
**BROWN DRIVE/OLD SCHUYLKILL ROAD
SANITARY SEWER PROJECT**

**ACT 537
SEWAGE FACILITIES PLANNING – SPECIAL STUDY**

**EAST VINCENT TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA**

**MARCH 28, 2022
ADOPTED: _____**

Prepared by:

**CKS ENGINEERS, INC.
4259 W. SWAMP ROAD, SUITE 410
DOYLESTOWN, PA 18902**

REFERENCE: #7634

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1.0 PURPOSE OF SPECIAL STUDY

The purpose of this Special Study is to address the PADEP Act 537 sewage facilities planning required to extend public sewer service to the Brown Drive/Old Schuylkill Road area of East Vincent Township.

On July 1, 2009, an Act 537 Sewage Facilities Plan Update was adopted by East Vincent Township and finalized on October 30, 2009 to incorporate PADEP's review/approval comments. The Plan Update addressed the sewage facilities for the Township and identified the public sewer service areas to be served by the Township's Veterans Center system. The Brown Drive/Old Schuylkill Road area was not included in the public sewer service area identified by the Plan update. On December 18, 2020, a virtual meeting was held with PADEP to discuss the sewage facilities planning needed to extend public sewer service to the Brown Drive/Old Schuylkill Road area. Based on this meeting, PADEP requested a "Special Study" be prepared which included a "needs" analysis and alternatives evaluation. The alternatives evaluation was to address the "do nothing" alternative compared to the extension of public sewer service. This Special Study has been prepared to comply with PADEP's Act 537 sewage facilities planning requirements.

2.0 PROJECT DESCRIPTION

The Brown Drive/Old Schuylkill Road Sanitary Sewer Project proposes the extension of East Vincent Township's public sewer system to serve the Brown Drive/Old Schuylkill Road area of the Township. The project is located in the northeast corner of East Vincent Township and includes a portion of Brown Drive from Pennhurst Road to Old Schuylkill Road and a portion of Old Schuylkill Road from Brown Drive to East Vincent Township's border with East Coventry Township. In addition, the project area includes a portion of Shady Lane as well as a portion of Schuylkill Road (Rt. 724) in the vicinity of Reitnour Road. The project is also located in the vicinity of the Schuylkill River and its tributary known as Patty's Run. The area contains a total of 49 dwelling units to be potentially served throughout 47 parcels. This includes 42 existing residential buildings/homes; 6 vacant properties; and one lot having the potential for a second home/dwelling. The area is currently served by individual On-Lot Disposal Systems (OLDS). The neighborhood consists of older homes and has poor drainage due to local soils. As a result, many of the OLDS are failing and/or require a high frequency of pumping. These failures threaten to pollute the individual private wells providing potable water to the homes in the area, as well as the nearby Schuylkill River and Patty's Run Tributary. The Brown Drive/Old Schuylkill Road Sanitary Sewer Project proposes to provide public sewer service to the area to eliminate the OLDS failures and provide a more reliable alternative for sewer service.

Public sewer service to the Brown Drive/Old Schuylkill Road area will be extended through the construction of a Low Pressure Sewer System (LPSS) consisting of 7,520 linear feet of high density polyethylene (HDPE) force main pipe ranging in size from 2" to 4" and forty-nine (49) individual grinder pumping systems. The low pressure force main will extend throughout the area and discharge to an existing manhole (No. 509) located in the intersection of Brown Drive and Pennhurst Road. From there, sewage will be conveyed by the Township's existing interceptor in Commonwealth Drive to the Township's Veterans Center Wastewater Treatment Plant for treatment. Construction will also involve lateral connections to all homes, abandonment of on-lot disposal systems (OLDS), and road restoration.

The Township completed an upgrade to the Veterans Center Wastewater Treatment Plant in December 2013. This upgrade involved constructing a new wastewater treatment plant at the Veterans Center facility. The Plant contains the following processes and has an annual average permitted capacity of 325,000 gpd and permitted hydraulic capacity of 400,000 gpd. The Plant processes include:

- Influent Screening
- Sequencing Batch Reactors
- Tertiary/Drum Filters
- Ultraviolet Disinfection
- Aerobic Digestion
- Sludge Dewatering Centrifuge
- Chemical (Alum) Addition

The annual average influent flow to the plant in 2021 was 217,000 gpd. Please note this is an adjusted influent flow that has accounted for the supernatant and centrate flow returned to the head of the Plant before the influent flow meters. The internal recirculation of supernatant and centrate flow has been calculated to average 21,500 gpd during 2021 and has been subtracted from the metered influent flow. However, looking back at the historical flow to the Plant, 2018 had the greatest annual average flow of 283,000 gpd, but the internal recirculation of flow was not accounted for. Since that time, flow has continued to progressively decrease with averages in 2019, 2020, and 2021 being 231,000, 223,000, and 217,000 gpd, respectively. Therefore, for planning purposes, and to be conservative in evaluating Plant capacity, an average of the past four year flows, which includes the 2018 annual average flow, has been utilized in evaluating the Plant capacity. Based on the 2018-2021 average influent flow, the existing available annual average capacity in the Plant is 86,500 gpd. However, subtracting out the unused portion of reserve capacity for the existing Southeastern Veterans Center Campus and the existing Jones Motor site, as well as the remaining connections in the Reserve at French Creek and Magnolia Reserve (Soltys-Schuylkill Road) developments, the net remaining annual average capacity in the Veterans Center Plant equals 20,450 gpd. Based on a

factor of 260 gallons per dwelling unit, the capacity needed to serve the Brown Drive/Old Schuylkill Road area is 12,740 gpd ($260 \text{ gpd/EDU} \times 49 \text{ EDUs} = 12,740 \text{ gpd}$). As a result, the Plant has sufficient capacity to serve 49 dwelling units proposed. Further, an analysis of the hydraulic capacity of the Plant (400,000 gpd required for Chapter 94 reporting) has also determined that there is sufficient capacity in the Plant to serve the Brown Drive/Old Schuylkill Road area. Included at the end of this section is a table, Table 1, detailing the Veterans Center WWTP capacity analysis.

**TABLE 1
EAST VINCENT TOWNSHIP
VETERANS CENTER WASTEWATER TREATMENT PLANT – CAPACITY ANALYSIS
FOR BROWN DRIVE/OLD SCHUYLKILL ROAD SANITARY SEWER PROJECT**

| | Annual Ave. (GPD) | Chapter 94 Hydraulic Capacity (GPD) |
|--|----------------------------------|--|
| WWTP Permitted Capacity | 325,000 | 400,000 |
| Influent Flow | | |
| - Existing 2018-2021 Average Metered Influent Flow | (238,500) | (272,750) ⁽¹⁾ |
| Subtotal – Existing Available Capacity | 86,500 | 127,250 |
| Existing Unused Capacity | | |
| - Veterans Center Campus | (50,000) | (50,000) |
| - Jones Motor Site | <u>(7,800)</u> | <u>(7,800)</u> |
| Subtotal - Available Capacity for Planned Development | 28,700 | 69,450 |
| Planned Development – Remaining Connections | | |
| - Washington Square (1 EDU) | (250) ⁽²⁾ | (250) ⁽²⁾ |
| - Reserve at French Creek (2 EDUs – Lot 30) | (500) ⁽²⁾ | (575) ⁽³⁾ |
| - Magnolia Reserve (31 EDUs) | (7,750) ⁽²⁾ | (8,912) ⁽³⁾ |
| Total Remaining Available Capacity – GPD | 20,200 | 59,713 |
| Total Remaining Available Capacity – EDUs (based on 260 GPD per EDU) | 77 | |
| Capacity required for Brown Drive/Old Schuylkill Road (based on 49 EDUs at 260 GPD/EDU) | 12,740 | 14,651⁽³⁾ |
| <hr/> | | |
| Notes: | | |
| (1) 3-Month Maximum Average Flow for 2018-2021. | | |
| (2) Annual Average Flow Projections based on 250 GPD per EDU as per former tapping calculation and PA DEP Sewage Facilities Planning approval. | | |
| (3) Based on an 2018-2021 average of the 3-Month Max Avg to AA Flow equaling 1.15. | | |
| (4) Amounts in () = minus. | | |

3.0 SEWAGE DISPOSAL “NEEDS” IDENTIFICATION

In compliance with PADEP Act 537 Sewage Facilities Planning requirements and the “Special Study” elements discussed with PADEP during our virtual meeting on December 18, 2020, a wastewater disposal “needs” analysis has been performed to present the reason for discontinuing the use of OLDS in the Brown Drive/Old Schuylkill Road area and serving the area through an extension of public sewers. This “needs” analysis considered the following:

- Size of lots in the area
- Age of OLDS in the area
- Soil suitability for OLDS
- Chester County Health Department data on OLDS pumping and failures

3.1 Size of Lots

Approximately 42 existing residential buildings/homes located on 41 properties are located in the Brown Drive/Old Schuylkill Road area. In addition, an additional 6 vacant properties are located in the study area that may be served by public sanitary sewer. Of the 41 existing improved properties, approximately 50% are less than one acre. In addition, the Brown Drive/Old Schuylkill Road area is located in a low lying area along the west bank of the Schuylkill River. Therefore, several of the lots are also impacted by floodplain areas and potentially wetlands which impacts their usable area. As a result, the area, due to lot size, has limitations impacting the use of OLDS for sewage disposal.

3.2 Age of OLDS

For the purpose of needs identification, OLDS permitting under Act 537 became effective on May 15, 1972. Based on tax map data, a majority of the homes in the Brown Drive/Old Schuylkill Road area were constructed prior to 1972. In fact, several date prior to the 1900’s. Consequently, many of the OLDS in the area are pre-regulatory systems, meaning it is very unlikely they would have received permitting by current standards. As a result, the age of the OLDS in the area contribute to existing and potential malfunctions.

3.3 Soil Suitability for OLDS

Based on the Soil Survey of Chester County, Pennsylvania published by the USDA Soil Conservation Service in 1975, revised in June 2007, and the Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>), which is based on the Soil Survey and is continuously being updated, the Township soils can mainly be classified into various

associations of silt loam. The soil associations located within the Special Study area include:

Bo – Bowmansville-Knauers silt loams
CyB – Croton Silt Loam – 3-8% slope
Gb – Gibraltar Silt Loam
PeB – Penn Silt Loam – 3-8% slope
PeC – Penn Silt Loam – 8-15% Slope
PeD – Penn Silt Loam – 15-25% slope
Ro – Rowland Silt Loam

The slopes of these soils vary greatly from nearly flat to steep slopes and poorly drained to well drained. Included in Appendix A is a Soils Map which illustrates the soils with the study area.

Soil suitability is very important in the use of on-lot sewage disposal systems. An on-lot sewage disposal system depends heavily upon soils for renovation or cleaning of sewage effluent before it enters the groundwater. Soil renovates sewage through a combination of physical filtration, absorption and retention, ion exchange, and bio-chemical breakdown of organic waste. Important to the process is the length of time it takes sewage to move through the soil. This time must be long enough to allow harmful microbes to live out their lives or be destroyed by other microbial predators and allow the bio-chemical breakdown of organics. In order to assure that this time and soil renovation is provided, PADEP has established percolation requirements and soil depth requirements. One requirement is that at least 48 inches of adequately textured, well aerated soil be provided before encountering or contacting a limiting zone. A limiting zone is any layer in the soil or underlying geology which does not renovate or which limits downward movement of the effluent. Limiting zones include, but are not limited to, the following:

- Layers which inhibit downward passage of effluent, such as fragipans, clay lenses, and impermeable rock formations.
- Layers which provide no renovation such as rock formations with insufficient fine materials between the rocks, gravel beds lacking soils, creviced bedrock, rock outcrops, saturated soils, and perched, seasonal and regional water tables.

The Soil Survey for Chester County, Pennsylvania rates the degree and identifies the kind of limitation each soil series has for sewage effluent disposal by an on-site septic tank. The following table, Table 2, lists the soils within the study area and their suitability for septic tank effluent disposal. Included as Exhibit 2 is a Soils Map illustrating the soils contained within the study area based on the soil survey. As can be seen

by the table below, with the exception of one soil type, all of the study area has been rated to be “very limited” for on-site sewage disposal.

| TABLE 2 SOIL SUITABILITY FOR ON-LOT DISPOSAL SYSTEMS | | |
|---|--------------------------------|--|
| Map Symbol | Mapping Unit | Rating - Limitation for Sewage Effluent Disposal by On-Site Septic Tank |
| Bo | Bowmansville-Knauers Silt Loam | Very Limited |
| CyB | Croton Silt Loam, 3-8% slopes | Very Limited |
| Gb | Gibraltar Silt Loam | Somewhat Limited |
| PeB | Penn Silt Loam, 3-8% slopes | Very Limited |
| PeC | Penn Silt Loam, 8-15% slopes | Very Limited |
| PeD | Penn Silt Loam, 15-25% slopes | Very Limited |
| Ro | Rowland Silt Loam | Very Limited |

3.4 Chester County Health Department Data on OLDS

The Chester County Health Department (CCHD) is the “local agency” responsible for administering the on-lot sewage disposal program in East Vincent Township. Enforcement of the program is through permitting, inspection, and complaint response.

Many of the existing OLDS throughout the study area were constructed prior to current PADEP design criteria. Those system types likely include seepage pits, seepage trenches, cesspools, and seepage beds. The permitted systems within the study area include the following:

- ZX161409 – Holding Tank – Approved on 1/4/2019
- Z162573 – Alternate System: At Grade Bed – Approved on 6/25/2015
- T018070 – Conventional System: Elevated Sand Mound Bed – Approved on 9/21/2004
- W004429 – Alternate System: Drip Irrigation – Approved on 5/31/2007
- 3202 Schuylkill Road – Holding Tank – Approved 11/30/2021

The Chester County Health Department maintains two databases of information pertaining to on-lot disposal systems. The one database is referred to as the Chester County Septage Management Data System. This database contains septic tank pumping information such as frequency, volume, and location. The second database is a Permit System database and contains information regarding repairs. Repairs can be for two reasons: either a malfunction or an unsatisfactory certification. A malfunction is identified when sewage is leaking onto the surface of the ground or backing up into the house. Should the reason for the leakage be

that the soils can no longer remediate the effluent being sent into the absorption area, the evidence for the need of a new system is then present. An unsatisfactory certification is a label given through an inspection of the system by a private septic certifier. It is not evident that a system needs to be replaced. However, it is an indication that there may be a potential or existing problem. For the purposes of this study, the CCHD prepared a plan illustrating a variety of OLDS information. The two databases together were used to create this plan which is contained in Appendix A. The Plan indicated the following for properties within the study area:

- a. Parcels reporting pumping information. These parcels were further identified by pumping frequency.
- b. Reported system failures.
- c. Certification failures. These failures are typically identified when a system inspection is performed for a property transfer.
- d. Permitted system identification numbers which are described previously.
- e. Parcels not reporting pumping information. The sewer system type was then identified for each of these parcels. The system types included: On-lot, Municipal, None (vacant land).

Based on the CCHD data, there appears to be several properties within the study area having a high pumping frequency, system failure, certification failure, and two properties are currently utilizing holding tanks. As a result, the data provided by the CCHD helps justify the need for extension of public sewer service to the Brown Drive/Old Schuylkill Road area.

4.0 ALTERNATIVES ANALYSIS

The primary alternative to this project would be to take “No Action” and allow the Brown Drive/Old Schuylkill Road area to continue to be served by on-lot disposal systems. However, the “No Action” alternative would result in the continuation of failing on-lot disposal systems and the chronic operation and maintenance associated with the systems in this area, including frequent pumping. This would also mean allowing the failing OLDS to threaten to pollute the individual private wells providing potable water to the homes in the area as well as the nearby Schuylkill River and Patty’s Run tributary. Due to the operational, maintenance, and environmental benefits of extending public sewer service to the Brown Drive/Old Schuylkill Road area, the “No Action” alternative has not been selected.

It is also worth noting that a gravity sewer system was considered to serve the project area. However, due to several factors, this alternative was not selected. The factors include:

- More expensive than LPSS due to system components and installation costs. Estimated to be an additional \$10,000 or more per EDU compared to LPSS.
- Sewage pumping station and force main pipe required for conveyance to connection with existing sanitary sewer system.
- Larger size pipe system. 8” gravity sewers compared to 2” to 4” LPSS.
- More disturbance during construction due to trench depths. Gravity sewer depths were more than 20’ deep in some areas compared to 4’ depth of LPSS.
- More easements needed for sewage pumping station and gravity service to some properties.
- Several properties still requiring a grinder pump for service.

5.0 FINANCING

The cost to construct the Brown Drive/Old Schuylkill Road Sanitary Sewer Project is estimated to be approximately \$2,380,620. This cost includes construction, engineering and permitting. Attached in Appendix B is a table detailing CKS’s project cost estimate. Additionally, the cost of tapping fees for the project is calculated to be \$227,850. This is based on 49 EDUs at \$4,650 per EDU. Please note these tapping fees only include the capacity portion of the Township’s tapping fees. It is anticipated that the collection component of the tapping fees would be waived. As a result, the total cost for the Brown Drive/Old

Schuylkill Road Sanitary Sewer Project, including construction, engineering, and tapping fees, is estimated to be \$2,608,470.

The Township has been awarded a DCED H2O PA Grant in the amount of \$926,000 to partially fund the project. The remaining amount will be paid by the respective property owners to be served by the sewer system through connection fees and assessments based upon their proportionate share of the project costs.

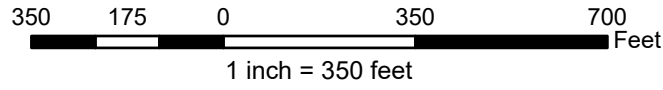
6.0 IMPLEMENTATION SCHEDULE

The schedule for the Brown Drive/Old Schuylkill Road Sanitary Sewer Project is as follows:

- April 2022 – Consideration by the East Vincent Planning Commission
- May 2022 – Approval/adoption by the East Vincent Board of Supervisors
- March/April 2022 – 30-day public comment period
- May 2022 – Advertise and Bid Construction Project
- June 2022 – Receive Construction Bids
- June 2022 – Contract Award
- July 2022 – Begin Construction
- January 2023 – Construction Completion (Public Bid Portion)
- April 2023 – Construction Completion (Private Property Portion)

APPENDIX A

EXHIBITS



Legend

- Exist. Sanitary Manhole (EVT)
- 2" LPSS Forcemain
- 3" LPSS Forcemain
- 4" LPSS Forcemain
- Hydrology
- Exist. Gravity Sewer (EVT)
- Exist. Force Main
- Proposed Service Area
- 5 Ft. Contours
- Township Boundary
- Roads
- ▨ Improved Lots - Proposed to be Sewered
- Ⓜ Proposed Public Sewer Connection Number

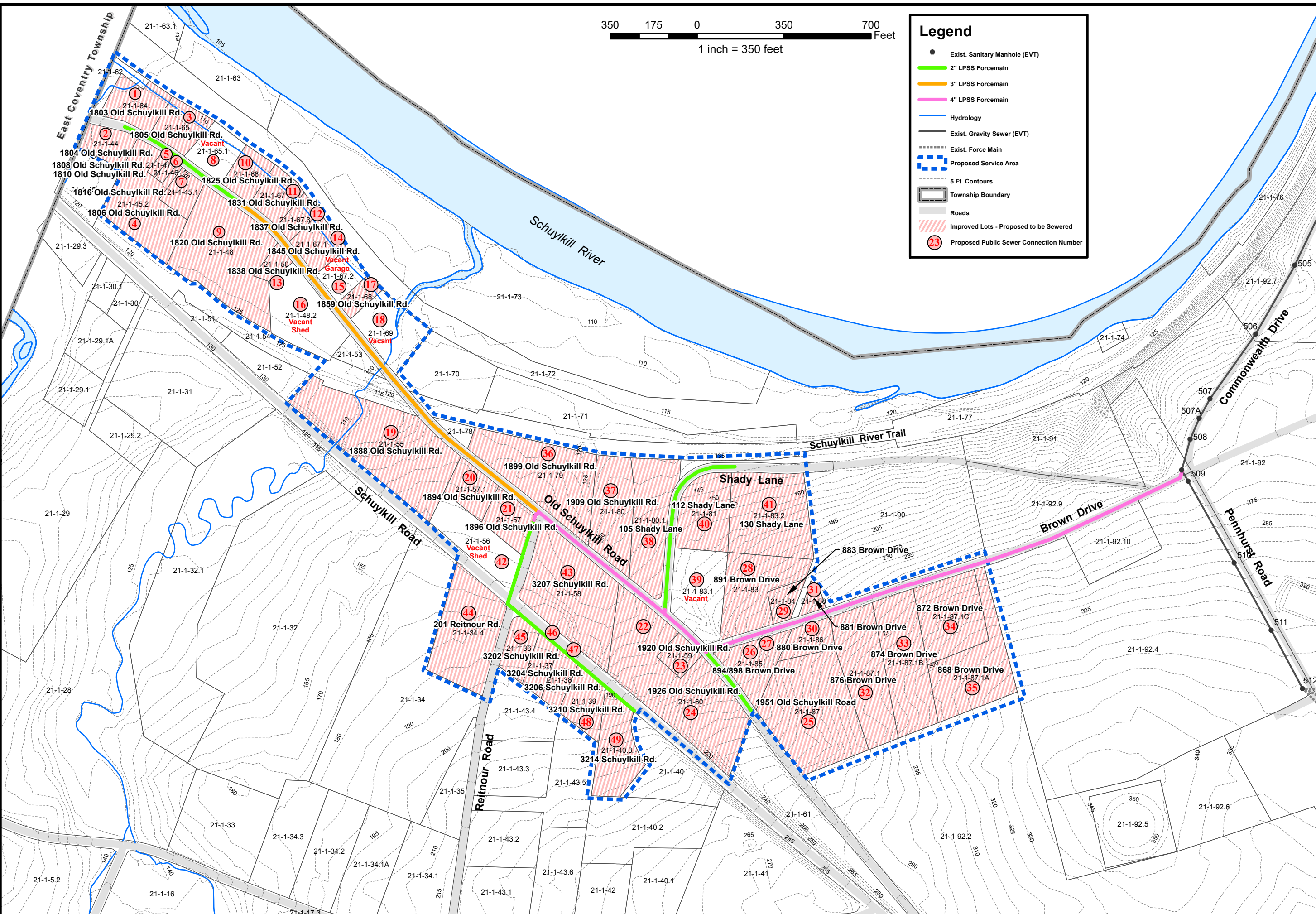
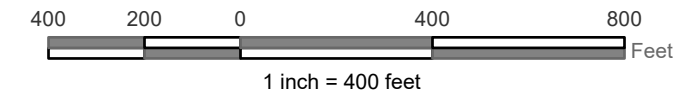


EXHIBIT 1 - PUBLIC SEWER SERVICE EXHIBIT
ACT 537 - SPECIAL STUDY FOR BROWN DRIVE/OLD SCHUYLKILL ROAD
SANITARY SEWER PROJECT
EAST VINCENT TOWNSHIP, CHESTER COUNTY, PA.

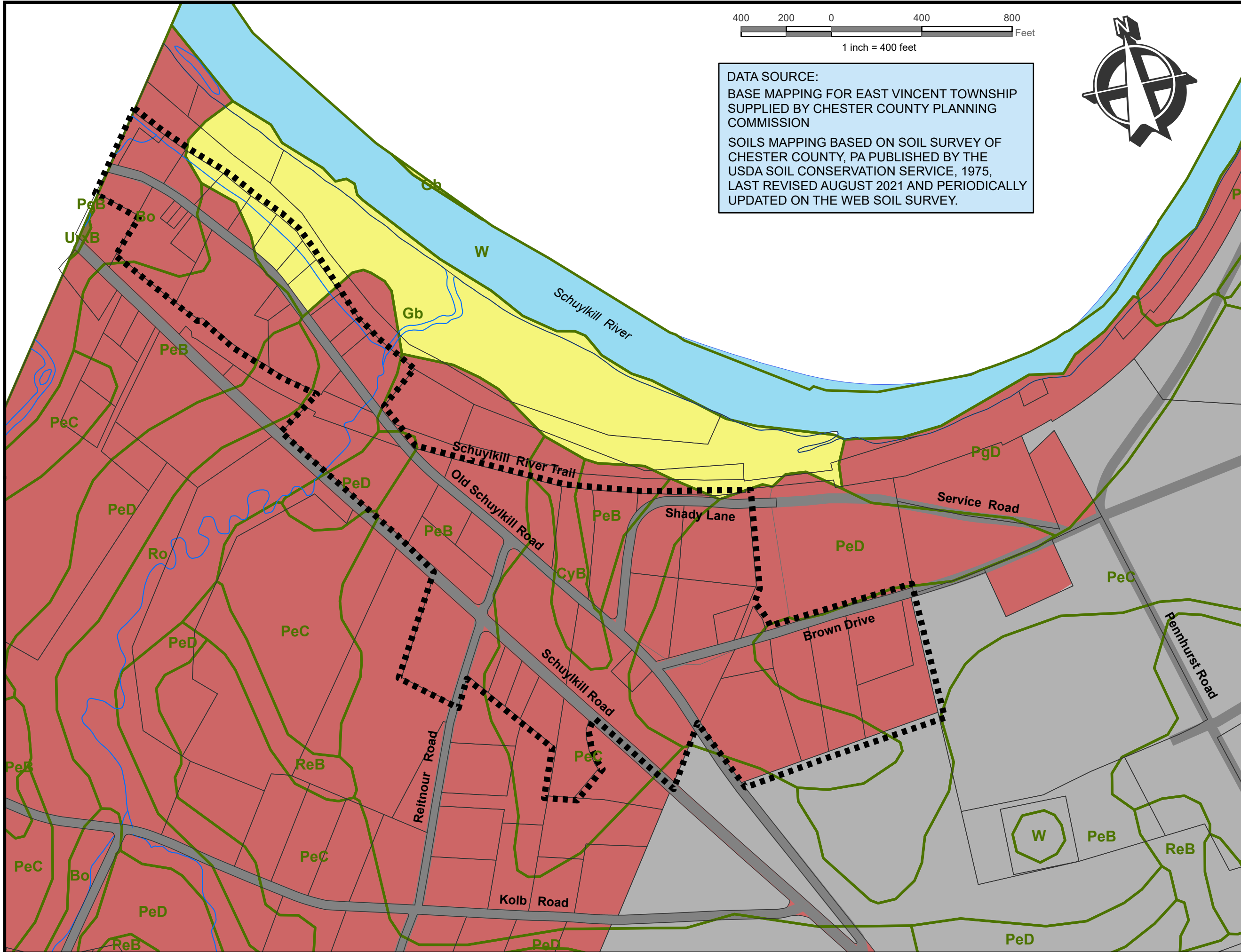
EXHIBIT 2

Soils Map

Act 537
Special Study for Brown Drive
/Old Schuylkill Road
Sanitary Sewer Project
East Vincent Township
Chester County, PA



DATA SOURCE:
BASE MAPPING FOR EAST VINCENT TOWNSHIP
SUPPLIED BY CHESTER COUNTY PLANNING
COMMISSION
SOILS MAPPING BASED ON SOIL SURVEY OF
CHESTER COUNTY, PA PUBLISHED BY THE
USDA SOIL CONSERVATION SERVICE, 1975,
LAST REVISED AUGUST 2021 AND PERIODICALLY
UPDATED ON THE WEB SOIL SURVEY.



- Legend**
- Township Boundary
 - Hydrology
 - Roads
 - Public Sewer Service Area
 - Proposed Service Area

- Soils**
- Bo - Bowmansville-Knauers Silt Loam
 - CyB - Croton Silt Loam, 3-8% Slope
 - Gb - Gibraltar Silt Loam
 - PeB - Penn Silt Loam, 3-8% Slope
 - PeC - Penn Silt Loam, 8-15% Slope
 - PeD - Penn Silt Loam, 15-25% Slope
 - Ro - Rowland Silt Loam
 - W - Water

- Soils Limitations for Sewage Effluent Disposal by On-Site Septic Tank**
- Very Limited
 - Somewhat Limited
 - Not Rated

East Vincent Township Septic System Pump Activity and Sewer Service By Parcel

EXHIBIT 3



Legend

Failures

Reason

- ▲ Malfunction
- ▲ Unsatisfactory Certification

Parcels Reporting Pumps

- 1 Pump
- 2 or more Pumps

Parcels not Reporting Pumps

- On Lot
- Municipal
- None (Vacant)

Map Produced By:
Chester County Health Dept.
9/15/21

CCHD



Limitation of Liability and Use:
County of Chester, Pennsylvania makes no claims as to the completeness, accuracy or content of any data contained hereon, and makes no representation of any kind, including, but not limited to, the warranties of merchantability or fitness for a particular use, nor are any such warranties to be implied or inferred with respect to the information or data furnished herein.



1 inch = 800 feet

APPENDIX B

PROJECT COST ESTIMATE

APPENDIX B

| EAST VINCENT TOWNSHIP BROWN DRIVE/OLD SCHUYLKILL ROAD PRELIMINARY SEWER PROJECT LOW PRESSURE SANITARY SEWER ALTERNATIVE PROJECT COST ESTIMATE | | | | |
|---|---|----------|------------|------------|
| ITEM NO. | DESCRIPTION | QUANTITY | UNIT COST | TOTAL COST |
| CONSTRUCTION COSTS – PUBLIC BID PORTION | | | | |
| 1 | 2" HDPE (SDR-11) Force Main (LPSS) within Paved Township Roadways, including Excavation and Backfill | 1,650 LF | \$60/LF | \$99,000 |
| 2 | 2" HDPE (SDR-11) Force Main (LPSS) within Unimproved Areas of Township Rights-of-Way, including Excavation and Backfill | 320 LF | \$50/LF | \$16,000 |
| 3 | 2" HDPE (SDR-11) Force Main (LPSS) within Paved State Highways, including Excavation and Backfill | 50 LF | \$70/LF | \$3,500 |
| 4 | 2" HDPE (SDR-11) Force Main (LPSS) within Unimproved Areas of State Highway Rights-of-Way, including Excavation and Backfill | 700 LF | \$70/LF | \$49,000 |
| 5 | 3" HDPE (SDR-11) Force Main (LPSS) within Paved Township Roadways, including Excavation and Backfill | 1,750 LF | \$70/LF | \$122,500 |
| 6 | 3" HDPE (SDR-11) Force Main (LPSS) within Unimproved Areas of Township Rights-of-Way, including Excavation and Backfill | 50 LF | \$55/LF | \$2,750 |
| 7 | 4" HDPE (SDR-11) Force Main (LPSS) within Paved Township Roadways, including Excavation and Backfill | 3,000 LF | \$75/LF | \$225,000 |
| 8 | 1¼" HDPE (SDR-11) Force Main (LPSS) Lateral within Paved Township Roadways, including Excavation and Backfill | 430 LF | \$55/LF | \$23,650 |
| 9 | 1¼" HDPE (SDR-11) Force Main (LPSS) Lateral within Unimproved Areas of Township Rights-of-Way, including Excavation and Backfill | 430 LF | \$50/LF | \$21,500 |
| 10 | 1¼" HDPE (SDR-11) Force Main (LPSS) Lateral within Unimproved Areas of State Highway Rights-of-Way, including Excavation and Backfill | 70 LF | \$65/LF | \$4,550 |
| 11 | Terminal Cleanout Assembly | 4 EA | \$2,500/EA | \$10,000 |
| 12 | Intermediate Cleanout Assembly | 9 EA | \$5,500/EA | \$49,500 |
| 13 | 3-Way Cleanout Assembly | 3 EA | \$8,500/EA | \$25,500 |
| 14 | Air Release Chamber | 3 EA | \$7,000/EA | \$21,000 |
| 15 | Thrust Blocks and Concrete Anchors | 30 EA | \$50/EA | \$1,500 |
| 16 | Force Main Pipe Connection and Alteration to Existing Manhole | 1 EA | \$5,000/EA | \$5,000 |
| 17 | LPSS Lateral Assembly for Individual Force Main | 49 EA | \$900/EA | \$44,100 |
| 18 | Bituminous Driveway Replacement | 100 SY | \$50/SY | \$5,000 |
| 19 | Temporary Pavement Replacement | 4,000 SY | \$10/SY | \$40,000 |

| ITEM NO. | DESCRIPTION | QUANTITY | UNIT COST | TOTAL COST |
|---|--|-----------|------------|-------------|
| 20 | Permanent Pavement Trench Restoration in Township Road (Base Course Only) | 6,000 SY | \$55/SY | \$330,000 |
| 21 | Pavement Milling and 1½" Superpave Overlay | 12,600 SY | \$15/SY | \$189,000 |
| 22 | Unimproved Area Restoration | 2,000 SY | \$10/SY | \$20,000 |
| 23 | Pavement Markings | LS | LS | \$10,000 |
| 24 | Traffic Control | LS | LS | \$30,000 |
| 25 | Erosion and Sedimentation Controls | LS | LS | \$30,000 |
| SUBTOTAL - CONSTRUCTION COST | | | | \$1,378,050 |
| 5% CONTINGENCIES | | | | \$68,900 |
| TOTAL PUBLIC BID - CONSTRUCTION COST | | | | \$1,446,950 |
| CONSTRUCTION COSTS – PRIVATE PROPERTY PORTION | | | | |
| 26 | Individual Grinder Pump System, including Installation and Modifications/Connection to Existing Building Sewer | 49 EA | \$8,600/EA | \$421,400 |
| 27 | 1¼" (Sch 40) PVC Individual Force Main Lateral - Grinder Pump to Lateral Connection | 49 EA | \$1,500/EA | \$73,500 |
| 28 | Abandonment of OLDS | 42 EA | \$1,000/EA | \$42,000 |
| TOTAL PRIVATE PROPERTY - CONSTRUCTION COST | | | | \$536,900 |
| TOTAL PROJECT COSTS | | | | |
| TOTAL PROJECT - CONSTRUCTION COST | | | | \$1,983,850 |
| ENGINEERING DESIGN/PERMITTING/PREPARATION OF BID DOCUMENTS (10% OF CONSTRUCTION) | | | | \$198,385 |
| CONSTRUCTION MANAGEMENT AND INSPECTION (10% OF CONSTRUCTION) | | | | \$198,385 |
| TOTAL PROJECT COST | | | | \$2,380,620 |

Note: The above is an ESTIMATE of costs and not actual project costs. Actual cost will not be known until project construction.

APPENDIX C

PUBLIC NOTICE, COMMENTS, AND RESPONSE TO COMMENTS

NOTICE

NOTICE IS HEREBY GIVEN that the “Township of East Vincent, Chester County, Pennsylvania, Act 537 Sewage Facilities Planning – Special Study” is available for review and comment by the public through April 27, 2022. This Special Study provides the planning necessary for the Brown Drive/Old Schuylkill Road Sanitary Sewer Project. The project proposes the extension of public sewers to serve portions of Old Schuylkill Road, Brown Drive, Shady Lane, and Schuylkill Road. The extension will involve the construction of a Low Pressure Sewer System (LPSS) consisting of force main piping and individual gravity pumping systems. The Special Study is available for inspection at the East Vincent Township Municipal Building located at 262 Ridge Road, Spring City, PA 19475 during regular business hours; 8:00 AM to 4:00 PM, Monday through Friday. Written comments on the proposed Act 537 Sewage Facilities – Special Study will be accepted by the Township at the same address.

Catherine Ricardo
Township Manager

APPENDIX D

MUNICIPAL ADOPTION RESOLUTION

RESOLUTION NO. _____

**TOWNSHIP OF EAST VINCENT
CHESTER COUNTY, PENNSYLVANIA**

(hereinafter referred to as “the Municipality”)

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

WHEREAS, the Township of East Vincent has prepared an Act 537 Sewage Facilities Planning – Special Study which provides for the extension of public sewers to serve the Brown Drive/Old Schuylkill Road area of the Township. The project is located in the northeast corner of East Vincent Township and includes portions of Old Schuylkill Road, Brown Drive, Shady Lane, and Schuylkill Road. The area contains a total of 49 dwelling units to be potentially served throughout 47 parcels. The area is currently served by On-Lot Disposal Systems (OLDS). Public sewer service to the area will be provided through a Low Pressure Sewer System (LPSS) consisting of force main pipe and forty-nine (49) individual grinder pumping systems. The system will discharge to the Township’s existing gravity interceptor in Commonwealth Drive for conveyance and treatment at the Township’s Veterans Center Wastewater Treatment Plant.

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

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of East Vincent Township hereby adopt and submit to the Department of Environmental Protection for its approval as an update and revision to the “Official Plan” of the Municipality, the above-referenced Sewage Facilities Planning – Special Study. The Township hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended.)

ADOPTED as a resolution by the Board of Supervisors of East Vincent Township this ____ day of _____, 2022.

EAST VINCENT TOWNSHIP BOARD OF SUPERVISORS

Craig A. Damon, II, Chairman

Catherine Ricardo, Township Manager

APPENDIX E

CONSISTENCY EVALUATION

APPENDIX E

CONSISTENCY DETERMINATION OF SELECTED ALTERNATIVE

A Consistency determination between the Brown Drive/Old Schuylkill Road Area Sanitary Sewer Project (selected alternative) and other programs has been performed and is outlined in Table 3 below. Consistency with other programs assures the selected alternative is appropriate and can be implemented. As indicated in the table, review requests have also been submitted to the Pennsylvania Natural Diversity Inventory and the Pennsylvania Historical and Museum Commission.

| TABLE 3 CONSISTENCY DETERMINATION FOR SELECTED ALTERNATIVE | | | |
|---|--------------------|-----------|---|
| POLICY | CONSISTENCY | | COMMENTS |
| | YES | NO | |
| 1. Comprehensive Water Quality Management Plans (COWAMP/208) | X | | The Brown Drive/Old Schuylkill Road Sanitary Sewer Project meets the overall management plan goals of this area of the region. |
| 2. Municipal Wasteload Management Plans (PA Code, Title 25, Chapter 94) | X | | Capacity availability in sewage treatment plant, pumping stations, collection and conveyance lines proposed to handle additional wasteload as a result of this plan have been evaluated and addressed. |
| 3. Title II Act 201 Plans | X | | The Brown Drive/Old Schuylkill Road Sanitary Sewer Project meets the overall management study goals of this area of the region. Increases in flows to treatment facility from planning area will not affect treatment technologies. |
| 4. Municipal Comprehensive Plans | X | | This Special Study was prepared in accordance with the East Vincent Township Comprehensive Plan; the Phoenixville Area Regional Comprehensive Plan; and the land use objectives established by those plans. |

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| 5. Chapters 93, 95 and 102 Antidegradation Requirements | X | | No discharge to special protection waters is proposed. Appropriate erosion and sedimentation control measures will be enforced during any construction activities. It is also important to note that implementation of this project will help protect the water quality of the Schuylkill River and the Patty's Run tributary. |
| 6. State Water Plan | X | | No significant water quantity or quality problems have been identified within the planning area. Potential well contamination incidents influenced by on-lot sewerage disposal system problems will be mitigated through public sewer service to the study area. |
| 7. Prime Agricultural Land | X | | The Soils Map contained in Appendix A identifies soil types within the study area. The Brown Drive/Old Schuylkill Road Sanitary Sewer Project will not impact existing Prime Agricultural Land. |
| 8. Stormwater Management Plans | X | | All construction activity associated with the Brown Drive/Old Schuylkill Road Sanitary Sewer Project will comply with East Vincent Township's Stormwater Management Ordinance and the requirements of Act 167 Watershed Stormwater Management Plans. |
| 9. Wetland Protection | X | | Wetland areas within the project area will be identified prior to construction. Encroachment permits will be obtained, if necessary, prior to construction of any new sewerage facilities. |
| 10. PA Natural Diversity Inventory | X | | See attached Exhibit. |
| 11. Archaeological Protection | X | | See attached Exhibit. |