Fairgrounds Rd. and Orvilla Rd. These pump stations are discussed in further detail later in this section. The design capacities and current flows of various collection and treatment systems are listed below in Table III-1.

Basins A and B of the Montgomery Township Municipal Sewer Authority's (MTMSA) sewer system is tributary to HTMA. The MTMSA owns and maintains approximately 63 miles of 8" – 24" gravity sewer and two (2) miles of force main ranging from 2" – 12" in Basins A and B. There is an estimated 1,565 precast concrete and / or brick manholes in the MTMSA sewer system that is tributary to HTMA. Major interceptors within MTMSA's collection system include Villa Glen, Line Street, and Route 309/Richardson Road interceptors. There are three (3) MTMSA pumping stations in Basins A and B that pump to the HTMA collection system including two (2) pump stations located on Knapp Road and one (1) located on Montgomery Avenue.

The Hatfield Borough collection system consists of approximately seven (7) miles of gravity sewer, and is maintained by Hatfield Borough staff. There are no sanitary pump stations located in Hatfield Borough. Wastewater flows from Hatfield Borough are discharged via gravity sewers through Hatfield Borough Manhole 1.

A portion of Franconia Township contributes to the HTMA sewer service area via gravity sewers only (no pump station), and enters the HTMA system at MHs 341-5 and 74-158 as shown on Plate 4.

The HTMA owns and operates a 6.98 MGD Wastewater Treatment Plant (WWTP) that discharges treated effluent under NPDES Permit No. 0026247 to the west branch of the

Hatfield Township
Act 537 Sewage Facilities Plan
Official Plan -- Update Revision
November 2010
Revised May 2011

HTMA CAP previously discussed. Two capital projects related to the CAP will be discussed in the following section.

UPGRADE AND EXPANSION OF TREATMENT FACILITIES

In conjunction with the HTMA CAP, HTMA is in the design, bid, and construction process to two major capital projects:

Construction of new Neshaminy Interceptor

The existing Neshaminy Interceptor consists of two parallel interceptors originally designed to provide additional capacity and reduce surcharging during extreme wet weather events. The HTMA is replacing the older of the two existing parallel interceptors including approximately 11,500 linear feet of existing sanitary sewer with new, larger capacity sanitary sewer. Construction is expected to commence in early 2011.

Construction of Wet Weather Equalization Facility

To mitigate the potential impacts of high wet weather flows on the biological treatment processes, two new 4.0 million gallon tanks for offline storage adjacent to the plant were added. To convey the flow, construction of two diversion structures were accomplished, one for the HTMA sewer and one for the Montgomery Township Municipal Sewer Authority (MTMSA) sewer. These diversion structures will divert flow to a rehabilitated, currently unused pump station at the lower end of the plant. Each diversion structure will have a gate leading to the equalization (EQ) tanks (diversion gate), and a gate leading to the plant (plant gate). The gates will be electric motor operated with a manual hand wheel back-up.

When the combined flow reaches 24 MGD, the diversion gates will begin to open to allow flow to the pump station and maintain a maximum plant influent equal to the current plant flow setpoint. If/when the opening of the diversion gate alone (due to hydraulic considerations) does not send enough flow to the surge tank to maintain 24 MGD, then the slide gate to the plant will begin to close to force more flow to the pump station. Flow to the surge tanks will be monitored and totalized. Once the totalized flow approaches the capacity of the tanks (eight million gallons) then the diversion gates will close and all wastewater will be directed along the normal route to the plant.

The diversions are also being provided to allow for maintenance and repair of the existing first stage screw pumps and plant headworks. If this equipment requires repair, the diversions will allow the EQ pump station to bypass the headworks and pump the wastewater to the secondary treatment stage.

Rehabilitation of the pump station will consist of replacing existing pumps with 3 new vertical dry well centrifugal pumps with a capacity of 4.3 MGD each. New piping, valves, control

equipment, pump starters, and electrical panels will be provided, with pump control based on wet well level. Attached to the EQ pump station building will be a diversion structure with valves to divert flow to the return line. On the return line will be a flow meter, which shall be integrated into the plant SCADA program. Once a high flow event is over and the plant flow drops below the return flow permissive setpoint, the system shall begin to open/modulate valves to maintain the desired inflow to the plant.

The equalization tanks are 191 foot diameter, 20 foot high glass coated, bolted steel. The floors of the tanks is a poured concrete slab, which slopes inward towards the supply line in order to drain when necessary. Floating mixers and aerators will be provided in the EQ tanks to meet the DEP design requirement to maintain a 1.0 mg/l DO in the basins. Each tank will have level monitoring connected to the plant SCADA system. The tanks normally fill one at a time on automatic control, but have the capability to fill both at the same time through manual valve control. The tanks are provided with an overflow pipe that will drain back to the upper portion of the plant.

The tanks have an automatic flushing system to remove solids after each usage. Several non-potable plant water connections and access points will also be placed around the EQ tanks to provide for cleaning. A new, small utility building will be constructed for the water flush pumps and electrical panel boards. Nonpotable water will be pumped from the buried flush water storage tank to the cleaning system as needed. Construction began on this project in early 2010 and is scheduled for final completion in early 2011.

Installation of New Ultraviolet Disinfection System

In 2009, HTMA underwent the piloting, testing and procurement of a new UV disinfection system. This system selected is based non-contact arrangement where clarified effluent flows through tubes and medium pressure UV lamps are located outside of the flow tubes (and not in the water) and is manufactured by Enaqua⁸. This system will have a peak capacity of 28 MGD. Final design is expected to be complete in 2009 with installation of the new system occurring in late 2010 and early 2011.

RESERVE CAPACITY

The permitted hydraulic capacity of the treatment plant is 6.43 MGD, increased to 6.98 MGD by CO&A, with a maximum month design flow of 8.37 MGD. Table III-3 lists the average 2009 hydraulic and organic loadings to the treatment facility compared with the permitted/design values.

⁸ <http://enaqua.com/enweb/>

NON-MUNICIPAL, INDIVIDUAL, AND COMMUNITY SEWERAGE SYSTEMS

Several non-municipal, community, and individual wastewater facilities permitted by DEP are located in the Township. According to the DEP eFacts website, the facilities listed in Exhibit III-4 are point source discharges in the Township.

SMALL FLOW TREATMENT FACILITY SYSTEMS – O & M REQUIREMENTS

Small flow treatment facilities (SFTF) are defined by the DEP as “individual or community sewerage systems designed to adequately treat sewage flows not greater than 2,000 gpd using a stream discharge or other methods approved by DEP.” These facilities are designed by professional engineers and permitted by DEP rather than the SEO. There are no existing Small Flow Treatment Systems in the Township.

DISPOSAL AREAS

No sewerage systems in the Township use any disposal method other than stream discharge.

B. INDIVIDUAL AND COMMUNITY ONLOT SEWAGE DISPOSAL

There are approximately 60 on-lot systems throughout the Township according to staff and Township documentation. These systems are scattered throughout the Township in both planned developments and single parcels. However, the largest density of these systems exists in the Derstine Road Study Area.

In March 2009, the CET and HTMA Staff conducted a Sewage Needs Survey of the on-lot systems. This, coupled with a review of soil type and suitability for on-lot systems, aids in the evaluation of needs for the Township. The Needs Survey consisted of two parts, a mail survey (conducted in October of 2008) which was sent to the address of all the known on-lot sewage disposal systems, as well as a door to door survey and water sample survey (conducted in March 2009) that was accomplished in the Derstine Road Study Area.

This area was selected for a more detailed study due to the number of systems in this area, the relatively small lot size, and the use of individual potable water systems. Additionally, the geographic location and proximity to the existing sanitary sewer system may facilitate an extension should groundwater contamination be found. Other areas were not selected for door to door surveys or well sampling as the numbers of systems were small and many are within a reasonable proximity to an existing sewer line, or have sufficient room to construct / rehab existing systems. Plate 3 and Figure II-1 show all the on-lot systems in the planning area as well as the DRSA.

- d. *Properly functioning* – identified by systems operating satisfactorily, constructed in accordance with permit requirements effective at the time.

Tables III-4.a and III-4.b summarizes data collected from the mail and door to door surveys for the Township as a whole and the DRSA. Figure III-3 depicts confirmed, suspected, and potential malfunctions in the DRSA.

Table III-4.a. Survey data (Township)

#	Confirmed					Suspected			Potential		
	Wet	BTG permits	Piped	Backups	Holding tank	Green grass	Unsuitable soils	Privy cesspools	< 72	Soils/ Geo	Repair'd
59	2	1	0	0	3	6	0	1	26	0	8
% of Total	3	2	0	0	5	10	0	2	44	0	14

Table III-4.b. Survey data (DRSA)

#	Confirmed					Suspected			Potential		
	Wet	BTG permits	Piped	Backups	Holding tank	Green grass	Unsuitable soils	Privy cesspools	< 72	Soils/ Geo	Repair'd
24	2	0	0	0	1	6	0	0	16	0	2
% of Total	8	0	0	0	4	25	0	0	63	0	4

Figure II-6 shows soil and topographic limitations to types of on-lot systems that can be installed in the DRSA.

For the Derstine Road Study Area, there appears to be some limitations for the effectiveness of standard in-ground disposal systems (because of the shallowness of limiting zones, hydric soils and some steep slope). Elevated sand mounds may be suitable for homes in this area, but this needs to be investigated on a case-by-case basis. However, because of the relatively small size of many of the lots, siting an on-lot disposal system may not be in accordance with the current regulations for new systems regarding isolation distances from wells, other on-lot disposal areas, homes, etc. Generally it can be difficult to achieve the required isolation distances on lots less than an acre. Because of this, a water supply survey was conducted in this area to determine the extent, if any; groundwater contamination exists in this area.

WATER SUPPLY SURVEY

An individual water supply survey was conducted by the Township in accordance with DEP's Sewage Disposal Needs Identification publication. A well water survey (in areas without public water) of the DRSA was conducted. All well samples were tested for total coliform, fecal coliform and nitrate-nitrogen and of the 24 systems, 14 or 58% were sampled.

EPA's safe drinking water criteria for nitrate in public water supplies is 10 milligrams per liter of sample (10 mg/l). Sources of nitrate-nitrogen include natural decay of organic matter, precipitation, mineral weathering, manure application, chemical fertilizers, and malfunctioning sewage disposal systems. None of the well samples exceeded these criteria.

As reported by HTMA staff, the WWTP received approximately 8.6 MG of septage from local haulers in 2008. The HTMA regulates the haulers through a Hauler's permit. A list of the Township's approved haulers is included in Exhibit III-5. The HTMA also received approximately 21.6 MG and 0.47 MG of holding tank and grease trap waste in 2008, respectively. In addition to domestic septage and holding tank waste, HTMA receives a small quantity of trucked waste from a few industrial sources. These are listed in the Annual Pretreatment Report submitted to DEP with the Annual Chapter 94 report.



Figure III-2: HTMA WWTP Aerial

IV. FUTURE GROWTH AND LAND DEVELOPMENT

A. MUNICIPAL AND COUNTY PLANNING DOCUMENTS

LAND USE AND ZONING PLANS AND REGULATION

The Montgomery County Comprehensive Plan, most recently adopted on September 9, 2004 by the County Board of Commissioners is available online at <http://montcopa.org/plancom/comprehensiveplan>. This plan, entitled Vision Plan - Shaping Our Future: A Comprehensive Plan for Montgomery County, is intended to provide a vision of the county for the year 2025. This plan is a tool to address land use and recent trends in development projected out through 2025, and proposes alternatives and recommendations to shape how this land use occurs. The “Vision Plan” of the county proposes to:

- Direct new development to logical places, as an extension of existing developed areas or within these areas;
- Preserve critical open space and farmland for future generations;
- Revitalize Main Streets and brownfield industrial sites;
- Tackle traffic congestion effectively, while providing transportation alternatives to the car; and,
- Offer a variety of housing, job, shopping, and recreational choices to county residents.

The overall comprehensive plan was broken into eight separate sections, each focusing on a particular item. These are the Guiding Vision, the Land Use Vision, the Open Space, Natural Features, and Cultural Resource Vision, the Transportation Vision, the Community Facilities Vision, the Water Resources Vision, the Economic Development Vision, and the Housing Vision. Each component of the plan developed goals to attain the proposals listed above. This portion of the Plan Revision will summarize only the Community Facilities and Utilities Vision, Water Resources Vision and Land Use Vision as they pertain to sewage facilities planning in Hatfield Township.

The Land Use Plan, as described above shows how new development can be accommodated in a better way that reduces sprawl, revitalizes older areas, preserves open space, and provides new housing and employment opportunities, while meeting market demand. This plan is aimed at a series of six goals, which can be found in Exhibit IV-1. Of these six goals, the first, “Direct Development in Designated Growth Areas”, directly pertains to future facilities planning. The Land Use Plan designates most of Hatfield Township as an Existing Suburban Development. However some portions of the Township, including the western and southwestern areas are Designated Growth Areas. A copy of the Land Use Plan Summary and Growth Areas can be found in Exhibit IV-2. The DRSA is located in the designated growth area as well as a number of other undeveloped areas of the Township. These areas are shown on Plate 5 and will be described in further detail later in this section. Hatfield Township is also designated as a secondary development center, defined as a local community focal point that has a variety of uses.

these documents work together along with the Montgomery County Health Department and HTMA in the siting and construction of sanitary sewer or on-lot sewage disposal systems.

FLOODPLAIN, STORMWATER, AND SPECIAL PROTECTION (CH. 93) PLANS

The 100-year floodplain boundaries shown on Plate 2 were prepared for the National Flood Insurance Program by the Federal Emergency Management Agency (2002).

The Montgomery County Comprehensive Plan outlines numerous best management practices, both structural and non-structural, which municipalities can use to reduce the affect of stormwater discharge. These BMPs are included in the Water Resources Plan Summary which can be found in Exhibit IV-5. As well, the Townships Zoning and Subdivision and Land Development Ordinances regulate development activities in floodplains.

Hatfield Township currently has in place a Stormwater Management Ordinance, Chapter 242 of the Codified Ordinance. This Ordinance places stringent requirements on stormwater facilities and minimizes the need to negotiate size of the stormwater management facilities. Additionally the Township Subdivision and Land Development Ordinance governs the design and construction of new stormwater facilities.

Chapter 93 identifies Special Protection Waters as streams of High Quality (HQ) or Exceptional Value (EV). There are no HQ or EV waters in Hatfield Township.

B. POPULATION

EXISTING AND PLANNED DEVELOPMENT

The 2009 Chapter 94 Report to DEP lists future connections to the collection system from known and anticipated developments projected over the next five years. Per the 2009 Chapter 94 report, total connections to the HTMA system (including contributions from neighboring municipalities) and planned connections over the next six years are shown in Table IV-2. As previously discussed future connections shown below are consistent with correspondence from contributing municipalities.

2025. The county planning information is a useful baseline and with this, the Township and HTMA underwent a more detailed analysis of future projected loadings. This information is provided in the following portion of the plan revision.

C. PROJECTED WASTEWATER LOADINGS

PROJECTED HYDRAULIC LOADING

Projected hydraulic loadings were determined by first making an assessment of the current flow in the Hatfield Township system by the EDU's already connected. Based on the 2009 Chapter 94 report there are currently 19,214 EDU's connected to the system and the five-year average flow per EDU is 327 gpd. This yields a current average flow of 6.28 MGD.

In addition to the current flow there are an additional 1,534 EDU's that are projected to connect in next five years as reported in the 2009 Chapter 94. For purposes of this projection future connections are assumed to contribute **250 gpd/EDU**. This results in a projected flow **0.384 MGD**.

In order to further project flows, a build-out analysis was conducted by Hatfield Township staff. This analysis gave the approximate acreage available for development in each type of zoning classification. By applying an estimate of the potential number of EDU's per acre in each type of zoning the approximate number of future connections can be made. A summary of this analysis is shown below in Table IV-4.

Table IV-4. Projected EDU Connections from Future Growth.

Zoning		Acreage Available	EDU / Acre	Total EDUs	Flow Contribution (GPD)
Residential	RA-1	404	2.0	808	202,000
Light Industrial	LI	567	4.5	2,552	638,000
Totals		971		3,360	840,000

As shown above this analysis results in an expected additional **0.840 MGD** of flow from build-out of the Township.

Table IV-5 tabulates the above data and includes a sewage contribution from approximately 60 EDU's, assuming all on-lot sewage disposal systems are eventually connected to public sewer.

V. EVALUATE ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES

IDENTIFIED NEEDS

Population and wastewater flow projections were developed in Section IV for a buildout scenario. Based on this analysis it is anticipated that Hatfield Township could require an additional approximately 540,000 gpd hydraulic treatment capacity.

While there are a relatively few on-lot systems throughout Hatfield Township, a small concentration exists in the Derstine Road Study Area. Sanitary and water sampling results indicates some contamination in the DRSA and other on-lot systems throughout the Township. However, this contamination is not at the level to require an immediate land based solution or extension to existing facilities. Improvements to the operation, maintenance and oversight of these systems are necessary to keep them operating effectively, and prevent further contamination. Currently, the permitting, and inspection of these systems is managed at the county level at the Montgomery County Health Department. Well-water sampling in the DRSA as part of this update indicated some pollution concerns from nitrates.

Alternatives to satisfy the projected wastewater facility capacity needs, and the effective long-term operation of on-lot sewage disposal systems are developed in the remainder of Section V.

A. CONVENTIONAL ALTERNATIVES

REGIONAL WASTEWATER TREATMENT

The HTMA owned wastewater treatment plant currently provides regional wastewater treatment for Hatfield Township and portions of surrounding and adjacent communities. On-lot systems taken offline within the planning area, will also follow this regional approach. The DRSA, located in Drainage Basins 14 and 16, could be served by an extension to the existing sewage facilities in Towamencin Township. This alternative is discussed further in the following section.

EXTENSION OF EXISTING FACILITIES TO AREAS WITH NEEDS

While DRSA is not in immediate need for an extension to existing facilities, should contamination increase, or development necessitate, it may be cost effective to construct facilities to serve this area.

Initial sewage planning and design is underway for the development of the 26-acre parcel currently at 82 Derstine Road. The intended development is to be a 240 unit assisted living development housing area, named Derstine Run. The location of this parcel, Hatfield Township drainage basins, and approximate location of possible connection is shown on Figure V-1. Advanced Living and Management, the developer, is submitting sewage planning requirements

- Repair
- Upgrading
- Reduction of hydraulic or organic loading to existing facilities.
- Improved operation and maintenance
- Other applicable actions

This alternative will examine the potential for both upgrading existing facilities and increasing the hydraulic loading capacity of the facility via a hydraulic re-rate.

In June 1991, Tracy Engineers prepared, but did not submit, a re-rate application to Pa DER. This application, contained in full in Exhibit V-4, requested the following capacities be increased for the HTMA AWTF above their 1987 design values:

Table V-4. 1991 Re-rate Capacity Adjustments

<u>Parameter</u>	<u>1987 Design Basis</u>	<u>1991 Re-rate Recommendation</u>
Average Daily Flow (MGD)	6.43	8.25
Maximum Monthly Flow (MGD)	-	11.55
Peak Daily Flow (MGD)	13.65	18.00
Peak Hourly Flow (MGD)	20.80	27.00
Raw Influent BOD ₅ (lb/d)	11,832	16,513
Raw Influent TSS (lb/d)	11,832	19,265
Raw Influent TKN (lb/d)	2,622	2,752
Raw Influent NH ₃ -N (lb/d)	1,929	1,514
Raw Influent NO _x (lb/d)	62	207
Raw Influent TP (lb/d)	462	550
Primary Effluent BOD ₅ (lb/d)	8,283	10,899
Primary Effluent TSS (lb/d)	4,732	9,247
Primary Effluent TKN (lb/d)	2,622	2,339
Primary Effluent NH ₃ -N (lb/d)	1,929	1,445
Primary Effluent NO _x (lb/d)	62	330
Primary Effluent TP (lb/d)	462	414

Tracy's analysis was based on both hydraulic and organic capacities of the treatment units based on plant operating data. This analysis showed that the headworks area was a significant hydraulic bottleneck in the plant, and based on their calculations, limited to a peak hourly flow of 27 MGD due to pipe capacity between the grit/grease chamber and pump station two. Additionally, on an average daily flow basis, calculations showed that the limiting treatment units were the aeration tanks, at an ADF of 8.44 MGD. This was based on a minimum 16 hour detention time. Tracy then selected 8.25 MGD as the potential re-rated ADF and set the other flows based on historical peaking factors. Other parameters were then set based on average and expected loadings. These flows and loadings were then examined to determine what if any modifications may be required. CET has reviewed Tracey's findings and recommendations and finds them to still be relevant at this time.

alternative. Additionally, the dispersion of the other on lot systems throughout the Township does not lend itself to community treatment.

INNOVATIVE/ALTERNATIVE METHODS OF COLLECTION/CONVEYENCE

DEP's Guide includes the following "partial listing of innovative and alternative technologies" available to provide individual and system-wide collection technologies:

- Cluster Systems
- Septage Treatment
- Small Diameter Gravity Sewers
- Vacuum Sewers
- Variable Grade Sewers
- Septic Tank Effluent Pump with Pressure Sewers (STEP)

The Township does not anticipate the need to use innovative or alternative methods of collection or conveyance to serve the DRSA. Should these systems be proposed as part of new development, they will be addressed on a case by case basis.

B. INDIVIDUAL SEWAGE DISPOSAL ALTERNATIVES

Individual sewage disposal systems may be permitted for new land development where conditions are suitable as established by the Montgomery County Health Department Sewage Enforcement Officer (SEO), and where the Township assures their proper operation and maintenance as required by Chapter 71.62. The technical solutions available for onlot repair and placement of onlot replacement systems are limited by soil and site conditions. If the soils are suitable in the area of the repair, standard in-ground systems may be used; if the soils are marginal, elevated sand mounds, oversized systems, or shallow placement systems can be considered for use, as is the case in much of the DRSA. The plan should closely evaluate the advantages of testing for and protecting a second suitable site on each lot for future replacement systems. The system design must include provisions for access to system components for maintenance requirements.

As per DEP Planning Module Component 3, a preliminary hydrogeologic evaluation of the proposed development site is required by DEP when a water supply within ¼ mile of the development site exceeds 5 mg/L of nitrate-nitrogen, or DEP has determined that known geologic conditions may contribute to the potential for groundwater pollution.

A sewage management program is recommended to comply with Chapter 71.71, which states that municipalities are required to "assure the proper operation and maintenance of sewage facilities."

The Township can establish a workable comprehensive management program in conjunction with systems already in place with MCHD that ensure proper design and operation. The

Small flow treatment facilities as detailed in DEP's *Small Flow Treatment Facilities Manual*, (November 23, 2003), are restricted to use as a replacement or repair system for onlot system malfunctions as determined by the local agency. While no specific application of these systems have been identified by the needs analysis, this plan allows the local agency and the Township to use a small flow sewage treatment facility when deemed necessary and in compliance with the regulations regarding design, installation, operation, maintenance, and the Township's Sewage Management Program.

D. COMMUNITY LAND DISPOSAL ALTERNATIVES

While no specific application of community land disposal alternatives has been identified in the needs analysis; this plan allows the use of these systems in compliance with Chapter 71.64 of DEP's regulations regarding site and soil suitability, and a hydrogeologic evaluation, and in accordance with the Township's Sewage Management Program.

E. RETAINING TANK ALTERNATIVES

This section has been prepared in compliance with Chapter 71.63. Retaining tanks (defined in Chapter 71.1) may be used with specific restrictions. Any retaining tank waste generated in the Township may be disposed of at the wastewater treatment facility. Requirements for regular service and maintenance of tanks would be enforced through existing Sewer Use Ordinance, Chapter 224, Article 1.

F. SEWAGE MANAGEMENT PROGRAMS

Municipalities are required to assure the proper operation and maintenance of sewage facilities within their borders. The Township intends to institute a Sewage Management Program (SMP) that provides the method to identify, evaluate and implement the operation and maintenance needs of existing and proposed sewage facilities in the Township. This program will assure the future operation and maintenance of existing and proposed sewage facilities, which protects the water resources, public health and homeowner investment. The SMP will be managed and administered by the Township. The Township will coordinate with the MCHD SEO as necessary. This plan revision was sent to MCHD for review. This correspondence, along with MCHD comments is included in Appendix B.

DEP's minimum requirements for a Sewage Management Program in accordance with Chapter 71.73 include:

- The adoption of the legal authority allowing access for inspections; and the development of a policy for scheduling inspections, and providing a method to notify owners of the policy.
- Standards for operation, maintenance, repair or replacement of sewage facilities:
 - o Scheduled removal of septage

systems work, how to take care of a septic system, water conservation and system record keeping will be made available. This information will be provided by the Township at notification of pump out. Examples of handouts and flyers are included in Exhibit V-7.

EXPANSION AND CONTINUED USE OF EXISTING AND NON-MUNICIPAL SEWAGE FACILITIES

The improved maintenance of existing systems and a method of monitoring performance should allow the continued use of on lot systems throughout the Township. However, repairs and replacement of existing systems, should they malfunction or be found to be substandard, may be challenging on some lots.

It is possible that the Township and the MCHD SEO will have to consider the use of Best Technical Guidance as defined in Chapter 73 of the Pennsylvania Code, or recommend an individual sewage system. Systems suspected of not operating properly shall be inspected by the SEO and if necessary, in accordance with DEP regulations and the Ordinance, be upgraded and improved. Those not upgraded and improved, because it is not feasible to do so, may be replaced by a holding tank. The Onlot Management Ordinance permits the Township to make the changes at the owner's expense if necessary.

To assist municipalities in helping homeowners maintain their systems with the goals of protecting public health and environmental quality, the EPA developed five models for management programs. See Exhibit V-8 for a summary of these models. All models include proper siting and construction of systems, and a systems inventory.

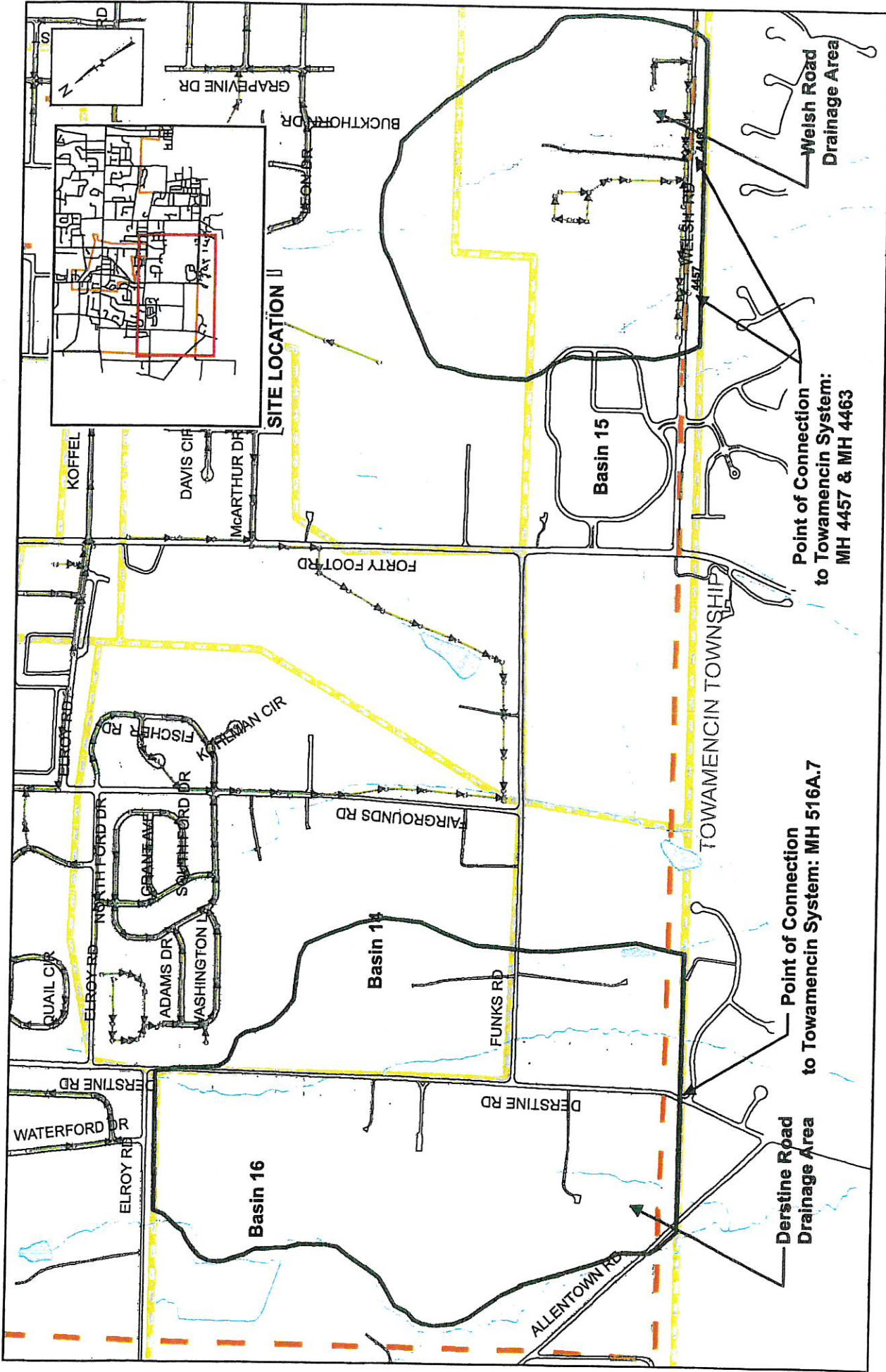
G. COMPREHENSIVE PLANNING

Montgomery County's Comprehensive Plan was developed to allow for land development and economic growth while maintaining the character of the County. Township zoning and land development ordinances are in place to assist in the controlled, orderly development of the Township.

The rules and regulations related to planning within the Township, as outlined in the Township's existing Zoning and Subdivision and Land Development Ordinance appear adequate to manage the proposed technical alternatives. Therefore, no new non-structural comprehensive planning activities are required at this time.

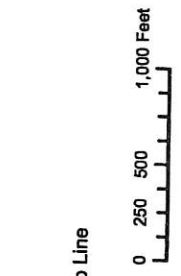
H. NO-ACTION ALTERNATIVE

As shown in Section III and IV, a projected hydraulic overload could occur at HTMA's WWTP during the planning period without addressing the alternatives previously described. Based on this, the no-action alternative is not a viable one at this time as it relates to the WWTP.



Point of Connection
to Towamencin System:
MH 4457 & MH 4463

Point of Connection
to Towamencin System: MH 516A.7



- Hatfield Sanitation Basins
- Water Body
- Manhole
- Gravity Sewer
- Stream
- Parcels
- Township Line

Figure V-1: Basins 14 & 16 Derstine Run Development

DERSTINE & WELSH RD DRAINAGE AREA
 Hatfield Township Municipal Authority
 Hatfield Township, Montgomery County, Pennsylvania
 CET ENGINEERING SERVICES
 Harrisburg, Pennsylvania
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VI. EVALUATION OF ALTERNATIVES

A. CONSISTENCY ANALYSIS

Wastewater management alternatives developed as part of the Act 537 planning process are evaluated in terms of their relationship to the goals and objectives of various planning, environmental, and natural resource laws and policies of the Commonwealth of Pennsylvania. Title 25, § 71.21.a of the Pennsylvania Code requires the Act 537 plan to address the consistency of each wastewater management alternative with eleven of the Commonwealth's goals and policies. If there is a conflict between the recommended alternative and one of the goals and objectives, the conflict must be resolved in order to obtain regulatory approval.

The following sections discuss the eleven evaluation categories as outlined in the PA DEP Act 537 Plan Content and Environmental Assessment Checklist and the consistency determination as they relate to the alternatives presented in Section V.

CLEAN WATER MANAGEMENT PLANS PER SECTIONS 4 AND 5 OF CLEAN STREAMS LAW

Section 4 of the Pennsylvania Clean Streams Law stresses the importance to maintain clean, unpolluted streams so as to attract industry and provide for outdoor recreational activities, prevent further pollution to streams, and restore polluted streams. Each of the aforementioned factors has direct impacts related to the economic prosperity of Pennsylvania. In regards to wastewater treatment and disposal, Section 5 of the Clean Streams Law recommends a regional approach to wastewater management in part to accomplish the points raised in Section 4.

Both Alternatives 1 and 2 represent an increase in the total organic and hydraulic load on the Neshaminy Creek. However, through continued process optimization and monitoring it is expected that both these alternatives would continue to meet discharge permit limits and maintain the health of the stream. Alternative 3 eliminates local stream contamination by removing on-lot systems from service. Additionally, this alternative represents a regional approach to treatment. The HTMA AWTF is already a regional facility, and as such is consistent with the Clean Streams Law.

MUNICIPAL WASTELOAD MANAGEMENT (CHAPTER 94)

The HTMA annually prepares Chapter 94 Reports on behalf of the Township and is responsible for submission of these reports to DEP. The projections used in this plan are consistent with those included in the Chapter 94 Reports. The alternatives developed for this plan are consistent with the recommendations and findings of the Chapter 94 Reports.

TITLE II CLEAN WATER ACT PLANS

Title II, Section 210 of the Clean Water Act calls for wastewater treatment practices to utilize the best practicable wastewater treatment technologies available to prevent water and other

Alternatives presented in this plan are consistent with the goals of the new state water plan. Currently, DEP is identifying critical water planning areas where demand exceeds or is projected to exceed supply, create critical area resource plans or “water budgets”, and establish voluntary water conservation programs. As part of the updated plan, DEP projects a potential growth of 20% in the Delaware River Basin. This is consistent with population projections listed in this Plan Revision. A full copy of the plan is located at Pa DEP’s new State Water Plan website.¹

PENNSYLVANIA PRIME AGRICULTURAL LAND POLICY

The Pennsylvania Prime Agricultural Land Policy was established to protect prime agricultural land from irreversible conversions to uses that result in the loss of land as an environmental or essential food production resource. An Agricultural Security Area is a unit of land used for agricultural production. This designation prevents municipalities from enacting ordinances that restrict normal farming practices on existing farms, discourages condemnation of lands by eminent domain by any governmental agency, and make the lands eligible to participate in the State’s \$100 million Agricultural Easement program where development rights to lands are purchased by a local body to preserve farmlands. Inclusion of property in an Agricultural Security Area does not prevent a landowner from developing the land. These security areas affect the enforcement of ordinances developed under Act 247. The proposed alternatives do not impact Agricultural Security Areas.

COUNTY STORMWATER MANAGEMENT PLANS

The Montgomery County Stormwater planning by PA DEP as part of the Act 167 program is conducted on a watershed basis. The planning associated with the watersheds relating to the Township is not complete. All stormwater management plans associated with the implementation of the alternatives discussed in this report will follow the criteria and planning goals of both the Hatfield Township Zoning Ordinance. Implementation of any of the alternatives discussed will be consistent with the most up to date Montgomery County Stormwater Planning objectives.

WETLAND PROTECTION

Areas classified as wetlands per the US Fish and Wildlife Service’s National Wetlands Inventory (NWI) are identified in the DRSA in Figure II-4. The proposed alternatives will not impact any wetlands as identified by the NWI mapping. There do exist, however, several soils types that are identified as having hydric inclusions. A wetland field investigation will be performed in project areas that contain hydric soils. The wetland delineation will take place during the planning stage. Subsequent placement of the sewerage facilities in or through wetlands and/or streams will be minimized. If wetland encroachment cannot be avoided, DEP and US Army Corps of Engineers’ approval will be required. Construction through wetlands, if permitted, may require the use of a U.S. Army Corps of Engineer’s Nationwide Permit 12 and/or a DEP General Permit BDWM-

¹ <http://www.pawaterplan.dep.state.pa.us/StateWaterPlan/docroot/Default.aspx>

use funds, or through the collection of a program fee assessed per EDU estimated at \$50 per year.

To repair onlot systems, property owners may apply for low-interest loans from \$1,500 to \$25,000 available through PA Infrastructure Investment Authority and PA Housing Finance Authority. Contact 717-783-4487, or search www.pennvest.state.pa.us

F. IMMEDIATE AND PHASED IMPLEMENTATION

None of the alternatives require immediate or phased implementation.

G. PLAN IMPLEMENTATION

No new municipal departments or municipal authorities are required to implement the proposed plan. The Township and Authority's existing administrative personnel are adequate to implement the proposed alternatives.

VII. INSTITUTIONAL EVALUATION

A. EXISTING WASTEWATER AUTHORITIES

The Hatfield Township Municipal Authority owns and operates the existing collection and conveyance and wastewater treatment facilities. HTMA provides maintenance services for the entire system including collection and conveyance, pump stations, and the treatment facility. Additionally, the Township and HTMA will manage the on-lot systems and will administer the Sewage Management Program.

FINANCIAL AND DEBT STATUS

HTMA's Sewer Revenue Fund Budget is prepared annually and presented to the Authority for review. HTMA projects sufficient revenues from sewer rentals, tapping fees, and other sources to cover yearly expenditures as well as any expenditures relating to the alternatives in this Plan Revision. HTMA is not currently carrying any debt.

Expenditures include costs to operate and maintain the collection system and pumping stations, administer the sewer system, and treatment and maintenance costs associated with the wastewater treatment plant.

STAFF AND ADMINISTRATIVE RESOURCES

As a First Class Township, the Board of Commissioners consists of a five member board who are elected to a 4-year term. The Board of Commissioners meets on a monthly basis, and additionally as required, to review and set policy and to consider and act on other matters as appropriate. Additionally, numerous committees are established to provide recommendations and reports to the Board of Commissioners. These committees include the Civil Service Commission, Environmental Advisory Committee, Health, Hospital, and Education Authority, Industrial Development Authority, HTMA, Parks and Recreation Board, Planning Commission, Pool Advisory Board, Shade Tree Commission, and the Zoning Hearing Board.

The HTMA also consists of a five member board elected to five year, staggered terms. The Authority board meets on a monthly basis and additionally as required. HTMA is staffed by an Executive Director, AWTF Superintendent, Collection System Manager, and also retains a solicitor and consulting engineer.

LEGAL AUTHORITY

The Township currently has established Chapter 224 of its codified ordinances which regulates the use of its sanitary sewer system. The Township has the legal authority to implement selected wastewater management alternatives, and is fully empowered to enforce all ordinances, set user fees and take purchasing actions, raise capital for construction and operation and maintenance of facilities, and negotiate inter-municipal agreements.

ACTIVITIES REQUIRED TO PROVIDE ROW, EASEMENTS, AND LAND TRANSFERS

This Act 537 Sewage Facilities Plan was advertised for public comment with none received. The County Planning Commission was sent a copy of the 537 Plan for review. Comments received, and responses to the comments received are included in Appendix D. To implement the recommendations of this plan, the Township has formally adopted this Act 537 Sewage Facilities Plan by resolution after the public comment period. A signed and sealed Resolution will be included in Appendix A. Additionally, a preliminary agreement has been reached between Hatfield Township and Towamencin Township to serve the DRSA and portions of Basins 14 and 16.

ADOPTION OF OTHER MUNICIPAL SEWAGE FACILITIES (ACT 537) PLANS

The adoption of other municipal Act 537 plans is not necessary to implement the proposed alternative.

OTHER LEGAL DOCUMENTS

It is not anticipated that any other legal documents, besides those already discussed in this Plan, are required to implement the proposed alternative.

DATES ON IMPLEMENTATION SCHEDULE

All administrative and legal activities necessary to implement the proposed alternative are currently in place. Therefore, the Township is prepared to implement the Plan upon DEP approval.

D. PROPOSED INSTITUTIONAL ALTERNATIVE IDENTIFICATION

The Township intends to implement this Plan by enforcing an Onlot Management Ordinance.

VIII. JUSTIFICATION FOR SELECTED TECHNICAL AND INSTITUTIONAL ALTERNATIVES

A. IDENTIFICATION AND JUSTIFICATION OF CHOSEN TECHNICAL WASTEWATER ALTERNATIVES

Alternatives 1 and 2 are considered the best municipal wastewater collection, conveyance, and treatment alternatives to meet the needs of the Township.

EXISTING NEEDS

Implementation of Alternative 2 meets the existing needs of the Township by providing adequate oversight on both the DRSA and other on-lot systems throughout the Township. This alternative, in conjunction with the programs currently in place with the Montgomery County Health Department, will ensure ground and surface water protection.

Hatfield Township and HTMA will continue to explore with Alternative 3; however, since this alternative is somewhat dependant on development in the DRSA, a definitive implementation schedule cannot be established.

Existing capacity needs are currently being met by the ongoing Neshaminy Interceptor and Flow Equalization projects.

FUTURE NEEDS

Implementation of Alternative 1 will provide the Township and HTMA additional hydraulic and treatment capacity at its Advanced Wastewater Treatment Facility. This alternative, via a re-rate, would bring the AWTF flows up to 7.55 MGD ADF and 11.55 MGD MMF, and eliminate the possible Chapter 94 hydraulic overload.

Additionally, calculations included in Alternative 1 provide for a peak hourly flow capacity of up to 24 MGD. This flow is adequate to meet future need at this time, however ongoing flow analysis by HTMA will monitor peak flows and should it be necessary develop possible modifications for increased peak flow capacity.

OPERATION AND MAINTENANCE

The Township and HTMA is prepared to invest in additional O & M related resources, to meet future flow needs and administer the SMP.

COST EFFECTIVENESS

Implementation of Alternatives 1 and 2 were determined to be cost effective as neither alternative requires a capital upgrade.

Hatfield Township
Act 537 Sewage Facilities Plan
Official Plan – Update Revision
November 2010
July 2011
September 2011
October 2013

C. IMPLEMENTATION SCHEDULE

The Township intends to implement both selected alternatives upon approval of this plan revision by DEP. The anticipated schedule is listed below:

- Act 537 Plan Comment and External Review Period: March – April 2010
- Address Comments as necessary: April 2010
- Draft On-lot Management Ordinance: April – August 2010
- Adoption of On-lot Management Ordinance: September 2010
- Adoption of Act 537 Plan Revision: October 2010
- Submission of Act 537 Plan Revision to DEP: November 2010
- Receipt of DEP Comments to Act 537 Revision: January 2011 – August 2013
- Submission of Revisions to Act 537 Plan Revision: May 2011 – October 2013
- Receipt of DEP Approval to Act 537 Revision: Time Zero (T)
- Implementation of Alternative 2: T+3 months
- Submission of Water Quality Management (WQM) Permit Pt. I Application: T+9 months¹

- Submission of WQM Pt. II Application: 1 to 6 months following DEP approval of Pt. I Application²³

- Implementation of Alternative 1: 1 to 6 months following DEP approval of Pt. II Application⁴

¹ Pending review of current plant and most recent Chapter 94 data, HTMA will proceed with an incremental re-rate less than 7.55 MGD.

² Based on DEP timing for review, approval, and issuance of new limits. Required to determine actual toxic limits since they are not available through the PTR process

³ Timing of this submission is dependent on final limits received and the scope of the application. This could range from a Design Engineers report only to a preliminary design for a process upgrade (necessitated by lower limits)

⁴ Depends on (2) and the scope of any required project

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PLAN SUMMARY

INTRODUCTION

Upper Gwynedd Township (UGT or The Township) is currently served by two wastewater treatment plants (WWTP). These are the UGT WWTP and the Towamencin Municipal Authority (TMA) WWTP. The TMA WWTP was formerly known as the Upper Gwynedd Towamencin Municipal Authority (UGTMA) WWTP. UGT owns and operates the UGT WWTP. TMA owns and operates the TMA WWTP.

UGT has a sanitary sewer collection system that serves the entire Township. A ridge line runs mostly north south through UGT and divides the Township into two service areas. The ridge line starts just north of where Church Road intersects with Hancock Road and extends south to a point just west of the intersection of Broad Street and Morris Road. The UGT WWTP serves the portion of UGT that is east of this ridge line. The TMA WWTP serves the portion of UGT west of the ridge line. Reference is made to the map attached in Appendix A.

The UGT WWTP service area has two main interceptor sewer lines that collect flow. These are the Southwest Interceptor and the East Interceptor. The Kriebel Road Interceptor serves the portion of the UGT service area that flows to the TMA WWTP. Once again, reference is made to the map in Appendix A.

A. SERVICE AREA ISSUES

UGT feels that it will better serve the needs of its residents and other customers by treating all flow from the Township at the UGT WWTP. This consolidation of flow will lead to more efficiency for UGT and is in the best interests of its residents.

B. CORRECTIVE ALTERNATIVES

UGT will physically divert a significant majority of flow in the Township that currently goes to the TMA (formerly Upper Gwynedd Towamencin Municipal Authority (UGTMA)) WWTP, to the UGT WWTP. This will require modifications to the UGT collection system and the UGT WWTP. These modifications are described in Section V.

As will be documented in this Act 537 Plan-Special Study (Special Study or Act 537 Plan), an Agreement was negotiated and finalized between UGT and Towamencin Township (TT) to divert UGT flow that currently goes to the TMA WWTP, to the UGT WWTP. In this Agreement, TT agreed to support UGT's efforts to divert flow. This Agreement was the document which provided for UGT to leave the UGTMA. The Agreement is attached in Appendix B.

C. COST OF IMPLEMENTING CORRECTIVE ACTION ALTERNATIVES

Over the next approximately four years, it is estimated that diverting UGT's flow will cost \$27,000,000 and require approximately fifteen million dollars in financing (reference is made to Section VI). However, there is significant, long term benefit that will accrue to UGT to help pay for this project.

Very significant expenditures will be required in the future to maintain and upgrade the TMA WWTP and the Kriebel Road Interceptor, and also to meet anticipated future, stricter Pennsylvania Department of Environmental Protection (PADEP) discharge limits. UGT's share of these costs would be significant. An independent study authorized by both UGT and TT was performed by a nationally recognized engineering consulting firm, Hazen & Sawyer. Based on this study, the UGT share of the cost is \$33,800,000. Instead of spending money at the TMA WWTP and on the Kriebel Road Interceptor, UGT will invest in its own collection system and WWTP to better serve its customers.

In addition, UGT received \$7,100,000 as part of the legal agreement included in Appendix B which will help pay for the Flow Diversion project.

D. MUNICIPAL COMMITMENT

As stated above, UGT has finalized a legal agreement with TT to provide for the flow diversion project. UGT is fully committed to this project. UGT is making a commitment to adopt annual budgets and secure the funding necessary to successfully implement the project. UGT plans on a bond issue to help finance the project.

E. IMPLEMENTATION SCHEDULE

The project schedule is attached as Appendix C. This schedule includes all significant milestones and incorporates all regulatory and other outside entity approval.

F. AGENCY AND PUBLIC COMMENT DOCUMENTATION

UGT will make sure that all required public and agency comments are solicited. This includes a 30 day public comment period, comments from the Montgomery County Planning Commission and Health Department, and the UGT and TT Planning Commissions. Evidence of soliciting comments will be provided including Proof of Publication for the public comment period. UGT will address all comments and will include both the comments and responses to comments prior to submission to the PADEP. After addressing comments, UGT and TT will adopt resolutions prior to sending the completed Special Study to the PADEP for review and approval.

G. REFERENCE TO APPENDICES OF SUPPORTING DOCUMENTATION

The following required supporting documentation has been included in Appendices to this Report:

- Appendix D - Montgomery County Planning Commission and Health Department notification
- Appendix E - UGT and TT Planning Commissions notification
- Appendix F - Proof of Publication of Public Notice
- Appendix G – Agency and Public Comments and the municipal response to comments
- Appendix H - Original signed and sealed Resolutions by UGT and TT
- Appendix I – PADEP Act 537 Plan Content Checklist

Please note that the documentation for Appendix G and Appendix H will not be available until after the comment periods.

I. PREVIOUS WASTEWATER PLANNING

I.A SEWAGE FACILITIES PLANNING

In order to establish wastewater facility planning objectives and needs, a review of previously completed wastewater planning information is necessary. In addition, existing and proposed wastewater treatment planning and projected growth for the service area must be considered.

Previous wastewater planning for Upper Gwynedd Township has included previous Act 537 Plans, two Act 537 Plan Special Studies, various Sewage Facilities Planning Modules for individual development projects, annual Chapter 94 Wasteload Management Reports, and a Corrective Action Plan (CAP).

The most recent Act 537 document on record is the Act 537 Plan - Special Study done as part of UGT's CAP. This Special Study was published for public comment in June 2016 and was submitted to PADEP in August 2016 for review and approval.

This Act 537 Plan - Special Study focuses on the Flow Diversion project which will divert flow from UGT that currently goes to the TMA WWTP, to the UGT WWTP.

II. PHYSICAL DESCRIPTION OF PLANNING AREA

II.A PLANNING AREA

Sewage collection in Upper Gwynedd Township is delineated into two service areas. (Refer to Appendix A). The service area east of the ridge line flows to the UGT WWTP. Flow to the west of the ridge line flows to the TMA WWTP.

A significant majority of the flow that currently goes to the TMA WWTP is proposed to be diverted to the UGT WWTP. The service area east of the ridge line will continue to flow to the UGT WWTP. Flow from the service area west of the ridge line is proposed to be diverted to the UGT WWTP.

II.B WETLANDS AND 100 YEAR FLOOD PLAIN

The diversion of flow that currently goes to the TMA WWTP, to the UGT WWTP will require two pump stations and two force mains. This will be described in greater detail in Section V. The proposed pump stations and force main routes are shown in Appendix A and Appendix J.

II.B.1 WETLANDS

Construction of the force main in the area adjacent to Musket Drive and in areas between North Wales Road and the UGT WWTP is expected to temporarily disturb existing wetlands. When the design is being prepared, a formal wetlands delineation for all disturbed areas will be performed. Any construction activity disturbing wetlands will be

performed in accordance with the Permit conditions issued by the Montgomery County Conservation District. Construction will be done while minimizing the impact to wetlands. Wetlands will be restored after construction is completed to minimize impact on the environment.

II.B.2 100 YEAR FLOOD PLAIN

The pump stations will be constructed outside the 100 year flood plain. Some force main construction will occur within the flood plain. Any manholes located within the flood plain will have water-tight covers or will be raised to a height above the 100 year flood plain elevation.

III. EVALUATION OF EXISTING WASTEWATER FACILITIES

III.A UPPER GWYNEDD TOWNSHIP WASTEWATER TREATMENT FACILITIES

Domestic and industrial wastewater generated within Upper Gwynedd Township is treated at the Upper Gwynedd Township Wastewater Treatment Plant and the Towamencin Municipal Authority Wastewater Treatment Plant.

The approximate dividing line for the two service areas within UGT is located on a ridge line shown in Appendix A. The flow east of the ridge line flows to the UGT WWTP and the flow to the west of the ridge line flows to the TMA WWTP. This Special Study includes a description of only the UGT WWTP. A flow schematic of the existing UGT WWTP is included in Appendix K.

The WWTP includes the following treatment unit operations:

- Headworks
- Flow Equalization
- Primary Clarification
- Activated sludge secondary treatment
- Tertiary phosphorus treatment
- Secondary clarification
- UV disinfection

The UGT WWTP has adequate capacity to handle the existing flow. Adequate capacity also exists for projected, future growth from new development. However, additional capacity will be needed for the Flow Diversion. This will be discussed further in Sections IV and V.

Using flow data from the UGT 2015 Chapter 94 report, the current, available capacity is 0.803 MGD and the projected five year future, available capacity is 0.643 MGD. The available capacity does not factor in capacity needed for the flow diversion.

There have been no operating problems with the UGT WWTP. There is no expansion or upgrade of treatment processes currently in progress. There will be treatment plant modifications that are needed to handle the flow being diverted. This will be discussed in Sections V and VI.

UGT WWTP

Location:	Township Line Road west of Swedesford Road Upper Gwynedd Township
NPDES Permit No.:	PA 0023256
Clean Streams Law Permit No.	WQM Permit #4691420
Receiving Stream & Classification:	Wissahickon Creek; TSF (Trout Stocking) MF (Migratory Fishes)
Hydraulic Design Capacity:	6.5 Million Gallons Per Day (MGD)

Annual Average Flow for Effluent

Limit Calculations: 5.7 MGD

A complete copy of the current NPDES permit for the Upper Gwynedd WWTP is included in Appendix L.

III.B UPPER GWYNEDD TOWNSHIP COLLECTION SYSTEM

The UGT collection system serves the entire Township. As stated earlier, UGT is currently served by two wastewater treatment plants. The portion of the UGT collection system that flows to the TMA WWTP is located west of the ridge line. The portion of the collection system that flows to the UGT WWTP is located east of the ridge line. The UGT collection system is located entirely within the Township and is owned by Upper Gwynedd. Reference is made to Appendix A which includes the UGT Collection System.

III.B.1 UGT WASTEWATER TREATMENT PLANT SERVICE AREA

The UGT WWTP service area is served by two main interceptors.

1. The Southwest Interceptor (known as the Northwest Interceptor north of Sumneytown Pike) service area includes the central and southwestern portions of the Township and includes flow from North Wales Borough and portions of Worcester, Whitpain, and Montgomery Townships. The Southwest Interceptor starts north of Sumneytown Pike as an

18” pipe. It changes to a 24” pipe once it crosses Sumneytown Pike and then gradually increases in size until it becomes a 42” sewer line before connecting to the UGT WWTP.

Most flow through the Southwest Interceptor is by gravity. There are also several pump stations which are used to get flow to this interceptor.

2. The East Interceptor service area serves the eastern portion of the Township and a small portion of Lower Gwynedd Township. Wastewater from a portion of the Foulkeways community in Lower Gwynedd Township is pumped via a force main to this interceptor. The East Interceptor starts out as a 10” sewer line, increases in size to a 15” line, and finally to an 18” sewer line. The East Interceptor flows to the Southwest Interceptor just upstream of where the Southwest Interceptor connects with the UGT WWTP.

III.B.2 TMA WASTEWATER TREATMENT PLANT SERVICE AREA IN UGT

The TMA service area in UGT is served by the Kriebel Road Interceptor (KRI). All flow from UGT to the TMA WWTP is by gravity.

The KRI starts in UGT, north of Sumneytown Pike and east of Route 363 (Valley Forge Road). The KRI starts as a 10” pipe and changes to a 15” pipe just before it crosses Sumneytown Pike. Once the KRI crosses Route 363, wastewater from Towamencin Township flows to the KRI. The pipe increases in size to 20” before ending at the TMA WWTP.

III.B.3 COLLECTION SYSTEM DIVERSION AREAS

There are four points where the flow from UGT crosses Valley Forge Road (Route 363) from UGT into TT. These four crossing points are shown in Appendix A on the UGT Collection System map.

The first crossing point is just south of the Sunney Forge Shopping Center located at the corner of Sumneytown Pike and Valley Forge Road. This crossing point contains approximately eighty to eighty five percent (80-85%) of the total flow from UGT to the TMA WWTP.

The second crossing point is at Jacks Lane. This contains approximately six percent (6%) of the total flow from UGT to the TMA WWTP.

The third crossing point is located at Anders Road. This contains the smallest amount of flow of the four crossing points, approximately one percent (1%) of the total flow.

The fourth crossing point is located just north of the Pennsylvania Turnpike bridge on Valley Forge Road. This crossing point contains approximately eleven percent (11%) of the total flow.

Flow from the first and the fourth crossing points is what is being proposed to divert to the UGT WWTP.

III.B.4 COLLECTION SYSTEM ISSUES

Sections of the UGT collection system that flow to the UGT WWTP and the TMA WWTP have experienced Sanitary Sewer Overflows (SSO) in the past. UGT has been working on reducing Infiltration & Inflow (I/I) for over 10 years. During this time, UGT has greatly reduced the quantity of I/I entering the system and has also greatly reduced the number of SSO. In fact, SSO have been eliminated at certain manholes that previously experienced SSO. The work done by UGT to improve the operation of its collection system is described in detail in a Corrective Action Plan (CAP) that UGT submitted to the PADEP. The most recent update was submitted to PADEP in February 2016. A copy of the UGT CAP is included in Appendix M.

In addition to the CAP submitted by UGT, TMA submitted two CAPs to the PADEP to address SSO issues in the Kriebel Road Interceptor and the TMA WWTP Influent Pump Station. This is relevant to UGT because the service area located in UGT that flows to the TMA WWTP flows through the KRI. The KRI has also experienced SSO. TMA is working on reducing I/I in the KRI and the TT collection system to work towards elimination of SSO in the KRI and TT collection system.

Diversion of UGT flow from the KRI and the TMA WWTP will greatly reduce the hydraulic loading on the KRI and will also greatly reduce, if not eliminate, SSO on the KRI. This is a significant environmental benefit associated with UGT diverting flow.

IV. FUTURE GROWTH AND LAND PLANNING

IV.A EXISTING PLANNING

As stated in Section I, previous wastewater planning for Upper Gwynedd Township has included previous Act 537 Plans, two Act 537 Plan Special Studies, various Sewage Facilities Planning Modules for individual development projects, annual Chapter 94 Wasteload Management Reports, and a Corrective Action Plan.

The most recent Act 537 document on record is the Act 537 Plan – Special Study done as part of UGT’s CAP. This Special Study was published for public comment in June 2016 and was submitted to PADEP in August 2016 for review and approval.

IV.B GROWTH

Growth and new development in Upper Gwynedd Township are controlled and regulated by land use and zoning regulations. A copy of the current Upper Gwynedd Township Zoning map is included in Appendix N.

Upper Gwynedd Township is primarily built out and there is not much land available for development. There is, however, some development that is currently in progress and other development being planned in the future. Current and future development in UGT is contained in the Connection Management Plan (CMP) included in Appendix O. The CMP is a summary of existing and future development in the entire UGT service area, delineated by the individual

interceptor to which a particular development would flow. The CMP does not include the flow being diverted. This issue is addressed separately.

IV.B.1 EXISTING GROWTH

As described earlier, UGT is served by three main interceptors. The Southwest and East Interceptors currently flow to the UGT WWTP. The western section of the Township that flows to the TMA WWTP is served by the Kriebel Road Interceptor.

The CMP includes development in all three interceptor service areas. The CMP includes the name of the development, the number of connections (EDUs), the state of approval in the PADEP planning process, and the time frame for connection.

The CMP includes the following growth in each of the three interceptor service areas:

- East Interceptor – 50 EDUs
- Southwest Interceptor 32 - EDUs
- Kriebel Road Interceptor – 40 EDUs

The total existing growth is 122 EDUs. Using the UGT Act 537 flow number per EDU, the total projected flow is 28,914 gallons per day (GPD).

IV.B.2 FUTURE GROWTH

The CMP also includes other potential development projects that are not included in the previous section above because there are no plans at this point for these projects to request connection to the UGT system. However, for purposes of being conservative, the following is a more detailed discussion of these other projects with no near term plans to connect to the UGT system.

SOUTHWEST INTERCEPTOR

The Southwest Interceptor potential projects shown in yellow in the CMP include 1,203 potential EDUs (miscellaneous on lot systems are included in the 40 EDUs above). The Merck-Phase 5, Hancock Road, and Old Church Road projects are not being included because it is not felt that these EDUs will be connected in the next five years, if at all. The EDUs listed for Montgomery Township and Worcester Township are based on the legal agreements that UGT has with these two neighboring municipalities. At this point there are no new developments from Montgomery Township that are projected to request connection to UGT in the next five years. Once again, in the interest of being conservative, 50 EDUs are included for purposes of evaluating the capacity of the UGT WWTP.

KRIEBEL ROAD INTERCEPTOR

The CMP shows a total of 92 EDUs that are shown in yellow (the miscellaneous on lot systems are already included in the 40 EDUs listed above in Section IV.B.1 for the KRI). The 92 EDUs include the three Martin properties plus 20 EDUs for Lehigh Valley Dairy.

The total for future growth is 142 EDUs. Using the UGT Act 537 flow number per EDU, the total projected flow is 33,654 gallons per day (GPD).

IV.B.3 ULTIMATE BUILD OUT

As has been described above, there is the potential for additional EDU connections that are not included in Sections IV.B.1 and IV.B.2, but are included in the CMP. The additional build out EDUs are located in the Southwest Interceptor service area. These additional EDUs include the following:

- Old Church Road - 1 EDU
- Hancock Road -50 EDUs
- Worcester Township - 490 EDUs
- Montgomery Township -10 EDUs
- Merck Building 5-652 EDUs

The total of these ultimate build out EDUs is 1,203 EDUs. Regarding Merck and Montgomery Township, it is highly unlikely that these will be connected in the next five years.

Merck has already been allocated capacity that is not being used. This available capacity is already factored into the UGT WWTP available capacity in Section III.A. Even if Merck connected all of the 652 EDUs (154,524 GPD), Merck's unused, reserve capacity would still be over 1,500,000 GPD.

IV.B.4 GROWTH SUMMARY

The total for the existing (122 EDUs) and future (142 EDUs) growth is 264 EDUs. Using the Act 57 flow number of 237 GPD, the total projected flow for the next five years is 62,568 GPD. This growth is accounted for in the UGT Chapter 94 report. The current and five year available capacities referenced in Section III.A already reflect the 62,568 GPD of growth.

If the ultimate buildout potential connections from Old Church Road, Hancock Road, and Worcester Township are included, this is another 541 EDUs. However, 385 of the Worcester EDUs and 30 of the Hancock Road EDUs are already factored into the available capacity based on the 2015 Chapter 94 report. Therefore, the additional EDUs from ultimate build include Old Church Road (1), Hancock Road (20), and Worcester (105) which is 126 EDUs. This equates to 29,862 GPD. In addition, it is also noted that Montgomery Township has approximately 120,000 GPD of unused capacity that is included in the ultimate build out flow projection.

Therefore, the projected flow for ultimate build out is 29,862 GPD plus 120,000 GPD which equals 149,862 GPD. For purposes of this Special Study, to be conservative, the flow being used for ultimate build out, future growth is 250,000 GPD

As stated above in Section III.A, the UGT WWTP has current, available capacity of 803,000 GPD and a five year future, available capacity of 643,000 GPD. Subtracting 250,000 GPD leaves the UGT WWTP with 393,000 GPD of future, available capacity. Therefore, there is

adequate capacity to accommodate the projected ultimate build out. UGT wants to maintain this capacity, in addition to the capacity needed for the flow diversion.

The additional capacity needed for the Flow Diversion project is addressed in Section V.A.

V. ALTERNATIVES FOR WASTEWATER DISPOSAL FACILITIES

There are two alternatives for Upper Gwynedd Township to treat flow generated in the western part of the township that currently flows to the TMA WWTP. The best and preferred alternative is for UGT to divert a significant majority of flow that currently flows to the TMA WWTP, to the UGT WWTP. The second alternative is to continue to have UGT wastewater treated at the TMA WWTP. The following is a discussion of the two alternatives.

V.A DIVERT FLOW TO UGT WWTP

The UGT Flow Diversion project will divert a significant majority of wastewater generated in Upper Gwynedd Township and currently conveyed to the TMA WWTP, to the UGT WWTP. The average annual daily flow planned on being diverted is approximately 1.05 MGD, inclusive of 0.1 MGD Merck reserve capacity at the TMA WWTP. The remaining flow that will continue to go to the TMA WWTP is 0.12 MGD.

The Flow Diversion project will require additional capacity at the UGT WWTP as well as two pump stations and two force mains to convey the diverted wastewater to the UGT WWTP.

V.A.1 WASTEWATER TREATMENT PLANT

The current permitted capacity of the UGT WWTP is 5.7 MGD average annual daily flow and 6.5 MGD maximum monthly flow. Therefore, additional capacity needs to be added to the UGT WWTP to handle the increase in both average annual flow and maximum monthly flow. Once again, it is noted that the additional capacity needed for the Flow Diversion project is in addition to the capacity discussed in Section IV.B.4.

The existing UGT WWTP is described in Section III.A. In order to accommodate the flow to be added with the flow diversion, additional capacity for several unit operations needs to be provided.

The unit operations requiring additional capacity are as follows:

- Influent pumping
- Headworks
- Secondary clarification
- UV Disinfection
- Effluent pumping

The following provides more detail on the UGT WWTP modifications needed to treat the additional flow being diverted.

Wastewater Treatment Plant Capacity

The WWTP is presently rated for an average annual flow of 5.7 MGD, a hydraulic design capacity of 6.5 MGD, a peak hour flow of 15 MGD and an organic design loading of 10,842 lbs. As part of the flow diversion project, Upper Gwynedd Township will be requesting an average annual flow of 7.0 MGD, a hydraulic design capacity of 8.0 MGD, a peak hour flow of 22.5 MGD and an organic design loading of 11,676 lbs. Note that the peak hour will be based on the combined hydraulic design capacity of the two pump stations.

Appendix K identifies the proposed modifications at the Upper Gwynedd WWTP.

Modifications at Headworks (Influent) Building

The existing Auger Monster will be replaced with a new screen. 20 MGD will be able to flow through the two indoor screens (one existing and one new), grit chambers and 24-inch parshall flume. Flows in excess of 20 MGD will flow by gravity to the existing screen outside the Headworks Building. The parshall flume can be calibrated up to 21.39 MGD. To measure all peak flows, a second flow meter will be installed upstream of the headworks building for utilization when flows exceed the rated capacity of the existing parshall flume. Additional grit removal equipment is not proposed because any flow not proceeding through the existing grit removal units will occur after the first flush has entered the WWTP and all that flow will proceed into primary clarifiers.

The new force main will connect into the existing headworks.

Modifications to Influent Pumping

Presently, the WWTP can pump 19 MGD with one (the largest) pump out of service. The influent pumping capacity will be increased by 5 MGD to convey the anticipated peak instantaneous flow.

Modifications to the Aeration Tanks and Clarifiers

The aeration tanks have adequate capacity to treat the projected organic load.

An additional circular clarifier similar to the two existing 80' diameter circular clarifiers is proposed to treat peak flows from Aeration Tanks 3 through 6.

Modifications to Effluent Disinfection

The WWTP presently has two parallel channels with UV light disinfection. Each channel is capable of disinfecting in excess of 10 MGD. A third parallel channel with a capacity of 10 MGD is proposed for disinfecting peak flows.

Modifications to Effluent Pumping

Each existing effluent pump can pump 8.55 MGD. There are four pumps, so the capacity of the pump station with one pump out of service is 25.7 MGD. This exceeds the anticipated peak hour flow. The control panel and wiring do allow all four pumps to be operated for a capacity in excess of 34 MGD, which far exceeds any foreseeable

peak instantaneous flow. If a pump was out of a service, a portable self-priming pump could be placed at the effluent pump station.

Modification of the outfall pipe is anticipated to incorporate a second effluent flow meter to be utilized for measuring peak flows in excess of the rated capacity of the existing effluent flow meter.

Physical space is available at the existing WWTP to add the additional facilities required at the WWTP.

UGT proposes an annual average daily flow of 7.0 MGD and a maximum monthly flow of 8.0 MGD. The 7.0 MGD annual average daily capacity is 1.3 MGD more than currently exists. The 1.3 MGD figure includes 0.95 MGD of existing UGT flow being diverted from the TMA WWTP, plus 0.1 MGD of Merck reserve capacity at the TMA WWTP, plus 0.25 MGD of growth as summarized in Section IV.B.4.

As noted in the previous paragraph, the annual average flow being diverted is 0.95 MGD from the two crossing points referenced. For the other two crossing points at Jacks Lane and Anders Lane, the flow that will continue to flow to the TMA WWTP will be 0.11 MGD and 0.01 MGD, respectively. The total remaining flow from UGT to the TMA WWTP will be 0.12 MGD.

V.A.2 COLLECTION SYSTEM

The flow currently generated in UGT flows to the TMA WWTP by gravity. Therefore, to divert the flow to the UGT WWTP requires pump stations. As discussed in Section III.B.3, there are four points where flow from UGT crosses Valley Forge Road into Towamencin

Township. The flow from two of the four crossing points is being diverted. These are the points located just south of the Sumney Forge Shopping Center at the corner of Sumneytown Pike and Valley Forge Road and just north of the Pennsylvania Turnpike Northeast Extension on Valley Forge Road. Approximately 93% of the total flow that currently flows to the TMA WWTP is contained in these two crossing points.

V.A.2.1 PUMP STATIONS

The flow from each of the two crossing points from which flow will be diverted requires pump stations to pump the flow to the UGT WWTP. These pump stations are shown in Appendix J. The pump stations will be hereinafter referred to as the Valley Forge Road North (VFRN) Pump Station (just south of the Sumney Forge Shopping Center) and the Valley Forge Road South (VFRS) Pump Station (just north of the Turnpike). The VFRS Pump Station will be located in Towamencin Township.

The VFRN Pump Station will have a hydraulic design capacity of 6.0 MGD. The VFRS Pump Station will have a hydraulic design capacity of 1.5 MGD.

UGT has acquired the property needed for both the VFRN Pump Station and the VFRS Pump Station.

A list of all easements required for pump station and force main construction is included in Appendix J.

V.A.2.2 FORCE MAINS

The two pump stations will pump flow through separate force mains. Appendix A and Appendix J show the route of each of the two force mains.

The force main route from the VFRN Pump Station will be located mostly in existing Township easements. The force main route shown in Appendix A and Appendix J indicates the sections of the force main in private property and in existing Township easements. There is only a relatively small section of the force main that runs through private property and requires easements from the property owners. This force main is anticipated to be at most 24", but portions may be 20" diameter pipe.

As with the VFRN Pump Station, the VFRS Pump Station uses mostly existing Township easements. This force main is anticipated to be an 8" diameter pipe.

The Township will obtain easements for the force mains, where necessary, through agreements with property owners or, where necessary, by eminent domain proceedings.

To reduce construction costs, the two force mains combine on Garfield Avenue. The combined force main then continues to the UGT WWTP. This force main is anticipated to be at most 24", but portions may be 20" diameter pipe.

The capacity of the force main from the VFRN Pump Station is 6.0 MGD. The capacity of the VFRS Pump Station is 1.5 MGD. The capacity of the force main that will handle the combined flow is 7.5 MGD.

We also note that UGT will continue with its I/I reduction program to reduce the amount of flow that currently flows to the UGT WWTP and the flow that will be diverted.

UGT's I/I program is described in detail in the UGT CAP attached as Appendix M. We note that the existing UGT collection system will not be used to convey the flow being diverted.

V.B CONTINUE TREATMENT AT TMA WWTP

The other option is effectively to do nothing and have UGT flow continue to be treated at the TMA WWTP. This option was determined to not be beneficial to UGT.

V.C LEGAL AGREEMENT TO DIVERT FLOW

Upper Gwynedd Township and Towamencin Township discussed and evaluated diverting flow for several years. The product of these discussions was execution of a legal agreement which provides for UGT to divert flow. Both Townships are party to this legal agreement. We note that the agreement does provide for continuing to treat UGT flow at the TMA WWTP should circumstances arise which would prevent flow diversion from occurring. UGT has determined that diverting flow is the best option and is proceeding with this option.

A copy of the legal agreement is included in Appendix B.

We make note of the fact that even with the Flow Diversion option, which UGT has chosen to implement, a small percentage of UGT wastewater will continue to be treated at the TMA WWTP. Diverting all flow was determined to not be cost effective or beneficial to UGT and its rate payers.

VI. EVALUATION OF WASTEWATER DISPOSAL ALTERNATIVES

As stated in Section V, Upper Gwynedd Township has chosen the alternative to divert flow from the TMA WWTP to the UGT WWTP. As will be discussed in this section, it has been determined that diverting flow is the most cost effective and beneficial option for UGT to pursue.

VI.A CONSISTENCY DETERMINATION AND RESOLUTION

As demonstrated throughout this Act 537 Plans – Special Study, the proposed alternative to divert flow is consistent with the following:

- **Clean Streams Law**-The Flow Diversion project will likely eliminate SSO from the Kriebel Road Interceptor and reduce the environmental impact of the SSO. UGT currently complies with its NPDES permit and construction of the additional facilities at the UGT WWTP will continue to allow UGT to maintain NPDES permit compliance after the flow is diverted

- **Clean Water Act-** UGT currently complies with its NPDES permit and construction of the additional facilities at the UGT WWTP will continue to allow UGT to maintain NPDES permit compliance after the flow is diverted
- **Municipal Wasteload Management Plans-**The additional facilities proposed for construction at the UGT WWTP will provide for UGT to treat the additional flow and loading resulting from the Flow Diversion project and maintain NPDES permit compliance.
- **UGT Corrective Action Plan-**The Flow Diversion project will improve operation of the UGT collection system by likely eliminating SSO on the Kriebel Road Interceptor and in the UGT collection system that feeds into the Kriebel Road Interceptor. The new force mains will be constructed using the latest technology and construction methods to minimize I/I in the new system.
- **UGT Chapter 94 Report-** The additional facilities proposed for construction at the UGT WWTP will provide for UGT to treat the additional flow and loading resulting from the Flow Diversion project and maintain NPDES permit compliance.
- **Comprehensive Plans developed under PA Municipalities Planning Code-**The Flow Diversion project is consistent with all Township planning documents.
- **Anti-degradation Requirements of Chapters 93, 95 and 102-**The additional facilities being constructed at the UGT WWTP will provide for continued NPDES permit compliance.
- **State Water Plan-**The additional facilities will continue to provide for discharge of a high quality effluent discharging to the Wissahickon Creek.

- **PA Prime Agricultural Land Policy**-This is not applicable to this project.
- **Plans adopted under the Storm Water Management Act**-All construction work for the WWTP, pump stations, and force mains will be in accordance with UGT and Montgomery County Storm Water Management Plans.
- **Wetland Protection under Chapter 105**-A wetlands delineation for the project is being performed. The construction will be done in a manner to comply with regulatory requirements, minimize the impact to wetlands, and provide for wetlands restoration.
- **Pennsylvania Natural Diversity Inventory (See Appendix P)** The PNDI for this project has already been performed and is included in Appendix P. No known conflicts were found.
- **Pennsylvania Historic Preservation Act**-This project will not have any impact related to this act.

VI.B ALTERNATIVE DISCUSSION

The following is a discussion of the alternatives evaluated:

- a. Upper Gywnedd Township diverts approximately 950,000 gallons per day (0.95 MGD) that currently flows to the TMA WWTP, to the UGT WWTP

UGT diverting flow from the TMA WWTP to the UGT WWTP is the recommended alternative in this Act 537 Plan – Special Study. It is consistent with all the items listed in Section VI. A for the following reasons:

- The existing UGT WWTP has adequate capacity to handle the build out for all development included in the Connection Management Plan and as discussed in Section IV.B.4. The 0.95 MGD being diverted will require additional capacity at the existing UGT WWTP. UGT will construct the facilities necessary to handle the average annual and peak flows. This is discussed in Section V.A.1.

Flow diversion also requires that two pump stations and two force mains be constructed to divert the flow that currently goes to the TMA WWTP, to the UGT WWTP. The property for both of the pump stations has already been acquired. This is discussed further in Section V.A.2
- The proposed force main routes utilizes mostly existing Township rights of way. There are very few additional permanent easements required. The required easements are listed in Appendix J. The largest easement will be through Wissahickon Valley Watershed Association (WVWA) property. UGT has already met with the WVWA and they are supportive of the Flow Diversion project. We note that UGT already has sewer lines in WVWA property that were previously negotiated.
- The proposed force main routes involve a minimal amount of environmental impact and construction on private property.
- All permits and approvals will be obtained for construction of the WWTP facilities, the dedicated force mains, and the two pump stations.

- Flow Diversion will greatly reduce the hydraulic loading in the Kriebel Road Interceptor. In turn, this will greatly reduce, if not eliminate, the SSO that have occurred in the past on the KRI.
- The additional flow being diverted to the UGT WWTP will provide significant economies of scale at the UGT WWTP and will reduce rate increases for UGT customers that could occur in the future.
- Flow Diversion will give UGT control over almost all of the wastewater treatment needs of the UGT community.
- The alternative to divert flow will be supportive of growth in UGT. Although UGT is mostly built out, there is growth that is projected. In addition, should certain existing properties be re-developed this would create additional growth. In the UGT service area that flows to the TMA WWTP, there is a connection prohibition due to SSO on the KRI. By diverting flow UGT will construct the new pump stations and force mains with adequate capacity to likely eliminate SSO in the new system, eliminate the connection prohibition, and facilitate future growth in UGT.
- Several years of negotiation went into the legal agreement to provide for UGT to divert flow. This required considerable time and effort on the part of both UGT and TT. All of this led to UGT determining that diverting flow was the best alternative for UGT.

We also note that UGT diverting flow will provide the TMA with the opportunity to better serve their customers in the future. Given the future facilities that will be

needed at the TMA WWTP to upgrade the WWTP and meet stricter, future permit limits, TMA will be able to tailor the size of the new facilities to its future customer base.

- b. UGT does nothing and UGT flow that is currently treated at the TMA WWTP will continue to be treated there.

Although this alternative is feasible and is addressed in the legal agreement providing for UGT to divert flow, it does not support the long term best interests of Upper Gwynedd Township and its rate payers for a number of reasons:

- UGT will continue to not have control over a significant portion of the wastewater treatment needs of the UGT community
- Without a significant expense to increase the capacity of the KRI, SSO would likely continue to occur. This would continue to result in regulatory problems with the PADEP.
- The project is economically beneficial to UGT in the long run. This is discussed further in Sections VI. D and VI. E below.

VI.C ALTERNATIVE EVALUATION TO APPLICABLE STANDARDS

All proposed construction for the UGT WWTP, the two new pump stations, and the new force mains will be in accordance with the Upper Gwynedd Township “Construction

Repair and Replacement Requirements for Sanitary Sewers and Appurtenances and Detail Drawings”, dated October 2016, and the Pennsylvania Department of Environmental Protection “Domestic Wastewater Facilities Manual”, 362-0300-001, October 1997”.

The existing UGT WWTP has an excellent record of compliance with the requirements of its existing NPDES permit. After construction of the additional UGT WWTP facilities to handle the diverted flow is completed, UGT will comply with a new NPDES permit issued by PADEP.

VI.D CAPITAL COST AND FUNDING EVALUATION

- a. As stated above in this Section, the diversion of flow is the alternative chosen by UGT. This alternative requires the construction of additional treatment facilities at the UGT WWTP, two new pump stations, and new force mains.
 1. The capital cost analysis for the Flow Diversion project is included in Appendix Q. The cost includes engineering and a 20% contingency. Construction of the new facilities needed to divert flow is scheduled to be completed within approximately four years. This is discussed further in Section VIII.

2. UGT plans on funding the cost through two means. Work on the Engineering and regulatory aspects of the project has already been started. UGT plans on funding this work through inclusion in its annual budgeting process. Once the project gets to the construction phase, the remaining Engineering cost will be included with the construction cost. This will be funded by a 15 to 25 year (depending on market conditions) bond issue that UGT will obtain in the amount of approximately fifteen million dollars. Spreading the cost of the project over 15 to 25 years will reduce the economic impact on customers. Therefore, even though construction is scheduled to be completed in approximately four years, the cost to UGT's customers will be spread out over 15 to 25 years.
 3. There are two other significant funding sources for the project available to UGT. First, as part of the legal agreement between UGT and TT, UGT was paid \$7,100,000 upon leaving the TMA (formerly UGTMA). The second source is \$4,900,000 in sewer reserve funds held by UGT.
- b. Do nothing and continue to treat UGT flow at TMA WWTP.
1. Although there are no costs to divert flow for this option, there are still very significant costs associated with UGT continuing to have their flow treated at the TMA WWTP. UGTMA, prior to becoming the TMA, was jointly owned and operated by UGT and TT. When the UGTMA was defeased, UGT was

no longer an owner, but rather just a customer. If UGT stays as part of the TMA it would incur very significant future, long term costs for upgrade of the TMA WWTP and the Kriebel Road Interceptor. An independent engineering study authorized by UGT and TT was performed by the nationally recognized engineering consulting firm of Hazen & Sawyer in 2013. The results of the study were accepted by both UGT and TT. This study provided cost estimates for the long term needs of the then UGTMA (now TMA) WWTP and collection system. Considering the age of the existing facility, the need to replace existing equipment and facilities, and the need to upgrade the WWTP to meet stricter, anticipated future permit limits, a cost estimate was generated. The UGT share of this cost is estimated to be \$33,800,000. This means that over an extended period of time, UGT would have incurred this cost. This was a key reason that UGT decided to no longer be part of the UGTMA and to divert flow.

VI.E ECONOMIC IMPACT OF FLOW DIVERSION

As a result of flow being diverted to the UGT WWTP, the long term cost to operate the UGT WWTP and collection system will be affected in a positive way. Once the flow is diverted, there will be a significant number of additional UGT customers which will provide long term economies of scale for operation of the UGT WWTP. This will reduce rate increases for UGT customers that could occur in the future.

The additional customers will also help to pay for the bond issue that will be used to fund the capital cost. The bond issue will be paid for in 15 to 25 years, but the additional annual revenue increase from a greater number of UGT customers will continue long after the bond is paid off. This represents a significant, long term financial benefit to UGT and its rate payers.

Financing a 25 year bond issue will not result in any rate increase to UGT customers.

Depending on market conditions, UGT may decide to finance the project with a 15 year bond issue, which would pay off the bond 10 years sooner than a 25 year bond and reduce the interest paid over the life of the bond. This would also mean that the extra revenue coming from the additional customers will be available 10 years sooner for purposes other than to pay debt service on the bond.

Should UGT decide to use a 15 year bond, a single rate increase of \$15 to each customer's semi-annual bill would result. As an example, the current semi-annual customer payment of \$185 would increase to \$200 to finance a 15 year bond.

If UGT does not divert flow, any costs to replace and upgrade the existing facilities at the TMA WWTP will be incorporated into the future sewer rates paid by UGT residents in the TMA service area. Therefore, by not diverting flow, UGT does not have long term control of the rates to be charged to the significant number of UGT customers served by the TMA. However, once UGT diverts flow, it will have control of the rates it charges to customers

whose flow is being diverted. We note that the sewer rates for UGT customers in the TMA service area will continue to be the same as sewer rates for UGT customers that currently flow to the UGT WWTP.

VI.F CONSTRUCTION PHASING

The flow can't be diverted until all of the WWTP, pump station, and force main construction is completed. There is no compelling reason for constructing any of the new facilities before the other(s). The project schedule was developed to provide the most economic benefit to UGT in terms of project bidding and facilitation of construction. A more detailed discussion of the project schedule is included in Section VIII.

VI.G LEGAL AUTHORITY

As stated earlier, UGT negotiated and finalized a legal agreement that provides for UGT diverting flow. Part of that agreement states that Towamencin Township will support UGT's efforts to divert flow. Other than this agreement, UGT plans on obtaining all regulatory approvals and permits necessary to successfully execute the project

VII. INSTITUTIONAL EVALUATION

VII. A UPPER GWYNEDD TOWNSHIP

UGT owns and operates its own WWTP and collection system. It has the authority to secure funding, operate and maintain its sanitary sewer treatment and collection system,

and regulate all users. The chosen alternative to divert flow can be implemented and incorporated into the UGT sanitary sewer system without any additional staff, departments, or authorities. UGT will have full ownership and operating responsibility for the additional WWTP facilities, the two new pump stations, and the new force mains.

Based on the legal agreement between Upper Gwynedd Township and Towamencin Township, UGT has the legal authority to divert flow to the UGT WWTP.

With the exception of the few functioning on-site systems, all wastewater within Upper Gwynedd Township will continue to be treated at publicly owned, NPDES permitted, wastewater treatment plants.

VIII. IMPLEMENTATION

VIII. A RECOMMENDATION

The chosen alternative is the following:

Upper Gywnedd Township diverts approximately 950,000 gallons per day (0.95 MGD) that currently flows to the TMA WWTP, to the UGT WWTP is the recommended alternative in this Act 537 Plan – Special Study

The chosen alternative meets all of the following important UGT goals:

- The existing UGT WWTP has adequate capacity to handle the build out for all development as shown in the Connection Management Plan discussed in Section IV.B.4. The 0.95 MGD being diverted will require additional capacity at the existing UGT WWTP. UGT will construct the facilities necessary to handle the average annual and peak flows. This is discussed in Section V.A.1.

Flow diversion also requires that two pump stations and two force mains be constructed to divert the flow that currently goes to the TMA WWTP, to the UGT WWTP. This is discussed in Section V.A.2. The property for both pump stations has already been acquired.

- The proposed route utilizes mostly existing Township rights of way. There are very few additional permanent easements required. The required easements are listed in Appendix J. The largest easement will be through Wissahickon Valley Watershed Association (WVWA) property. UGT has already met with the WVWA and they are supportive of the flow diversion project. We note that UGT already has sewer lines in WVWA property that were previously negotiated.
- The proposed force main routes involve a minimal amount of environmental impact and construction on private property.
- All permits and approvals will be obtained for the construction of the WWTP facilities, the force mains, and the two pump stations.
- Flow Diversion will greatly reduce the hydraulic loading in the Kriebel Road Interceptor. In turn, this will greatly reduce, if not eliminate, the many SSO that have occurred in the past on the KRI.
- The additional flow being diverted to the UGT WWTP will provide significant, long term economies of scale at the UGT WWTP and will reduce rate increases to UGT customers that could occur in the future.
- Flow Diversion will give UGT control over almost all of the wastewater treatment needs of the UGT community.
- The flow diversion alternative will be supportive of growth in UGT. Although UGT is mostly built out, there is some growth that is projected. In addition, certain existing properties have the potential to be re-developed that would

create additional growth. In the UGT service area that flows to the TMA WWTP, there is a connection prohibition due to SSO on the KRI. By diverting flow UGT will construct the new pump stations and force mains with adequate capacity to likely eliminate SSO, eliminate the connection prohibition, and facilitate growth in UGT

- Several years of negotiation went into the legal agreement to provide for UGT to divert flow. This required considerable time and effort on the part of both UGT and TT. All of this led to UGT determining that diverting flow was the best alternative for UGT.

We also note that UGT diverting flow will provide the TMA with the opportunity to better serve their customers in the future. Given the future facilities that will be needed at the TMA WWTP to upgrade the WWTP and meet stricter, future permit limits, TMA will be able to tailor the size of the new facilities to its future customer base.

VIII.B IDENTIFICATION OF COSTS AND FUNDING

The diversion of flow is the alternative chosen by UGT. This alternative requires the construction of additional treatment facilities at the UGT WWTP, two new pump stations, and new force mains.

UGT plans on funding the cost through two means. Work on Engineering and regulatory aspects of the project have already been started. UGT plans on funding this work through

inclusion in its annual budgeting process. Once the project gets to the construction phase, the remaining Engineering cost will be included with the construction cost, and this will be funded by a 15 to 25 year (depending on market conditions) bond issue in the amount of approximately fifteen million dollars. Spreading the cost of the project over 15 to 25 years will reduce the economic impact on customers. Therefore, even though construction is scheduled to be completed in approximately four years, the cost to UGT's customers will be spread out over 15 to 25 years.

There are two other significant sources of funding for the project for UGT. As part of the legal agreement between UGT and TT, UGT was paid \$7,100,000 upon leaving the TMA (UGTMA). The other source is 4,900,000 in sewer reserve funds held by UGT

VIII.C PROJECT SCHEDULE

The Project Schedule is included in Appendix C. The schedule is formatted using PADEP approval of the Act 537 Plan as the start date (Time T=0). As the schedule indicates, work on several tasks has already begun. There are tasks that cannot proceed or be completed until PADEP Act 537 Plan approval is obtained and the schedule is consistent with this.

Meetings have been held with all regulatory agencies and other parties key to successful implementation of the project. Survey work and preliminary engineering is well underway. Property for both the VFRN Pump Station and the VFRS Pump Station has been acquired.

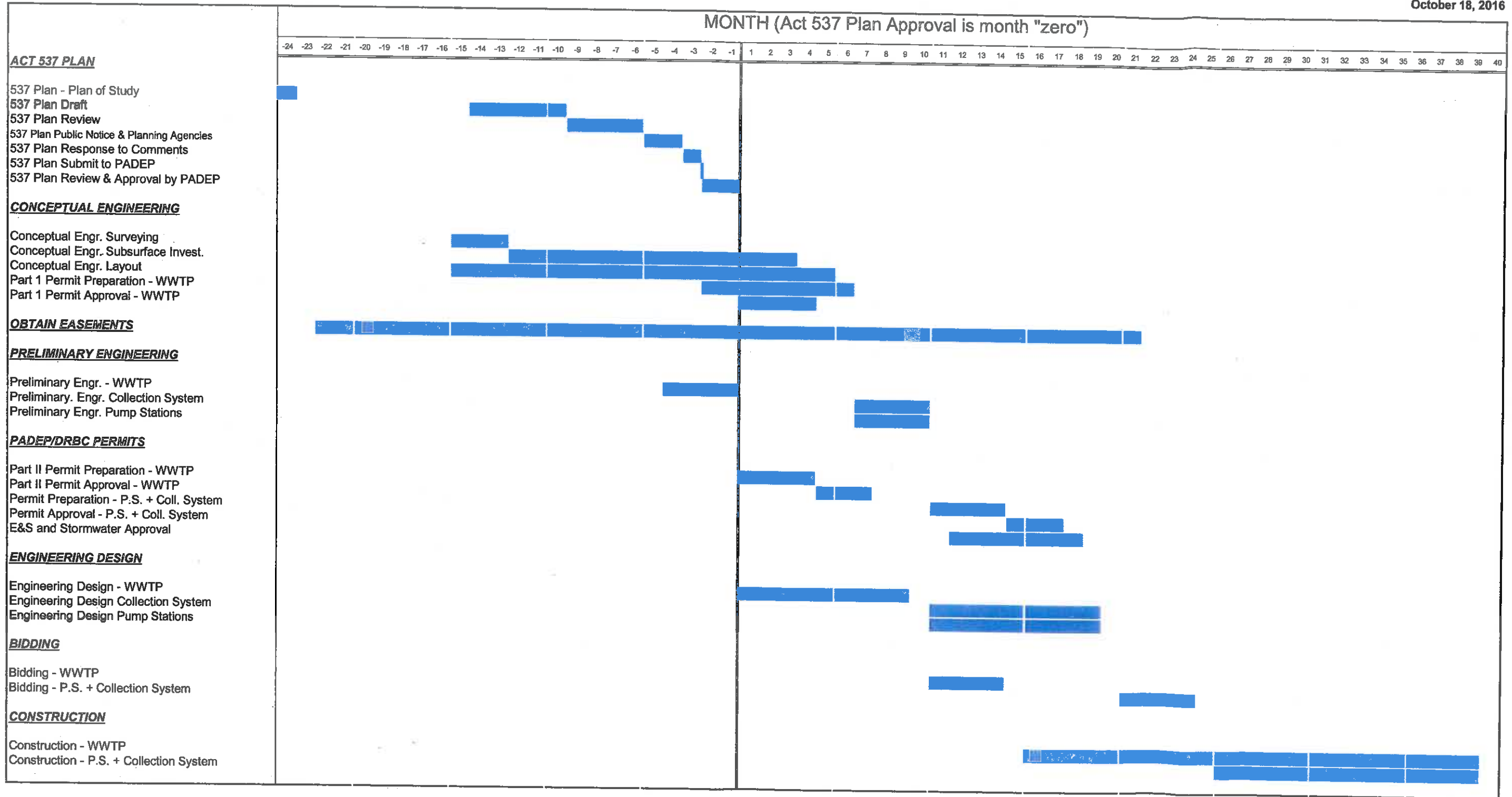
Work on obtaining easements for the force mains is underway. This Special Study is a key component of the project and provides an opportunity for public input.

The project is anticipated to take approximately four years and be completed in 2020. Obtaining regulatory or other agency approvals, obtaining permits, and logistical issues associated with construction have the potential to impact the project schedule.

APPENDIX C

PROJECT SCHEDULE

UPPER GWYNEDD TOWNSHIP
TMA DIVERSION SCHEDULE
October 18, 2016



APPENDIX I

PADEP ACT 537 PLAN CHECKLIST



INSTRUCTIONS FOR COMPLETING ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

Remove and recycle these instructions prior to submission.

CHECKLIST INSTRUCTIONS

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

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

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

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

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

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

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

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

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

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

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



ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST

PART 1 GENERAL INFORMATION

A. Project Information

1. Project Name Upper Gwynedd Township Act 537 Plan Revision - Special Study

2. Brief Project Description

Flow Diversion from TMA WWTP to UGT WWTP

B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
Upper Gwynedd Township	Montgomery	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Perrone	Leonard	T		

Additional Individual Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
P.O. Box 1	

Address Last Line - City	State	ZIP+4
West Point	PA	19486

Phone + Ext.	FAX (optional)	Email (optional)
215-699-7777	215-699-8846	lperrone@uppergwynedd.org

C. Site Information

Site (or Project) Name Upper Gwynedd Township (Municipal Name) Act 537 Plan

Site Location Line 1	Site Location Line 2

D. Project Consultant Information

Last Name	First Name	MI	Suffix
Interrante	John	V.	P.E.

Title	Consulting Firm Name
Principal Engineer	Environmental Engineering & Management Associates, Inc.

Mailing Address Line 1	Mailing Address Line 2
P.O. Box 232	

Address Last Line - City	State	ZIP+4	Country
Kulpsville	PA	19443	USA

Email	Phone + Ext.	FAX
Jinterrante@eema-inc.com	215-368-3375	215-368-6739

PART 2 ADMINISTRATIVE COMPLETENESS CHECKLIST

DEP Use Only	Indicate Page #(s) In Plan	In addition to the main body of the plan, the plan must include items one through eight listed below to be accepted for formal review by DEP. Incomplete plans may be <i>denied</i> unless the municipality is clearly requesting an advisory review.
	1	1. Table of Contents
	2	2. Plan Summary
	2	A. Identify the proposed service areas and major problems evaluated in the plan (Reference - 25 Pa. Code §71.21(a)(7)(i)).
	2	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference - 25 Pa. Code §71.21(a)(7)(ii)).
	2	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference - 25 Pa. Code §71.21(a)(7)(ii)).
	3	D. Identify the municipal commitments necessary to implement the Plan. (Reference - 25 Pa. Code §71.21(a)(7)(iii)).
	3	E. Provide a schedule of implementation for the project that identifies the <i>major</i> milestones with dates necessary to accomplish the project to the point of operational status. (Reference - 25 Pa. Code §71.21(a)(7)(iv)).
	3	3. Municipal Adoption: <i>Original</i> , signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference - 25 Pa. Code §71.31(f)) Section V.F. of the Planning Guide.
	App. D & G	4. Planning Commission / County Health Department Comments: Evidence that the municipality has requested, reviewed and considered comments by appropriate official planning agencies of the municipality, planning agencies of the county, planning agencies with area wide jurisdiction (where applicable), and any existing county or joint county departments of health. (Reference - 25 Pa. Code §71.31(b)) Section V.E.1 of the Planning Guide.
	App. F	5. Publication: Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30-day comment period (Reference - 25 Pa. Code §71.31(c)) Section V.E.2 of the Planning Guide.
	App. G	6. Comments and Responses: Copies of <i>all</i> written comments received and municipal response to each comment in relation to the proposed plan. (Reference - 25 Pa. Code §71.31(c)) Section V.E.2 of the Planning Guide.
	42	7. Implementation Schedule: A complete project implementation schedule with milestone dates specific for each existing and future area of need. Other activities in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference - 25 Pa. Code §71.31(d)) Section V.F. of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference - 25 Pa. Code §71.21(c)).
	27-32	8. Consistency Documentation: Documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 25 Pa. Code §71.21 (a)(5)(i-iii). (Reference - 25 Pa. Code §71.31(e)) Appendix B of the Planning Guide.

PART 3 GENERAL PLAN CONTENT CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	Item Required
	<u>5</u>	I. Previous Wastewater Planning
		A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
	<u>5</u>	1. Previously undertaken under the Pennsylvania Sewage Facilities Act (Act). (Reference - Act 537, 35 P.S. §750.5(d)(1)).
	<u>N/A</u>	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A-D)). Section V.F of the Planning Guide.
	<u>5 & App.M</u>	3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A&B)). Section V.D. of the Planning Guide.
	<u>5 & App.O</u>	4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference - 25 Pa. Code §71.21(a)(5)(i)(A)).
	<u>6 & App. IA</u>	Physical and Demographic Analysis utilizing written description and mapping (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
	<u>6 & App.A</u>	A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference - 25 Pa. Code §71.21(a)(1)(i)).
	<u>N/A</u>	B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference - 25 Pa. Code §71.21(a)(1)(ii)).
	<u>N/A</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 (IRSIS), and areas unsuitable for soil dependent systems. (Reference - 25 Pa. Code §71.21(a)(1)(iii)). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference - 25 Pa. Code §71.21(a)(1)(iii)).
	<u>N/A</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 - 25 Pa. Code §71.21(a)(1)(iii)).
	<u>N/A</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 - 25 Pa. Code §71.21(a)(1)(ii)).
	<u>N/A</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 - 25 Pa. Code §71.21(a)(1)(vi)). Section V.C. of the Planning Guide.
	<u>6 & App. J.</u>	G. Wetlands-Identify wetlands as defined in 25 Pa. Code Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per the United States Department of Agricultural (USDA) Natural Resources Conservation Service (NRCS) mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference - 25 Pa. Code §71.21(a)(1)(v)). Appendix B, Section II.1 of the Planning Guide.

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|---|--|
| <p>_____ 8 & App. A</p> <p>_____ 8-11 & App. A</p> <p>_____ App. K & App. L</p> <p>_____ 13 & App.M</p> <p>_____ 14-23 App. C & App. M</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> <p>_____ N/A</p> | <p>III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs</p> <p>A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:</p> <ol style="list-style-type: none"> 1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference - 25 Pa. Code §71.21(a)(2)(i)(A)). 2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's National Pollutant Discharge Elimination System (NPDES) permitted capacity, and the Clean Streams Law permit number. (Reference - 25 Pa. Code §71.21(a)(2)(i)(A)). 3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under 25 Pa. Code Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference - 25 Pa. Code §71.21(a)(2)(i)(B)). 4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(i & ii)). 5. A detailed description of the municipality's operation and maintenance (O & M) requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs (SMPs). (Reference - 25 Pa. Code §71.21(a)(2)(i)(C)). 6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference - 25 Pa. Code §71.21(a)(4)(i & ii)). <p>B. Using DEP's publication titled <i>Act 537 Sewage Disposal Needs Identification</i> (3800-BK-DEP1949), identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:</p> <ol style="list-style-type: none"> 1. The types of onlot systems in use. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(A)). 2. A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Act, the Clean Stream Law or regulations promulgated thereunder. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(B)). 3. A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and 25 Pa. Code Chapter 73 (relating to standards for sewage disposal facilities). (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)). 4. An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's <i>Act 537 Sewage Disposal Needs Identification</i> publication. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(B)). |
|---|--|

	<u>N/A</u>	
	<u>N/A</u>	
	<u>N/A</u>	
	<u>N/A</u>	
	<u>N/A</u>	
	<u>14-18</u>	
		<p>IV. Future Growth and Land Development</p> <p>A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:</p> <ol style="list-style-type: none"> 1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference - 25 Pa. Code §71.21(a)(3)(iv)). 2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference - 25 Pa. Code §71.21(a)(3)(iv)). 3. All limitations and plans related to floodplain and stormwater management and special protection (25 Pa. Code Chapter 93) areas. (Reference - 25 Pa. Code §71.21(a)(3)(iv)) Appendix B, Section II.F of the Planning Guide
	<u>App. N</u>	
	<u>N/A</u>	
	<u>N/A</u>	
	<u>14-19 & App. O</u>	
	<u>App. O</u>	<p>B. Delineate and describe the following through map, text and analysis.</p> <ol style="list-style-type: none"> 1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of equivalent dwelling units (EDUs) in development, total number of EDUs currently developed and total number of EDUs remaining to be developed (include time schedule for EDUs remaining to be developed). (Reference - 25 Pa. Code §71.21(a)(3)(i)). 2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas (Reference - 25 Pa. Code §71.21(a)(3)(ii)) Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning (Reference - 25 Pa. Code §71.21(a)(3)(iv)) 3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference - 25 Pa. Code §71.21(a)(1)(iv) and (a)(3)(iii)). 4. Zoning, and/or subdivision regulations, local, county or regional comprehensive plans; and existing plans of any other agency relating to the development, use and protection of land and water resources with special attention to: (Reference - 25 Pa. Code §71.21(a)(3)(iv)). <ul style="list-style-type: none"> -public ground/surface water supplies -recreational water use areas -groundwater recharge areas -industrial water use -wetlands
	<u>N/A</u>	
	<u>14-19</u>	
	<u>N/A</u>	

- | | | | |
|--|--------------|-------|---|
| | <u>14-19</u> | App.O | 5. Sewage planning necessary to provide adequate wastewater treatment for 5 and 10-year future planning periods based on projected growth of existing and proposed wastewater collection and treatment facilities. (Reference - 25 Pa. Code §71.21(a)(3)(v)). |
| | <u>19</u> | V. | Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities |
| | <u>N/A</u> | A. | Conventional collection, conveyance, treatment and discharge alternatives including. |
| | <u>N/A</u> | 1. | The potential for regional wastewater treatment. (Reference - 25 Pa. Code §71.21(a)(4)) |
| | <u>N/A</u> | 2. | The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference - 25 Pa. Code §71.21(a)(4)(i)) |
| | <u>N/A</u> | 3. | The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following (Reference - 25 Pa. Code §71.21(a)(4)(ii)). |
| | <u>N/A</u> | a. | Repair (Reference - 25 Pa. Code §71.21(a)(4)(ii)(A)). |
| | <u>N/A</u> | b. | Upgrading. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(B)). |
| | <u>App.M</u> | c. | Reduction of hydraulic or organic loading to existing facilities. (Reference - 25 Pa. Code §71.71). |
| | <u>N/A</u> | d. | Improved O & M. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(C)). |
| | <u>N/A</u> | e. | Other applicable actions that will resolve or abate the identified problems (Reference - 25 Pa. Code §71.21(a)(4)(ii)(D)). |
| | <u>App.M</u> | 4. | Repair or replacement of existing collection and conveyance system components (Reference - 25 Pa. Code §71.21(a)(4)(ii)(A)). |
| | <u>N/A</u> | 5. | The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(iii)). |
| | <u>N/A</u> | 6. | Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference - 25 Pa. Code §71.21(a)(4)(ii)(B)). |
| | <u>N/A</u> | B. | The use of individual sewage disposal systems including IRSIS systems based on: |
| | <u>N/A</u> | 1. | Soil and slope suitability. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)). |
| | <u>N/A</u> | 2. | Preliminary hydrogeologic evaluation. (Reference - 25 Pa. Code §71.21(a)(2)(ii)(C)). |
| | <u>N/A</u> | 3. | The establishment of a SMP. (Reference - 25 Pa. Code §71.21(a)(4)(iv)). See also Part "F" below. |
| | <u>N/A</u> | 4. | The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference - 25 Pa. Code §71.21(a)(4)). |
| | <u>N/A</u> | a. | Existing technology and sizing requirements of 25 Pa. Code Chapter 73. (Reference - 25 Pa. Code §73.31-§73.72). |
| | <u>N/A</u> | b. | Use of expanded absorption areas or alternating absorption areas. (Reference - 25 Pa. Code §73.16). |
| | <u>N/A</u> | c. | Use of water conservation devices. (Reference - 25 Pa. Code §71.73(b)(2)(iii)). |

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

27-33

27-28

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28

§71.73(b)(8)).

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

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

1. Modification of existing comprehensive plans involving:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

VI. Evaluation of Alternatives

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

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

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

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

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

28

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

28

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

28

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

29

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

29

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

29

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

29

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

29

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

<u> </u>	<u>N/A</u>	B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference - 25 Pa. Code §71.21(a)(5)(ii), Appendix B of the Planning Guide.
<u> </u>	<u>27-28</u>	C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference - 25 Pa. Code §71.21(a)(5)(iii)).
<u> </u>	<u>33-36 & App. Q</u>	D. Provide cost estimates using present worth analysis for construction, financing, ongoing administration, O & M and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of plan submission. (Reference - 25 Pa. Code §71.21(a)(5)(iv)).
<u> </u>	<u>33,34,41-42 & App. Q</u>	E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within 5 years from the date of the plan submission. (Reference - 25 Pa. Code §71.21(a)(5)(v)).
<u> </u>	<u>37</u>	F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference - 25 Pa. Code §71.21(a)(5)(vi)).
<u> </u>	<u>N/A</u>	1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of SMPs. (Reference - 25 Pa. Code §71.21(a)(5)(vi)(A)).
<u> </u>	<u>N/A</u>	2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a SMP justifying time schedules for each phase. (Reference - 25 Pa. Code §71.21(a)(5)(vi)(B)).
<u> </u>	<u>36</u>	G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - 25 Pa. Code §71.21(a)(5)(vi)(D)).
<u> </u>	<u>37-38</u>	VII. Institutional Evaluation
<u> </u>	<u>37-38</u>	A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
<u> </u>	<u>37-38</u>	1. Financial and debt status. (Reference - 25 Pa. Code §71.61(d)(2)).
<u> </u>	<u>37-38</u>	2. Available staff and administrative resources. (Reference - 25 Pa. Code §71.61(d)(2)).
<u> </u>	<u>37-38</u>	3. Existing legal authority to:
<u> </u>	<u>37-38</u>	a. Implement wastewater planning recommendations. (Reference - 25 Pa. Code §71.61(d)(2)).
<u> </u>	<u>37-38</u>	b. Implement system-wide O & M activities. (Reference - 25 Pa. Code §71.61(d)(2)).
<u> </u>	<u>37-38</u>	c. Set user fees and take purchasing actions. (Reference - 25 Pa. Code §71.61(d)(2)).
<u> </u>	<u>37-38</u>	d. Take enforcement actions against ordinance violators. (Reference - 25 Pa. Code §71.61(d)(2)).
<u> </u>	<u>37-38</u>	e. Negotiate agreements with other parties. (Reference - 25 Pa. Code §71.61(d)(2)).

33-37	f. Raise capital for construction and O & M of facilities. (Reference - 25 Pa. Code §71.61(d)(2)).
37-38	B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:
37-38	1. Need for new municipal departments or municipal authorities. (Reference - 25 Pa. Code §71.61(d)(2)).
N/A	2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference - 25 Pa. Code §71.61(d)(2)).
N/A	3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference - 25 Pa. Code §71.61(d)(2)).
37-38	C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
N/A	1. Incorporation of authorities or agencies. (Reference - 25 Pa. Code §71.61(d)(2)).
37-38 & App. B	2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference - 25 Pa. Code §71.61(d)(2)).
24-25	3. Description of activities to provide rights-of-way, easements and land transfers. (Reference - 25 Pa. Code §71.61(d)(2)).
N/A	4. Adoption of other municipal sewage facilities plans. (Reference - 25 Pa. Code §71.61(d)(2)).
App. B	5. Any other legal documents. (Reference - 25 Pa. Code §71.61(d)(2)).
App. C	6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
29-31,37,38	D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference - 25 Pa. Code §71.61(d)(2)).
42-43	VIII. Implementation Schedule and Justification for Selected Technical & Institutional Alternatives
38-41	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:
39-41	1. Existing wastewater disposal needs. (Reference - 25 Pa. Code §71.21(a)(6)).
N/A	2. Future wastewater disposal needs. (5 and 10 year growth areas). (Reference - 25 Pa. Code §71.21(a)(6)).
33-37 & 41-42	3. O & M considerations. (Reference - 25 Pa. Code §71.21(a)(6)).
N/A	4. Cost-effectiveness. (Reference - 25 Pa. Code §71.21(a)(6)).
41-42 & App. Q	5. Available management and administrative systems. (Reference - 25 Pa. Code §71.21(a)(6)).
28-29	6. Available financing methods. (Reference - 25 Pa. Code §71.21(a)(6)).
	7. Environmental soundness and compliance with natural resource planning and preservation programs (Reference - 25 Pa. Code §71.21(a)(6)).

_____ 41-42

_____ 42 & App.C

_____ N/A

_____ N/A

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

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

- A. Complete an ER as required by the UER process and as described in the DEP Technical Guidance (361-5511-111). Include this document as "Appendix A" to the Act 537 Plan Update Revision. *Note: An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.*

PENNVEST I.D. No. _____

ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS

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

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

I/A TECHNOLOGIES

PARTIAL LISTING OF INNOVATIVE AND ALTERNATIVE TECHNOLOGIES

TREATMENT TECHNOLOGIES

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

ENERGY RECOVERY TECHNOLOGIES

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

SLUDGE TREATMENT TECHNOLOGIES

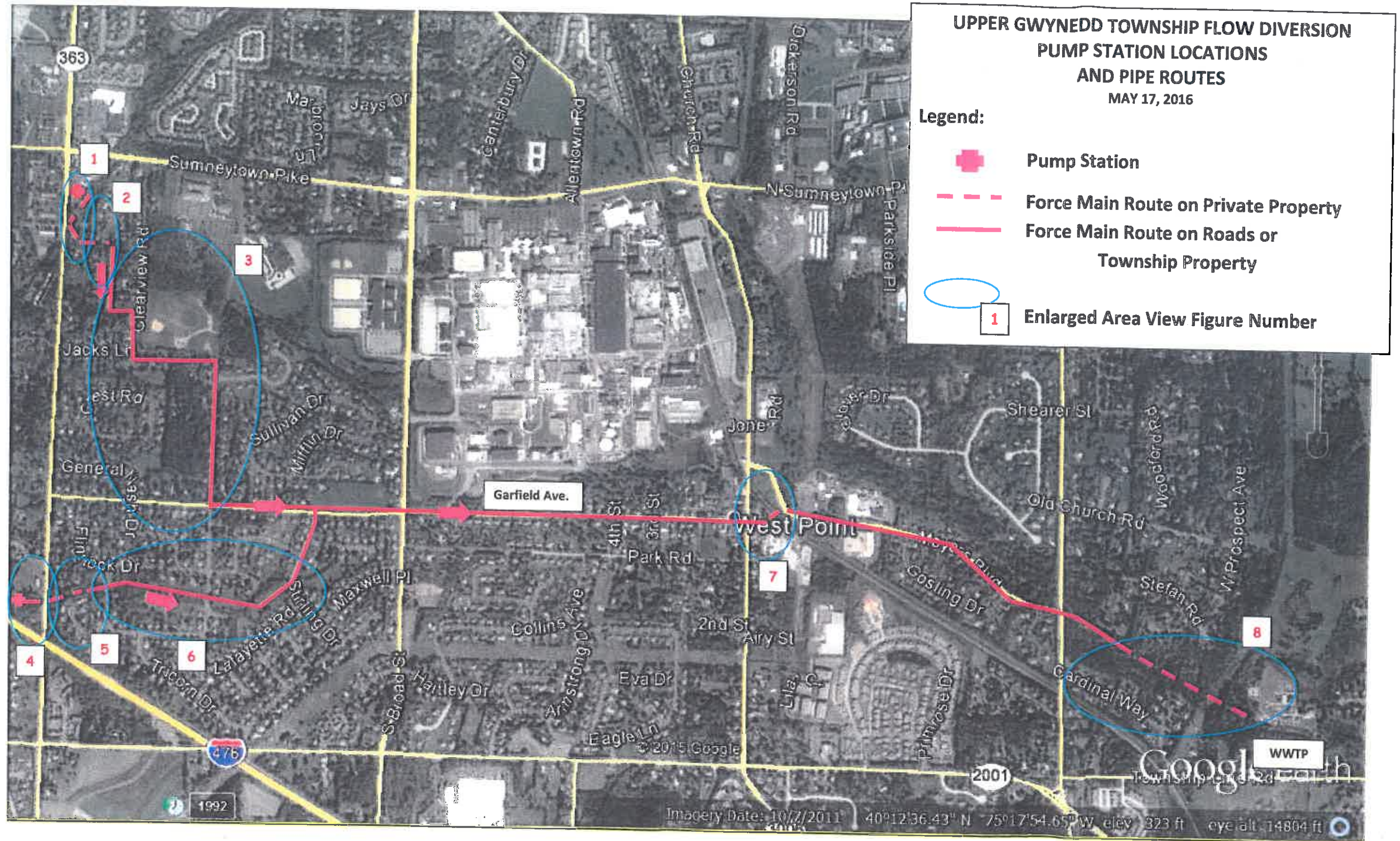
Aerated Static Pile Composting
Enclosed Mechanical Composting (In vessel)
Revegetation of Disturbed Land
Aerated Windrow Composting

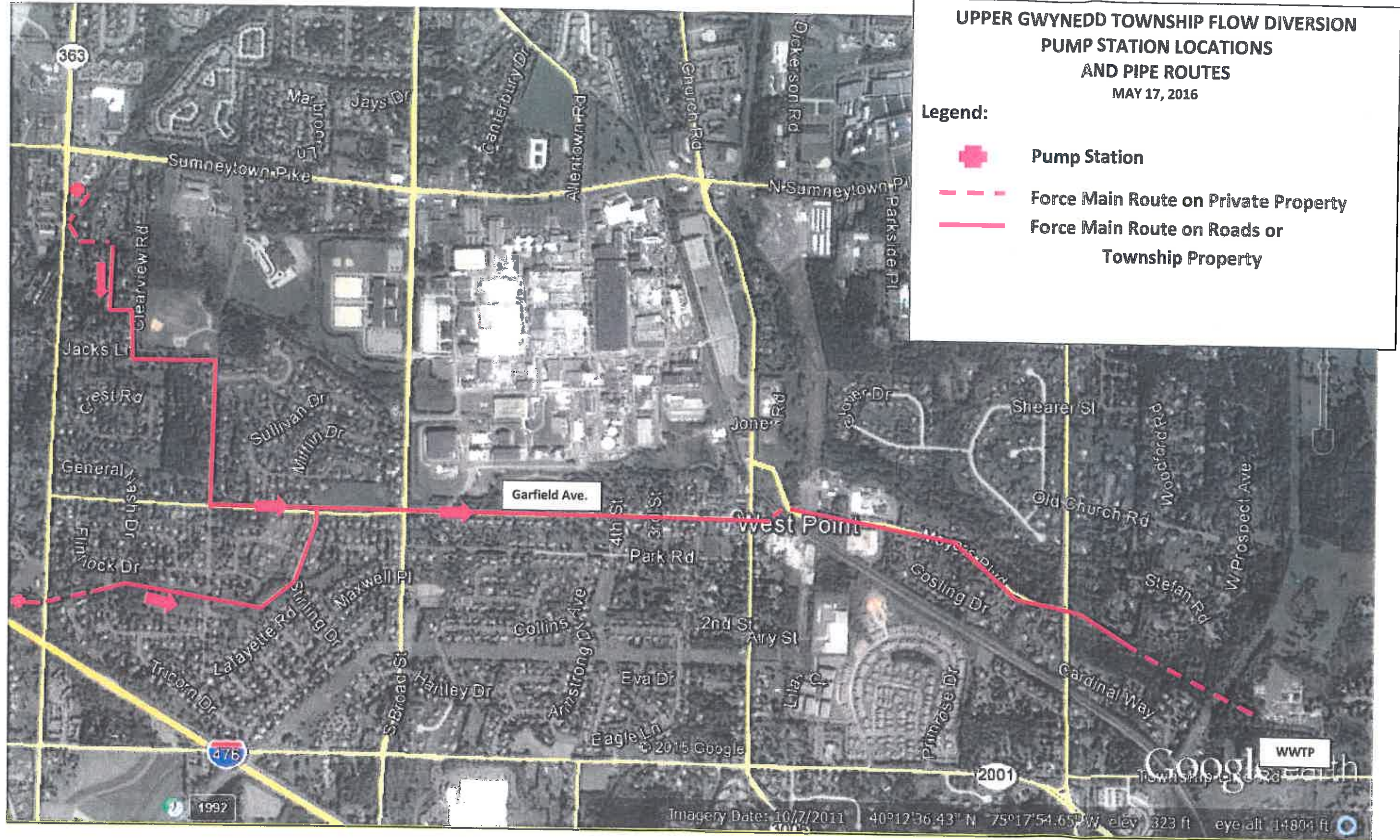
**INDIVIDUAL & SYSTEM-WIDE
COLLECTION TECHNOLOGIES**

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

APPENDIX J

PUMP STATION AND FORCE MAIN MAP
WITH EASEMENTS





Valley Forge Road near Sunneytown Pike

Figure 1



<u>Parcel Number</u>	<u>Owner & Address</u>	<u>Impact</u>
560009013003	DANNER RODERICK JR & PATRICIA 1611 VALLEY FORGE RD	Pump Station Location Gravity Sewer Construction In Existing Easement Force Main Construction In Existing Easement Temporary Construction Easement
560009010006	PEESKO KATE 1615 VALLEY FORGE RD	Gravity Sewer Construction In Existing Easement Force Main Construction In Existing Easement Temporary Construction Easement
560009007108 560009007009	NOWAK HARRY W III 1619 VALLEY FORGE RD	Force Main Construction In Existing Easement Temporary Construction Easement

Clearbrook Road

Figure 2



<u>Parcel Number</u>	<u>Owner & Address</u>	<u>Impact</u>
560001343023	SHERIDAN JOSEPH B & MARY ELLEN 1614 CLEARBROOK RD	Force Main Construction In Existing Easement Temporary Construction Easement
560001343005	DUDA DENNIS J & DIANE S 1616 CLEARBROOK RD	Force Main Construction in New Easement NOTE: Easement required ONLY if Force Main cannot be place in street above existing culvert.

Figure 4

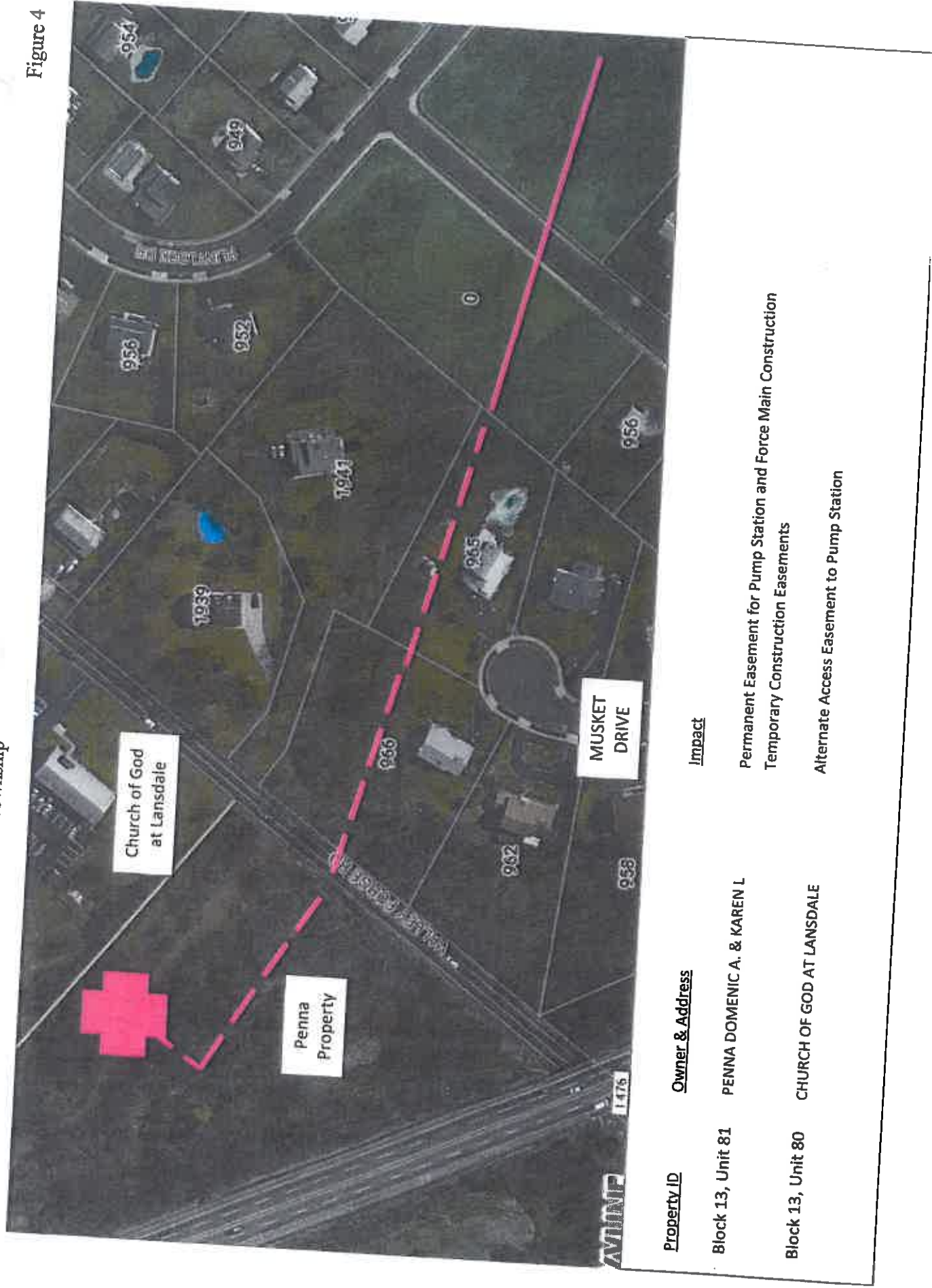
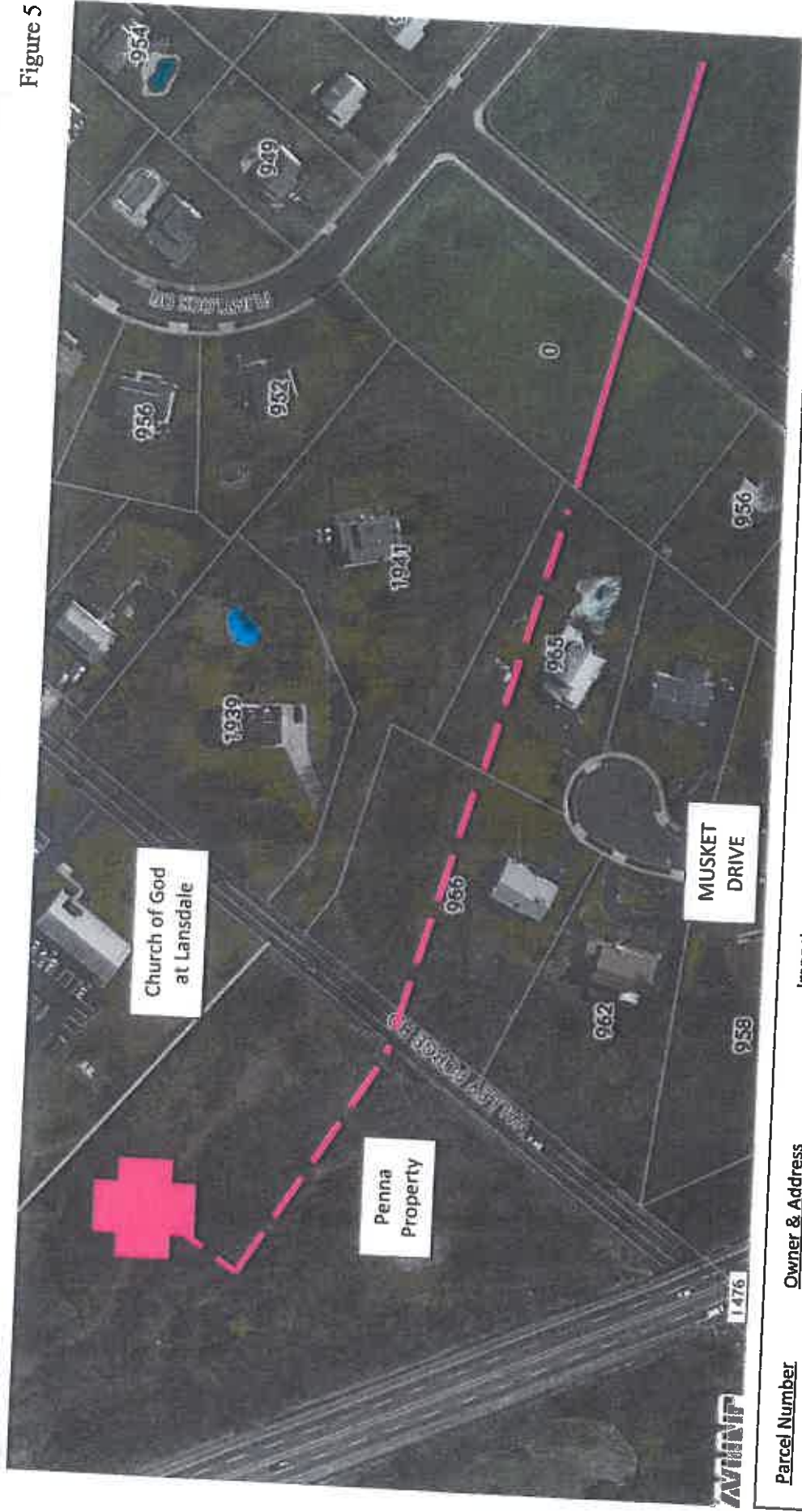


Figure 5



<u>Parcel Number</u>	<u>Owner & Address</u>	<u>Impact</u>
560005918281	GANNON PAUL S & ROSE M 966 MUSKET DR	Force Main Construction within Existing Sewer Easement Temporary Construction Easement
560005918308	PAGLIARO ANTHONY & KIMBERLY A 965 MUSKET DR	Force Main Construction within Existing Sewer Easement Temporary Construction Easement

Figure 6



Force Main Construction within the following public streets:

Powderhorn Drive, Supplee Road, Stirling Drive

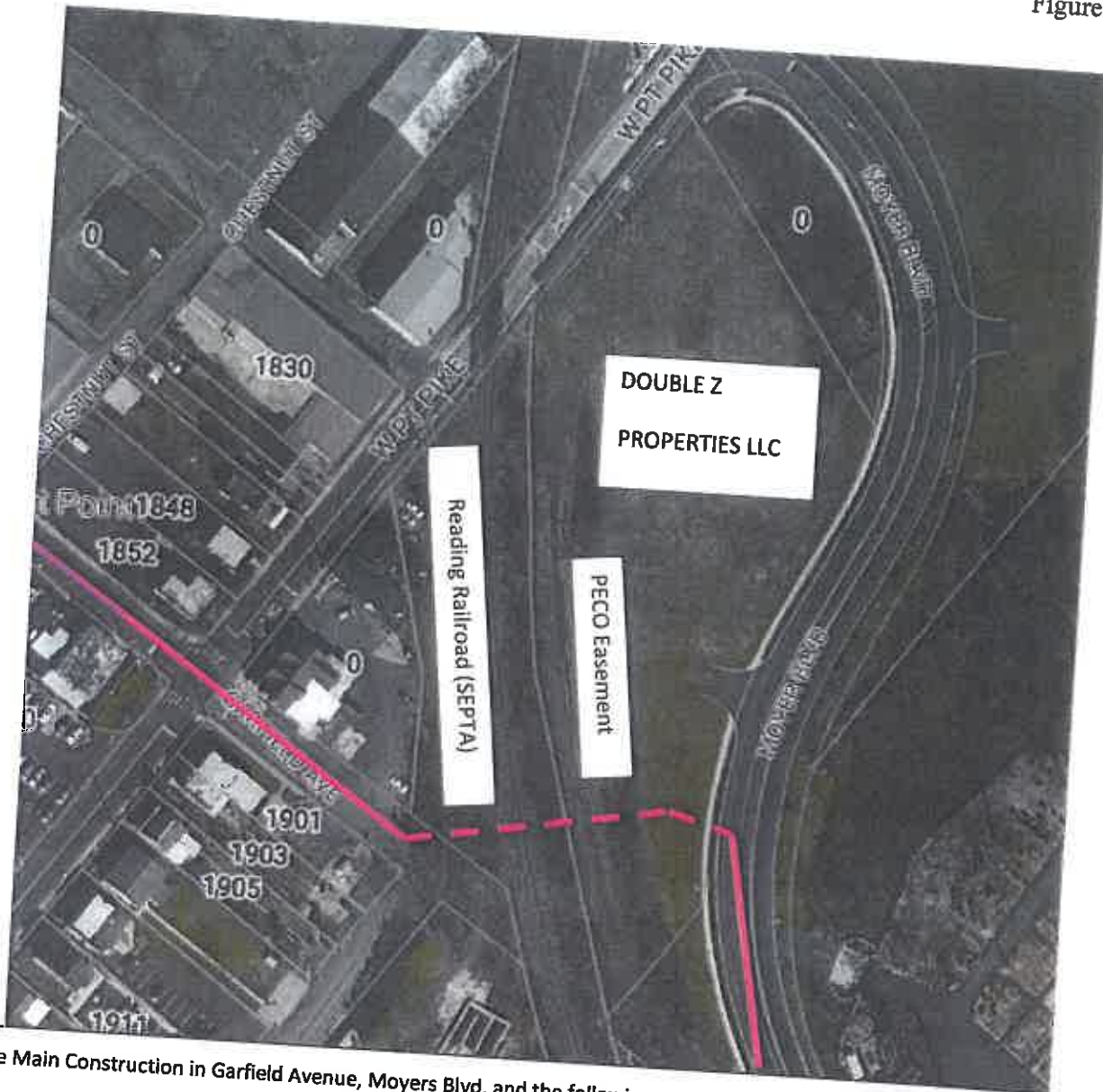
Force Main Construction within Existing Sanitary Sewer Easements, and Temporary Construction Easements, in the following parcels:

560002071015 (Flintlock Dr.) – Township Open Space

560008174176 (Stirling Dr.) – Township Open Space

Railroad Crossing at West Point

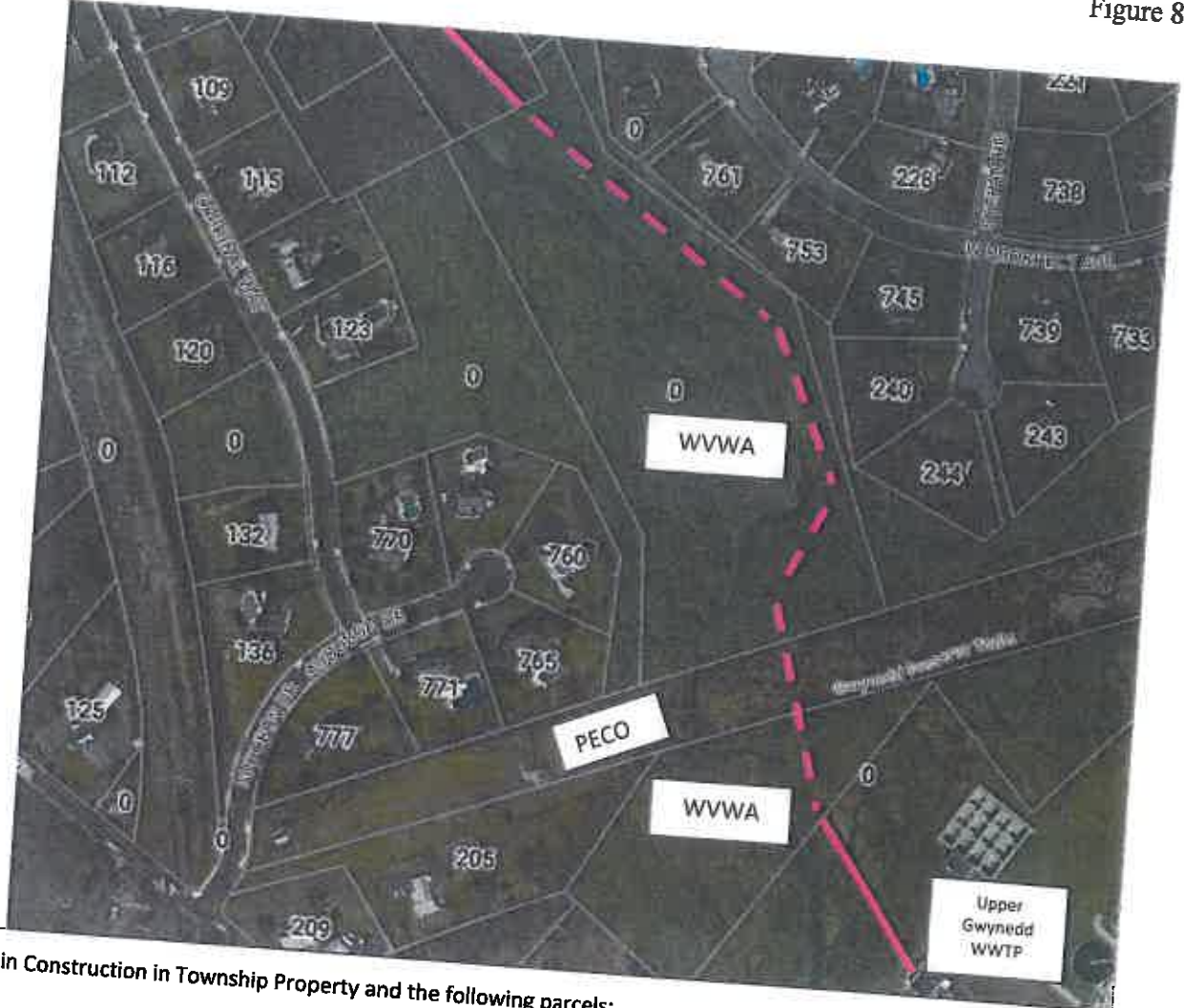
Figure 7



Force Main Construction in Garfield Avenue, Moyers Blvd, and the following parcels:

<u>Parcel Number</u>	<u>Owner & Address</u>	<u>Impact</u>
560009601009	HOFF PROPERTIES LLC 0 WEST POINT PIKE	Temporary Construction Easement
560009604006	READING RAILROAD CO (SEPTA)	Force Main Construction In New Easement Temporary Construction Easement
560009616021	DOUBLE Z PROPERTIES LLC 0 WEST POINT PIKE	Force Main Construction In New Easement Temporary Construction Easement
	PECO (Former Transit Easement)	Force Main Construction In New Easement Temporary Construction Easement

Figure 8

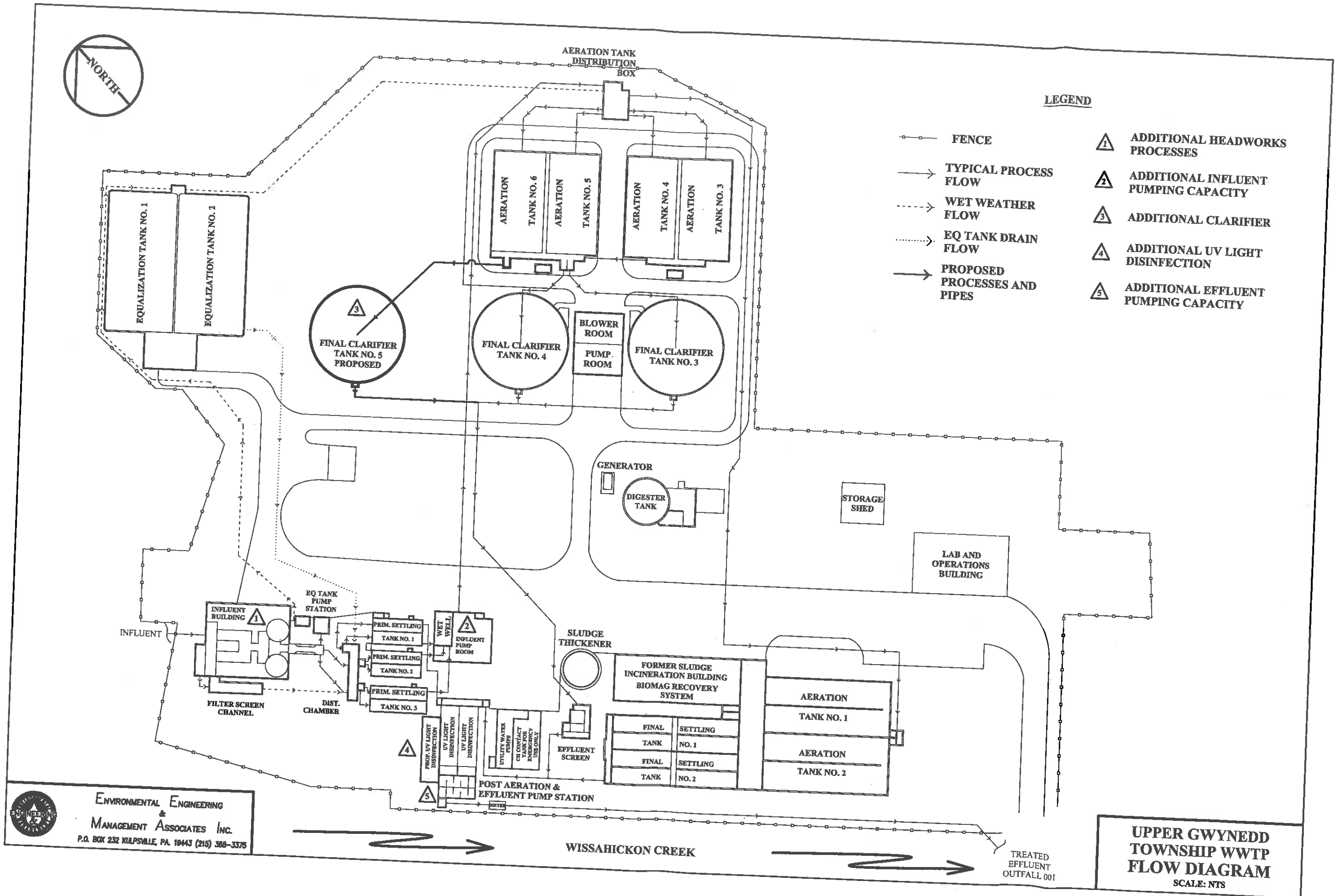


Force Main Construction in Township Property and the following parcels:

<u>Parcel Number</u>	<u>Owner & Address</u>	<u>Impact</u>
56000840121	WISSAHICKON VALLEY WATERSHED ASSOC 0 CARDINAL WAY	Force Main Construction In Existing Easement Temporary Construction Easement
560008398006	PECO 0 SUMNEYTOWN PIKE	Force Main Construction In Existing Easement Temporary Construction Easement

APPENDIX K

UPPER GWYNEDD TOWNSHIP WWTP
FLOW SCHEMATIC



ENVIRONMENTAL ENGINEERING & MANAGEMENT ASSOCIATES INC.
P.O. BOX 232 KULPSVILLE, PA. 18443 (215) 388-3375

UPPER GWYNEDD TOWNSHIP WWTP FLOW DIAGRAM
SCALE: NTS

APPENDIX O

UPPER GWYNEDD TOWNSHIP
CONNECTION MANAGEMENT PLAN

CONNECTION MANAGEMENT PLAN
UPDATED: 09/27/2017
LPT:MMW

Upper Gwynedd Township	DER Code No	Flow Approved gpd	Date Approved by DEP	EDUs			Remaining gpd	2015	2016	2017	2018	Tributary to SSO
				Approved	Connected	Remaining						
EAST INTERCEPTOR												
Antiquary	1-469-531-139-E	3,610	4/26/2010	13	0	0						
Conestoga	1-469-531-162-N	3,640	7/7/2008	13	0	0						MH E 2100 MH E 3000
445 Prospect Ave (Callechuck)	1-469-531-146-E	237	1/18/2013	1	0	1	1,680	3				None
301 Prospect Ave (Callechuck)	1-469-531-147-E	474	1/18/2013	2	0	2	237	1				None
1 Royal Avenue	1-469-531-148-X	237	1/18/2013	1	0	1	474	2				None
217 W Prospect Avenue	1-469-531-163-X	237	8/15/2004	1	0	0	0	1				MH E 2000 None
207 W Prospect Avenue	1-469-531-164-X	237	10/20/14	1	0	0	237	0				None
264 Summit Road	1-469-531-165-X	237	2/15/2016	1	0	1	0	1				None
Foulmeyer Expansion	1-469-531-205-SJ	237		1	0	1	7,110	30				MH E 3000
Gwynedd Friends								1				
Gwynedd Minor On-Lot Systems								3				
Misc On-Lot Systems								5	6			MH E 1700
SOUTHWEST INTERCEPTOR												
J.A. Rife	1-469-531-168-E	1,848	3/1/2010	4	3	1	237	1				None
Preserve at Wyalapa	1-469-531-169-SJ	10,238	5/16/2012	50	26	13	19,138	13				None
Subway (Montgomery Township)	1-469-531-145-E	711	12/7/2012	3	0	3	711	3				None
7934 Declaration Road (Lily)	1-469-531-137-SJ	1,186	1/26/2010	2	0	2	424	3				None
The Limb (Montgomery)	1-469-531-155-SJ	1,186	3/25/2016	5	0	5	1,186	5				None
Endura at Massie (Orion)	1-469-531-154-X	237	5/20/2015	1	0	1	237	1				None
314 Washington Avenue	1-469-531-152-E	5014	7/21/2010	22	0	22	5,214	1				None
716 East Walnut Street		474										None
116 Old Church Road												None
Hambock Road												None
Worcester Township												None
Montgomery Township												None
Misc. On Lot Systems												None
Mont Phase 5												None
2017 UGT System Design												None
TMA SERVICE AREA												
871 Fallowack Court	1-469-531-101-E	1,460	1/6/1980	8	6	0	0					MH 231A
Newtech Dental Lab	1-469-531-113-E	1,460		10	14	3	0					None
Bella Creek	1-469-531-138-E	11,958	3/15/2007	52	37	0	503	2				None
Providence Preserve (Cherryhill)	1-469-531-140-X	237	1/11/2013	1	0	0	0	1				None
610 Rotenberg Ave	1-469-531-151-SJ	6,714	3/1/2014	22	21	1	237	21				None
Delhi Ditch	1-469-531-152-SJ	5,461	4/29/2014	23	0	23	5,461	3				None
1830 Westgate Road (Schuylkill)	1-469-531-155-SJ	237	10/24/2015	1	0	1	237	1				None
2251 Westgate Road	1-469-531-156-X	237	10/24/2015	1	0	1	237	1				None
2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 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2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 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3011, 3012, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3037, 3038, 3039, 3040, 3041, 3042, 3043, 3044, 3045, 3046, 3047, 3048, 3049, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 3060, 3061, 3062, 3063, 3064, 3065, 3066, 3067, 3068, 3069, 3070, 3071, 3072, 3073, 3074, 3075, 3076, 3077, 3078, 3079, 3080, 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3090, 3091, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3099, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3146, 3147, 3148, 3149, 3150, 3151, 3152, 3153, 3154, 3155, 3156, 3157, 3158, 3159, 3160, 3161, 3162, 3163, 3164, 3165, 3166, 3167, 3168, 3169, 3170, 3171, 3172, 3173, 3174, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183, 3184, 3185, 3186, 3187, 3188, 3189, 3190, 3191, 3192, 3193, 3194, 3195, 3196, 3197, 3198, 3199, 3200, 3201, 3202, 3203, 3204, 3205, 3206, 3207, 3208, 3209, 3210, 3211, 3212, 3213, 3214, 3215, 3216, 3217, 3218, 3219, 3220, 3221, 3222, 3223, 3224, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 3240, 3241, 3242, 3243, 3244, 3245, 3246, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3258, 3259, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267, 3268, 3269, 3270, 3271, 3272, 3273, 3274, 3275, 3276, 3277, 3278, 3279, 3280, 3281, 3282, 3283, 3284, 3285, 3286, 3287, 3288, 3289, 3290, 3291, 3292, 3293, 3294, 3295, 3296, 3297, 3298, 3299, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3347, 3348, 3349, 3350, 3												

APPENDIX Q

CAPITAL COST ANALYSIS

FLOW DIVERSION CAPITAL COST ANALYSIS

FLOW DIVERSION ALTERNATIVE

1. COST TO DIVERT FLOW = \$27,000,000
2. PAYMENT RECEIVED FROM TOWAMENCIN TOWNSHIP = \$7,100,000
3. RESERVE FUNDS HELD BY UGT = \$4,900,000
4. COST TO BE FINANCED BY UGT = \$15,000,000

COST TO NOT DIVERT FLOW

1. LONG TERM UGT SHARE OF COST AT TMA WWTP = \$33,800,000¹

COST SUMMARY

NET LONG TERM CAPITAL COST SAVINGS TO UGT = \$6,800,000²

1. BASED ON HAZEN & SAWYER INDEPENDENT STUDY APPROVED BY UGT AND TT.
2. \$33,800,000 MINUS \$27,000,000.

SEP 13 2017

Mr. Michael Lapinski
Assistant Manager
Upper Gwynedd Township
P.O. Box 1
West Point, PA 19486

Re: Act 537 Plan Update
Upper Gwynedd Township Sewage Flow Diversion
APS ID No. 593641, AUTH ID No. 1195962
Upper Gwynedd Township
Montgomery County

Dear Mr. Lapinski:

The Department of Environmental Protection (DEP) has reviewed the proposed Official Sewage Facilities Plan Update (Plan) titled *Upper Gwynedd Township Sewage Flow Diversion*, as prepared by Environmental Engineering & Management Associates, Inc. (EEMA), dated October 2016. The Plan proposes the diversion of sewage flow in portions of Upper Gwynedd Township (UGT) from the Towamencin Municipal Authority's Kriebel Road Interceptor (TMA KRI) to the Upper Gwynedd Township Wastewater Treatment Facility (UGT WWTP), the construction of two new pumping stations, associated force mains and upgrades to the UGT WWTP. The submission is consistent with the planning requirements in Chapter 71 of DEP's regulations.

This Plan is approved and provides for the following:

1. The diversion of 0.95 MGD from the TMA KRI. The portions of Upper Gwynedd Township that will be diverted are the areas tributary to the Sunney Forge Shopping Center and the PA Turnpike bridge (on Valley Forge Road) crossing points. These areas are shown on Figure 2 in Appendix A of the January 27, 2017, submission. The specific properties are listed in the Valley Forge Road North Pump Station (VFRNPS) and Valley Forge Road South Pump Station (VFRSPS) tables in the May 9, 2017, resubmission.
2. Five properties in Towamencin Township will also be diverted to the UGT WWTP. Those properties are listed in the Towamencin Township Valley Forge Road South Pump Station table in the May 9, 2017, resubmission.
3. The construction of the VFRNPS and VFRSPS and associated force mains. The approved sewage flows are as follows:

- a. The annual average sewage flow for the VFRNPS will be 0.96 MGD. Its peak capacity will be 6.0 MGD. The associated proposed force main leaving the pump station will be a combination of 20" and 24" sized pipe. The force main will also have an annual average capacity of 0.96 MGD.
- b. The annual average sewage flow for the VFRSPS is 0.14 MGD. Its peak capacity will be 1.5 MGD. The associated proposed force main will be an 8" sewer line with an annual average capacity of 0.14 MGD.

These annual average sewage flows identified above include the sewage flow being diverted from the TMA KRI and anticipated future sewage flows in the respective drainage area of each pump station. The specific locations of the pump stations and routes of the force mains are illustrated in the figures in Appendix J of the January 27, 2017, submission.

4. The new force mains will combine on Garfield Avenue near Sterling Drive and a new force main will be constructed. The new 20"/24" force main will have an annual average capacity of 1.1 MGD. Its peak capacity will be 7.5 MGD.

The new force main will connect directly to the UGT WWTP, as illustrated on the *Pump Station Locations and Pipe Routes* map in Appendix J of the January 27, 2017, submission.

5. The UGT WWTP will be upgraded from 5.7 MGD to 6.4 MGD annual average flow. Per the e-mail from EEMA, dated August 30, 2017, modifications at the UGT WWTP will be made to accommodate peak sewage flows realized by the sewage flow diversion.

Upper Gwynedd Township must secure a Water Quality Management (Part II) permit(s) for the construction and operation of the proposed sewage facilities and WWTP upgrades. 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 permit is a violation of the Clean Streams Law.

Please note that the permitted annual average capacity of sewage facilities is the number upon which Act 537 sewage facilities planning capacity is based. No capacity may be used for new connections to these facilities beyond their permitted annual average capacities without first obtaining additional sewage facilities planning approvals for the rerate/upgrade of these facilities.

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.

Mr. Michael Lapinski

- 3 -

SEP 13 2017

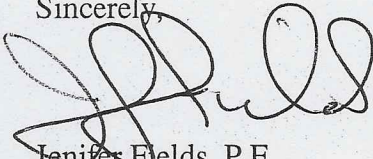
Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental 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 or concerns, please contact Ms. Stefanie Rittenhouse at 484.250.5186.

Sincerely,



Jenifer Fields, P.E.
Regional Manager
Clean Water

cc: Montgomery County Health Department
Montgomery County Planning Department
Mr. Ford - Towamencin Township
TMA
Environmental Engineering and Management Associates, Inc
Planning Section
Re 30 (GJE17CLW)250-7

66 Pa. C.S. Section 1329 Application Completeness Review
Pennsylvania-American Water Company – Wastewater Division
Acquisition of Towamencin Township Wastewater System Assets
at Docket No. A-2023-3039900

22. Checklist Item No. 22.b. – The 1987 Act 537 Plan, Page 9 of 506, referenced Attachments 3.11.5-1, 3.12-1, and 3.14-1, including a document titled “Worcester Service Area Letter”. However, copies of these Attachments were not included with the 1987 Act 537 Plan. Please provide a copy of the 1987 Act 537 Plan’s Attachments 3.11.5-1, 3.12-1, and 3.14-1.

Response: See **Amended Appendix A-22-b**, which includes copies of the 1987 Act 537 Plan Attachments 3.11.5-1, 3.12-1, and 3.141.

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23. Checklist Item No. 25 – The Application’s Appendix A-25.2 included an agreement between Towamencin, Borough of Lansdale, Township of Upper Gwynedd, Lansdale Sewer Authority, and the Upper Gwynedd-Towamencin Municipal Authority, dated December 29, 1969 (1969 Agreement). The 1969 Agreement referenced an attached Exhibit “D” on Page 10 of 13. However, an Exhibit “D” was not included in the appendix. Please provide a copy of the referenced Exhibit “D”.

Response: The Township contacted each of the parties to the 1969 Agreement and confirmed that the reference to Exhibit “D” was a typo. No party to the 1969 Agreement has a copy of the agreement with an Exhibit “D” included. After receiving this question from the Commission, the Township sent a letter to all parties to the 1969 Agreement confirming that Exhibit “D” was never included in the agreement and has requested that the parties sign the letter confirming that they agree. A copy of this letter will be submitted to the Commission once all parties have signed it.

66 Pa. C.S. Section 1329 Application Completeness Review
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24. Checklist Item No. 25 – The Application’s Appendix A-25.6 (Appendix A-25.6) included a copy of Towamencin Township Ordinance No. 89-7 – Hollis Hills Sanitary Sewer District in Worcester Township (Ordinance No. 89-7). Ordinance No. 89-7 incorporated by reference plans for the Hollis Hills subdivision originally dated February 15, 1988, as amended, prepared by Momenee-King Associates. Please provide an amended Appendix A-25.6 to include a copy of the referenced subdivision plans.

Response: See **Amended Appendix A-25.6**, which includes the plans for the Hollis Hills subdivision originally dated February 15, 1988, as amended, prepared by Momenee-King Associates, which were incorporated by reference into Ordinance No. 89-7.

66 Pa. C.S. Section 1329 Application Completeness Review
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25. Checklist Item No. 25. – The Application’s Paragraph F(i)ix., Page 20, indicated Ordinance No. 89-12 (Ordinance No. 89-12) dated February 22, 1989, creating the Milestone Sanitary Sewer District was included in Appendix A-25.6. However, Ordinance No. 89-12 is missing from Appendix A-25.6. Please provide an amended Appendix A-25.6 to include Ordinance No. 89-12.

Response: See **Amended Appendix A-25.6**, which includes a copy of Ordinance No. 89-12.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

In re: Application of Pennsylvania-American Water Company under Sections 1102(a) and 1329 of the Pennsylvania Public Utility Code, 66 Pa C.S. §§ 1102(a) and 1329, for approval of (1) the transfer, by sale, to Pennsylvania-American Water Company, of substantially all of the assets, properties and rights related to the wastewater collection and treatment system owned and operated by Towamencin Township and Towamencin Municipal Authority, and (2) the rights of Pennsylvania-American Water Company to begin to offer or furnish wastewater service to the public in the Township of Towamencin and portions of the Townships of Franconia, Lower Salford and Worcester and the Borough of Lansdale, all in Montgomery County, Pennsylvania

Docket No. A-2023-3039900

In re: Application of Pennsylvania-American Water Company under Section 1329 of the Pennsylvania Public Utility Code, 66 Pa C.S. § 1329, for approval of the use for ratemaking purposes of the lesser of the fair market value or the negotiated purchase price of the assets related to the wastewater collection and treatment system owned and operated by Towamencin Municipal Authority and the Township of Towamencin

Docket No. A-2023-_____

In re: Petition of Pennsylvania-American Water Company, related to its acquisition of the wastewater collection and treatment system owned and operated by Towamencin Municipal Authority and the Township of Towamencin, for approval under Section 1329 of the Pennsylvania Public Utility Code, 66 Pa. C.S. § 1329, to (i) collect a distribution system improvement charge, (ii) for book and ratemaking purposes, accrue Allowance for Funds Used During Construction for post-acquisition improvements not recovered through the distribution system improvement charge, (iii) for book and ratemaking purposes, defer depreciation related to post-acquisition improvements not recovered through the distribution system improvement charge, and (iv) include, in its next base rate case, a claim for transaction and closing costs.

Docket No. P-2023-_____

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