
EXHIBIT P4

EAST WHITELAND TOWNSHIP – ACT 537 PLAN DOCUMENTS
(SPECIAL STUDY 2015)

East Whiteland Township/ Great Valley Corporate Center Act 537 Special Study

April 2015

(Revised September 2015)

Engineer's Project No. 10310.09

Prepared By:



ARRO Consulting, Inc.

649 North Lewis Road, Suite 100

Limerick, PA 19468



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

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 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 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 Process (UER) 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 *Uniform Environmental Review Process* (UER) (DEP ID. 381-5511-111) is available electronically on DEP's website at www.dep.state.pa.us.

After Municipal Adoption by Resolution, submit three 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.



COMMONWEALTH OF PENNSYLVANIA
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Act 537 Plan Content and Environmental Assessment Checklist

PART 1 GENERAL INFORMATION

A. Project Information

1. Project Name East Whiteland Township

2. Brief Project Description Act 537 Special Study - Great Valley Corporate Campus; Infrastructure improvements in East Whiteland Township to accommodate future wastewater needs and flows originating in the GVCC and adjacent properties.

B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
East Whiteland Township	Chester	☐	☐	☒

Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Nagel	John			Township Manager

Additional Individual Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1 209 Conestoga Road	Mailing Address Line 2
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Address Last Line -- City Frazer	State PA	ZIP+4 19355
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Phone + Ext. 610-648-0600	FAX (optional)	Email (optional)
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C. Site Information

Site (or Project) Name Great Valley Corporate Campus Special Study	(Municipal Name) Act 537 Plan
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Site Location Line 1 Northeastern Portion of Township	Site Location Line 2
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D. Project Consultant Information

Last Name Bohner	First Name William	MI L	Suffix Jr
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Title Project Engineer	Consulting Firm Name ARRO Consulting, Inc.
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Mailing Address Line 1 649 N. Lewis Road	Mailing Address Line 2 Suite 100
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Address Last Line -- City Limerick	State PA	ZIP+4 19468	Country USA
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Email bill.bohner@thearrogroup.com	Phone + Ext. 610-495-2102	FAX 610-495-5855
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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 the department. Incomplete Plans will be returned unless the municipality is clearly requesting an advisory review.
_____	<u>i</u>	1. Table of Contents
_____	<u>1,2</u>	2. Plan Summary
_____	<u>2</u>	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - Title 25, §71.21.a.7.i).
_____	<u>2</u>	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference Title 25 §71.21.a.7.ii).
_____	<u>2</u>	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference Title 25, §71.21.a.7.ii).
_____	<u>2</u>	D. Identify the municipal commitments necessary to implement the Plan. (Reference Title 25, §71.21.a.7.iii).
_____	<u>3</u>	E. Provide a schedule of implementation for the project that identifies the MAJOR milestones with dates necessary to accomplish the project to the point of operational status. (Reference Title 25, §71.21.a.7.iv).
_____	<u>App. N</u>	3. Municipal Adoption: Original , signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference Title 25, §71.31.f) Section V.F. of the Planning Guide.
_____	<u>App. K</u>	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-Title 25, §71.31.b) Section V.E.1 of the Planning Guide.
_____	<u>App. L</u>	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-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>App. M</u>	6. Comments and Responses: Copies of ALL written comments received and municipal response to EACH comment in relation to the proposed plan. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>3</u>	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-Title 25, §71.31.d) Section V.F. of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference Title 25, §71.21.c).
_____	<u>App. H, I</u>	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 71.21.(a)(5)(i-iii). (Reference-Title 25, §71.31.e). Appendix B of the Planning Guide.

PART 3 GENERAL PLAN CONTENT CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	Item Required
<u> </u>	<u>4</u>	I. Previous Wastewater Planning
<u> </u>	<u>4</u>	A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
<u> </u>	<u>4</u>	1. Previously undertaken under the Sewage Facilities Act (Act 537). (Reference-Act 537, Section 5 §d.1).
<u> </u>	<u>4</u>	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference-Title 25, §71.21.a.5.i.A-D). Section V.F of the Planning Guide.
<u> </u>	<u>5</u>	3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference-Title 25, §71.21.a.5.i.A&B). Section V.D. of the Planning Guide.
<u> </u>	<u>5</u>	4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference-Title 25, §71.21.a.5.i.A).
<u> </u>	<u>7</u>	II. Physical and Demographic Analysis utilizing written description and mapping (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
<u> </u>	<u>7</u>	A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference-Title 25, §71.21.a.1.i).
<u> </u>	<u>7</u>	B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference-Title 25, §71.21.a.1.ii).
<u> </u>	<u>7</u>	C. Soils - Analysis with description by soil type and soils mapping for areas not presently served by sanitary sewer service. Show areas suitable for in-ground onlot systems, elevated sand mounds, individual residential spray irrigation systems, and areas unsuitable for soil dependent systems. (Reference-Title 25, §71.21.a.1.iii). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference-Title 25, §71.21.a.1.iii).
<u> </u>	<u>8</u>	D. Geologic Features - (1) Identification through analysis, (2) mapping and (3) their relation to existing or potential nitrate-nitrogen pollution and drinking water sources. Include areas where existing nitrate-nitrogen levels are in excess of 5 mg/L. (Reference-Title 25, §71.21.a.1.iii).
<u> </u>	<u>8</u>	E. Topography - Depict areas with slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for onlot systems. (Reference-Title 25, §71.21.a.1.ii).
<u> </u>	<u>8</u>	F. Potable Water Supplies - Identification through mapping, description and analysis. Include public water supply service areas and available public water supply capacity and aquifer yield for groundwater supplies. (Reference-Title 25 §71.21.a.1.vi). Section V.C. of the Planning Guide.
<u> </u>	<u>8</u>	G. Wetlands-Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per USDA, SCS mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference-Title 25, §71.21.a.1.v). Appendix B, Section II.I of the Planning Guide.

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| | <u>9</u> | <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> |
| | <u>9</u> | <p>1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference-Title 25, §71.21a.2.i.A).</p> |
| | <u>9</u> | <p>2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's NPDES permitted capacity, and the Clean Streams Law permit number. (Reference-Title 25, §71.21.a.2.i.A).</p> |
| | <u>9</u> | <p>3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under Title 25, Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference-Title 25, §71.21.a.2.i.B).</p> |
| | <u>10</u> | <p>4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.i & ii).</p> |
| | <u>11</u> | <p>5. A detailed description of the municipality's operation and maintenance requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).</p> |
| | <u>11</u> | <p>6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference-Title 25, §71.21.a.4.i & ii).</p> |
| | <u>11</u> | <p>B. Using DEP's publication titled <i>Sewage Disposal Needs Identification</i>, identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:</p> |
| | <u>11</u> | <p>1. The types of onlot systems in use. (Reference-Title 25, §71.21.a.2.ii.A).</p> |
| | <u>11</u> | <p>2. A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Sewage Facilities Act, the Clean Stream Law or regulations promulgated thereunder. (Reference-Title 25, §71.21.a.2.ii.B).</p> |
| | <u>11</u> | <p>3. A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and Title 25 Chapter 73 (relating to standards for sewage disposal facilities). (Reference-Title 25, §71.21.a.2.ii.C).</p> |
| | <u>11</u> | <p>4. An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's <i>Sewage Disposal Needs Identification</i> publication. (Reference-Title 25 §71.21.a.2.ii.B).</p> |
| | <u>11</u> | <p>5. Detailed description of operation and maintenance requirements of the municipality for individual and small volume community onlot systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).</p> |

- 12 C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:
- 12 1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference-Title 25 §71.71).
- 12 2. Quantities of the types of sludges or septage generated. (Reference-Title 25 §71.71).
- 12 3. Present disposal methods, locations, capacities and transportation methods. (Reference-Title 25 §71.71).
- 13 **IV. Future Growth and Land Development**
- 13 A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
- 13 1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference-Title 25, §71.21.a.3.iv).
- 13 2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference – Title 25§71.21.a.3.iv).
- 14 3. All limitations and plans related to floodplain and stormwater management and special protection (Ch. 93) areas. (Reference-Title 25 §71.21.a.3.iv) Appendix B, Section II.F of the Planning Guide.
- 14 B. Delineate and describe the following through map, text and analysis.
- 14 1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of EDU's in development, total number of EDU's currently developed and total number of EDU's remaining to be developed (include time schedule for EDU's remaining to be developed). (Reference-Title 25, §71.21.a.3.i).
- 15 2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas. (Reference-Title 25,§71.21.a.3.ii). Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference-Title 25, §71.21.a.3.iv).
- 16,17 3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference-Title 25, §71.21.a.1.iv). (Reference-Title 25, §71.21.a.3.iii).
- 14 4. Zoning, and/or subdivision regulations; local, county or regional comprehensive plans; and existing plans of any other agency relating to the development, use and protection of land and water resources with special attention to: (Reference-Title 25, §71.21.a.3.iv).
- public ground/surface water supplies
 - recreational water use areas
 - groundwater recharge areas
 - industrial water use
 - wetlands
- 18 5. Sewage planning necessary to provide adequate wastewater treatment for five and ten year future planning periods based on projected growth of existing and proposed wastewater collection and treatment facilities. (Reference-Title 25, §71.21.a.3.v).

<u>20</u>	V. Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities
<u>20</u>	A. Conventional collection, conveyance, treatment and discharge alternatives including:
<u>20</u>	1. The potential for regional wastewater treatment. (Reference-Title 25, §71.21.a.4).
<u>20</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-Title 25, §71.21.a.4.i).
<u>20</u>	3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference-Title 25, §71.21.a.4.ii).
<u>20</u>	a. Repair. (Reference-Title 25, §71.21.a.4.ii.A).
<u>20</u>	b. Upgrading. (Reference-Title 25, §71.21.a.4.ii.B).
<u>20</u>	c. Reduction of hydraulic or organic loading to existing facilities. (Reference-Title 25, §71.71).
<u>20</u>	d. Improved operation and maintenance. Reference-Title 25, §71.21.a.4.ii.C).
<u>20</u>	e. Other applicable actions that will resolve or abate the identified problems. (Reference-Title 25, §71.21.a.4.ii.D).
<u>20</u>	4. Repair or replacement of existing collection and conveyance system components. (Reference-Title 25, §71.21.a.4.ii.A).
<u>21</u>	5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference-Title 25, §71.21.a.4.iii).
<u>23</u>	6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.ii.B).
<u>23</u>	B. The use of individual sewage disposal systems including individual residential spray irrigation systems based on:
<u>23</u>	1. Soil and slope suitability. (Reference-Title 25, §71.21.a.2.ii.C).
<u>23</u>	2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
<u>23</u>	3. The establishment of a sewage management program. (Reference-Title 25, §71.21.a.4.iv). See also Part "F" below.
<u>23</u>	4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference-Title 25, §71.21.a.4).
<u>23</u>	a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference-Title 25, §73.31-73.72).
<u>23</u>	b. Use of expanded absorption areas or alternating absorption areas. (Reference-Title 25, §73.16).
<u>23</u>	c. Use of water conservation devices. (Reference-Title 25, §71.73.b.2.iii).
<u>23</u>	C. The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes with consideration of: (Reference-Title 25, §71.64.d).
<u>23</u>	1. Treatment and discharge requirements. (Reference-Title 25, §71.64.d).
<u>23</u>	2. Soil suitability. (Reference-Title 25, §71.64.c.i).

- 23 3. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.64.c.2).
- 23 4. Municipal, Local, Agency or other controls over operation and maintenance requirements through a Sewage Management Program. (Reference-Title 25, §71.64.d). See Part "F" below.
- 23 D. The use of community land disposal alternatives including:
- 23 1. Soil and site suitability. (Reference-Title 25, §71.21.a.2.ii.C).
- 23 2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
- 23 3. Municipality, Local Agency or Other Controls over operation and maintenance requirements through a Sewage Management Program (Reference-Title 25, §71.21.a.2.ii.C). See Part "F" below.
- 23 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.
- 23 E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference-Title 25, §71.21.a.4).
- 23 1. Commercial, residential and industrial use. (Reference-Title 25, §71.63.e).
- 23 2. Designated conveyance facilities (pumper trucks). (Reference-Title 25, §71.63.b.2).
- 23 3. Designated treatment facilities or disposal site. (Reference-Title 25, §71.63.b.2).
- 23 4. Implementation of a retaining tank ordinance by the municipality. (Reference-Title 25, §71.63.c.3). See Part "F" below.
- 23 5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference-Title 25, §71.63.c.2).
- 23 F. Sewage Management Programs to assure the future operation and maintenance of existing and proposed sewage facilities through:
- 23 1. Municipal ownership or control over the operation and maintenance of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference-Title 25, §71.21.a.4.iv).
- 23 2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference-Title 25, §71.73.b.1.).
- 23 3. Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule established by the municipality. (Reference-Title 25, §71.73.b.2).
- 23 4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference-Title 25, §71.21.a.4.iv) and §71.73.b.5 through:
- 23 a. Aggressive pro-active enforcement of ordinances that require operation and maintenance and prohibit malfunctioning systems. (Reference-Title 25, §71.73.b.5).
- 23 b. Public education programs to encourage proper operation and maintenance and repair of sewage disposal systems.
- 23 5. Establishment of joint municipal sewage management programs. (Reference-Title 25, §71.73.b.8).
- 23 6. Requirements for bonding, escrow accounts, management agencies or associations to assure operation and maintenance for non-municipal facilities. (Reference-Title 25, §71.71).

- 24 G. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference-Title 25, §71.21.a.4).
1. Modification of existing comprehensive plans involving:
 - a. Land use designations. (Reference-Title 25, §71.21.a.4).
 - b. Densities. (Reference-Title 25, §71.21.a.4).
 - c. Municipal ordinances and regulations. (Reference-Title 25, §71.21.a.4).
 - d. Improved enforcement. (Reference-Title 25, §71.21.a.4).
 - e. Protection of drinking water sources. (Reference-Title 25, §71.21.a.4).
 2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference-Title 25, §71.21.a.4).
 - 24 3. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal that consider lot sizes and protection of replacement areas. (Reference-Title 25, §71.21.a.4).
 - 24 4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference-Title 25, §71.21.a.4).
 - 24 H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference-Title 25, §71.21.a.4).
 - 24 1. Water Quality/Public Health. (Reference-Title 25, §71.21.a.4).
 - 24 2. Growth potential (residential, commercial, industrial). (Reference-Title 25, §71.21.a.4).
 - 24 3. Community economic conditions. (Reference-Title 25, §71.21.a.4).
 - 24 4. Recreational opportunities. (Reference-Title 25, §71.21.a.4).
 - 24 5. Drinking water sources. (Reference-Title 25, §71.21.a.4).
 - 24 6. Other environmental concerns. (Reference-Title 25, §71.21.a.4).
 - 26 VI. Evaluation of Alternatives
 - A. Technically feasible alternatives identified in Section V of this check-list must be evaluated for consistency with respect to the following: (Reference-Title 25, §71.21.a.5.i.).
 - 26 1. Applicable plans developed and approved under **Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act** (33 U.S.C.A. 1288). (Reference-Title 25, §71.21.a.5.i.A). Appendix B, Section II.A of the Planning Guide.
 - 26 2. Municipal wasteload management **Corrective Action Plans or Annual Reports** developed under PA Code, Title 25, Chapter 94. (Reference-Title 25, §71.21.a.5.i.B). The municipality's recent Wasteload Management (Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. Appendix B, Section II.B of the Planning Guide.
 - 27 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-Title 25, §71.21.a.5.i.C). Appendix B, Section II.E of the Planning Guide.

- 27
4. **Comprehensive plans** developed under the Pennsylvania Municipalities Planning Code. (Reference-Title 25, §71.21.a.5.i.D). The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II.D of the Planning Guide.
- 28
5. **Antidegradation requirements** as contained in PA Code, Title 25, Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference-Title 25, §71.21.a.5.i.E). Appendix B, Section II.F of the Planning Guide.
- 28
6. **State Water Plans** developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference-Title 25, §71.21.a.5.i.F). Appendix B, Section II.C of the Planning Guide.
- 28
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-Title 25, §71.21.a.5.i.G). Appendix B, Section II.G of the Planning Guide.
- 28
8. **County Stormwater Management Plans** approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference-Title 25, §71.21.a.5.i.H). Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H of the Planning Guide.
- 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-Title 25, §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-Title 25, §71.21.a.5.i.J). Provide DEP with a copy of the completed Request For PNDI Search document. Also provide a copy of the response letter from the Department of Conservation and Natural Resources' Bureau of Forestry regarding the findings of the PNDI search. Appendix B, Section II.J of the Planning Guide.
- 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. (Reference-Title 25, §71.21.a.5.i.K). Provide the department with a completed copy of a Cultural Resource Notice request of the Bureau of Historic Preservation (BHP) to provide a listing of known historical sites and potential impacts on known archaeological and historical sites. Also provide a copy of the response letter from the BHP. Appendix B, Section II.K of the Planning Guide.
- 30
- B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference-Title 25, §71.21.a.5.ii). Appendix B of the Planning Guide.
- 30
- C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference-Title 25, §71.21.a.5.iii).

- _____ 30 D. Provide cost estimates using present worth analysis for construction, financing, on going administration, operation and maintenance and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of plan submission. (Reference-Title 25, §71.21.a.5.iv).
- _____ 31 E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of the plan submission. (Reference-Title 25, §71.21.a.5.v).
- _____ 35 F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference-Title 25, §71.21.a.5.vi).
- _____ 35 1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of sewage management programs. (Reference-Title 25, §71.21.a.5.vi.A).
- _____ 35 2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a sewage management program justifying time schedules for each phase. (Reference-Title 25, §71.21.a.5.vi.B).
- _____ 35 G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - Title 25, §71.21.a.5.vi.D.).

_____ 36 **VII. Institutional Evaluation**

- _____ 36 A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
- _____ 36 1. Financial and debt status. (Reference-Title 25, §71.61.d.2).
- _____ 36 2. Available staff and administrative resources. (Reference-Title 25, §71.61.d.2)
- _____ 37 3. Existing legal authority to:
- _____ 37 a. Implement wastewater planning recommendations. (Reference-Title 25, §71.61.d.2).
- _____ 37 b. Implement system-wide operation and maintenance activities. (Reference-Title 25, §71.61.d.2).
- _____ 37 c. Set user fees and take purchasing actions. (Reference-Title 25, §71.61.d.2).
- _____ 37 d. Take enforcement actions against ordinance violators. (Reference-Title 25, §71.61.d.2).
- _____ 37 e. Negotiate agreements with other parties. (Reference-Title 25, §71.61.d.2).
- _____ 37 f. Raise capital for construction and operation and maintenance of facilities. (Reference-Title 25, §71.61.d.2).
- _____ 37 B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:
- _____ 37 1. Need for new municipal departments or municipal authorities. (Reference-Title 25, §71.61.d.2).
- _____ 37 2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference-Title 25, §71.61.d.2).
- _____ 37 3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference-Title 25, §71.61.d.2).

- 37 C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
- 37 1. Incorporation of authorities or agencies. (Reference-Title 25, §71.61.d.2).
- 37 2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference-Title 25, §71.61.d.2).
- 38 3. Description of activities to provide rights-of-way, easements and land transfers. (Reference-Title 25, §71.61.d.2).
- 38 4. Adoption of other municipal sewage facilities plans. (Reference-Title 25, §71.61.d.2).
- 39 5. Any other legal documents. (Reference-Title 25, §71.61.d.2).
- 39 6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
- 39 D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference-Title 25, §71.61.d.2).

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

- 40 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:
- 40 1. Existing wastewater disposal needs. (Reference-Title 25, §71.21.a.6)
- 40 2. Future wastewater disposal needs. (five and ten years growth areas). (Reference-Title 25, §71.21.a.6).
- 40 3. Operation and maintenance considerations. (Reference-Title 25, §71.21.a.6).
- 41 4. Cost-effectiveness. (Reference-Title 25, §71.21.a.6).
- 41 5. Available management and administrative systems. (Reference-Title 25, §71.21.a.6).
- 41 6. Available financing methods. (Reference-Title 25, §71.21.a.6).
- 41 7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference-Title 25, §71.21.a.6).
- 41 B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference-Title 25, §71.21.a.6)
- 3 C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a Sewage Management Program. (Reference – Title 25 §71.31d)

N/A **IX. Environmental Report (ER) generated from the Uniform Environmental Review Process (UER)**

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

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EXECUTIVE SUMMARY

This Act 537 Special Study (Special Study) was prepared for East Whiteland Township (Township) at the request of the Pennsylvania Department of Environmental Protection (PA DEP) in accordance with Act 537 entitled the Pennsylvania Sewage Facilities Act, Title 25, Chapter 71 of the Pennsylvania Code and the Pennsylvania Department of Environmental Protection Act 537 Plan Content and Environmental Assessment Checklist. This Special Study addresses the requirements necessary to upgrade components of the Township's conveyance system in order to meet the future wastewater needs of the Great Valley Corporate Campus.

The Plan is comprised of the following components addressed in the Plan of Study:

- I. Previous Wastewater Planning
- II. Physical and Demographic Analysis
- III. Existing Sewage Facilities in the Planning Area
- IV. Future Growth and Development
- V. Alternatives to provide for new or improved wastewater disposal facilities
- VI. Evaluation of Alternatives
- VII. Institutional Evaluation
- VIII. Selected Wastewater Treatment and Institutional Alternative

The primary focus of the Plan is to evaluate alternatives to provide for upgraded Township conveyance system facilities including the Wilburdale Pump Station and the Flat Road Pump Station.

To meet the wastewater conveyance needs of the planning area, it is proposed that the Township implement the selected alternatives as follows:

Phase I: Upgrade the Wilburdale Pump Station along with the force main and gravity main located in Flat Road.

Phase II: Due to uncertainties regarding the timing of the Liberty Properties development, Liberty Properties will prepare planning for upgrades to the Flat Road Pump Station at the time of their module submission.

Currently, upgrades to the Mill Lane Pump Station are complete. The upgraded station has two pumps operating and one standby pump. The capacity of this arrangement is 4.32 MGD. The station will also have space for the addition of a fourth pump. By adding the fourth pump, the station will be able to operate with 3 pumps active and one standby pump. The capacity of the station with this arrangement is 5.04 MGD. Both of these conditions are designed with the existing 14 inch force main in place. If the force main is upgraded to 20 inch, the 2 pump operating arrangement has a capacity of nearly 6.192 MGD. If 3 pumps would be operating with a fourth pump as standby, the station would have a capacity in excess of 7.20 MGD.

The engineer's opinions of probable construction cost (planning level costs) for the alternatives established within this Special Study are:

Total Costs - Phase I

Planning Level - Construction Cost Opinion Total for Pump Station Upgrades: \$690,000

Planning Level – Gravity Sewer and Force Main Construction Cost Opinion: \$682,000

Total Planning Level Construction Cost: \$1,372,000

Total Costs - Phase II

Planning Level – Defer to Future Planning.

With the need for infrastructure improvements being prompted by the wastewater to be generated from extensive development that is proposed for the corporate center, these alternatives will be paid for and financed through a combination of monies from developer funds and Township funds.

The following is a schedule for implementing the proposed alternative:

Description	Months from DEP Approval of Plan
1. Phase I – Preliminary Design of Wilburdale Pump Station, Force Main, and Gravity Sewer.	6
2. Phase I – Complete Financing Considerations	6
3. Phase I – Permitting (Part II WQM and E&S/Stormwater)	6
4. Phase I – Receive Permits	9
5. Phase I – Final Design	10
6. Phase I – Bid the Project	11
7. Phase I – Award the Project	14
8. Phase I – Complete Construction	26
9. Phase II – Flat Road Pump Station	Deferred to Future Planning

I. PREVIOUS WASTEWATER PLANNING

A. Identify and Discuss Existing Wastewater Planning

1. *Previous Act 537 Planning*

An Act 537 Sewage Facilities Plan, dated May 2, 1995, was prepared for East Whiteland Township. This was a 'township-wide' plan. The primary purpose of the Plan was to consider the extension of the existing public collection and conveyance system to most of the Township as need was determined.

The Valley Forge Sewer Authority adopted their Act 537 Planning in November of 2006. The Authority is the point to where wastewater flows for ultimate treatment and disposal.

An Act 537 Plan amendment "Special Study" was prepared. It was last revised in September 2011. The purpose of this study was to focus on the wastewater needs to address the replacement and upgrade of the Mill Lane Pump Station. This Special Study was approved by PA DEP in 2011/2012.

An Act 537 Special Study was prepared in 2013 and approved by the Department. This Special Study identified and addressed the requirements necessary to upgrade portions of the Township's conveyance system to accommodate future flow needs from Charlestown Township and East Whiteland Township. The planning area included south central Charlestown Township and north central East Whiteland Township.

2. *Planning Not Done in Accordance with an Approved Implementation Schedule*

There has been no planning by the Township that has not been completed in accordance with an approved implementation schedule.

3. *Additional Planning*

Planning that is anticipated by the Township above and beyond the planning associated with this Act 537 Special Study is associated with the timing for installation of a fourth pump at the Mill Lane Pump Station and improvements to the MLPS force main and the down-stream trunk sewer. This will be triggered by the flow indicator of monitored average daily flows at the Mill Lane Pump Station. This flow is 989,126 gpd. The Township intends to monitor the average daily flows at the Mill Lane Pump Station knowing the flow contributions from adjacent drainage area (via metered flow) along with flow contributions from the Mill Lane Pump Station. From this, a base flow can be established with the assumption that the most significant growth in the Township will occur in the drainage area tributary to the Mill Lane Pump Station, the monitoring of the average daily flows at the station appears to be a reasonable approach.

4. *Planning Via Planning Modules or Addenda.*

Two revisions were made to the Township-wide 537 Plan. The first was the Special Study for the Mill Lane Pump Station that was last revised in September 2011. The second was the most recent Special Study (approved by the Department in September 2013) addressing conveyance system upgrades to accommodate future flows in East Whiteland and Charlestown Township.

B. Identification of Municipal and County Planning Documents

1. *Identify Land Use Plans and Zoning Maps*

The Chester County Comprehensive Plan entitled "Landscapes2" establishes guidelines for the following land use categories.

- Growth Management
- National Resource Protection and Open Space

➤ **Agricultural and Farmland Protection**

The categories are used to provide the municipalities with “planning strategies to assist them in implementing their growth boundaries.”

The Township has three municipal planning documents that govern Land Use and Zoning.

- **The East Whiteland Township Comprehensive Plan (Adopted 2001)**
- **The East Whiteland Township Zoning Ordinance (Adopted 2007)**
- **Subdivision and Land Development Ordinance (Adopted 2007)**

A zoning map showing the designated zoning districts is found in Appendix A.

2. *Identify Zoning Regulations That Establish Lot Sizes*

The Zoning Ordinance adopted by the Township establishes the criteria for lot sizes for the following zoning districts in the planning area.

Zoning District		Minimum Lot Area
R1	Low Density Residential District	40,000 Sq. Feet
O/BP	Office/Business Park	80,000 Sq. Feet

II. PHYSICAL AND DEMOGRAPHIC ANALYSIS

A. Identify Planning Area, Municipal Boundaries, and Service Area Boundaries Through Mapping

This Act 537 Special Study is being prepared to address the sewage facilities needs of existing and proposed development in the area served by the Flat Road Pump Station and the Wilburdale Pump Station. Refer to the Plan in Appendix B that shows the boundary for the planning area addressed in this Special Study.

The plan in Appendix B also represents a municipal plan/map showing the municipal boundaries of the entire Township. The area to be served by proposed sanitary sewer facilities falls within the planning area of this Special Study.

B. Identify the Physical Characteristics of the Planning Area

East Whiteland Township is located in Chester County, due east of Exton, PA. The topography of the planning area varies from a low elevation of 359 ft. near the Wilburdale Pump Station to an elevation of 383 ft. near the southern portion of the Great Valley Parkway loop. A topographical map of the area is presented in Appendix D.

In addition, the wetlands per the National Wetlands Inventory Map are detailed on the map found in Appendix E.

C. Soils Analysis

This Plan will not consider the possibility of subsurface disposal of wastewater nor the issues concerning individual or community on-lot disposal systems. Therefore, this section is not applicable to this Special Study.

D. Geological Features of the Planning Area

As with Section C. above, this Plan will not consider the possibility of subsurface disposal of wastewater nor the issues concerning individual or community on-lot disposal systems. Therefore, this section is not applicable to this Special Study.

E. Topography

As referenced in Section II.B. of this Plan, the topography of the planning area varies from a low elevation of 359 ft. near the Wilburdale Pump Station to an elevation of 383 ft. near the southern portion of the Great Valley Parkway loop. A topographical map of the area is presented in Appendix D.

F. Potable Water Supply Information

Since this is strictly a special study to address collection/conveyance issues within the planning area, potable water supply information is not applicable to this Special Study.

G. Wetlands

There are no wetland areas within the planning area as identified on the map found in Appendix E. The source for the wetlands information is the National Wetlands Inventory Mapping provided by the U.S. Fish and Wildlife Service.

III. EXISTING FACILITIES IN THE PLANNING AREA

A. Identify and Describe Municipal Sewage Systems in the Planning Area

1. *Location, Size, and Ownership of Facilities*

Currently, there are collection and conveyance facilities in the planning area. The sanitary sewer mains that currently make up the collection system are 8 inches in diameter.

There are two wastewater pump stations in the planning area. The Flat Road Pump Station is located along Flat Road on the northeast side of the GVCC. This pump station has a capacity of 0.540 MGD. Wastewater is pumped through an existing 6-inch force main to the gravity sewer main located in Great Valley Parkway.

The other station is the Wilburdale Pump Station located near the intersection of Wilburdale Road and Flat Road. The Wilburdale station has a capacity of 0.576 MGD. Wastewater is pumped through an existing 8-inch force main to the gravity sewer located in Flat Road just east of Sidley Road.

2. *Narrative and Schematic Diagram of the Basic Treatment Process*

Since the focus of this Special Study is to address the needs associated with the collection and conveyance system in the planning area, a narrative and schematic diagram of the basic treatment process is not applicable.

3. *Description of Problems with the Existing Facilities*

Both the Flat Road Pump Station and the Wilburdale Pump Station are aging submersible stations with control equipment and electrical disconnects mounted in outside enclosures that are exposed to daily weather conditions.

Plans and specifications were prepared for mechanical/maintenance improvements to the Flat Road Pump Station. However, this work was not completed since the potential for development in the GVCC could dictate the need for additional facility upgrades.

Since both pump stations are aging, operations and maintenance of the mechanical and electrical equipment are a concern.

4. *On-Going Upgrades or Expansion of Facilities*

The Mill Lane Pump Station, located at the intersection of Conestoga Road and Mill Lane, has been upgraded. The upgraded station has two pumps operating and one standby pump. The capacity of this arrangement is 4.32 MGD. The station will also have space for the addition of a fourth pump. By adding the fourth pump, the station will be able to operate with 3 pumps active and one standby pump. The capacity of the station with this arrangement is 5.04 MGD. Both of these conditions are designed with the existing 14 inch force main in place. If the force main is upgraded to 20 inch, the 2 pump operating arrangement has a capacity of nearly 6.192 MGD. If 3 pumps would be operating with a fourth pump as standby, the station would have a capacity in excess of 7.20 MGD. The station design has the capacity to pump the projected flows from Charlestown Township and East Whiteland Township. Ultimate projected flows are 2,521,433 gpd ADF. This includes existing flow plus projected flows for both Charlestown Township and East Whiteland Township. Applying a peaking factor of 2.78, established in the original basis of design report in concert with DEP guidance, the projected peak flow is 7.01 MGD. The ultimate pump station capacity is 7.2 MGD.

In accordance with the recommendations of the East Whiteland/Charlestown Township Special Study, approved in September 2013, a new 18-inch sanitary sewer main was installed in Mill Lane from manhole ML-8 to manhole 67-1AA.

This installation was completed in late 2013 to facilitate the diverting of a large portion of wastewater from the Sidley Road area and around the Aegon property. In addition, the Township recently installed a new sewer main in Sidley Road (15-inch from manholes SL-10 to SL-7 and 18-inch from manholes SL-7 to ML-8) to receive the majority of the proposed flow from the planning area and Charlestown Township. This new gravity sewer provides capacity for planned future flows and will remove flow from the existing Sidley Road sewer main that was hydraulically overloaded in some locations.

5. *Operations and Maintenance Requirements and the Status of Past and Present Compliance*

The Township is the facility permittee and the owner. They perform routine maintenance on the collection and conveyance system to keep the facilities operating satisfactorily.

B. *Individual and Community On-Lot Disposal Systems*

There are four lots located along Wilburdale Road that have individual on-lot disposal systems. These lots could potentially be served, in the future, through the extension of an 8-inch collector sewer. Investigation of Chester County Health Department records shows that there are no reported malfunctions. However, CCHD researched their records back to their 1968 micro film log and found nothing referencing Wilburdale Road in their records. Consequently, it was concluded that these OLDS may be old systems that were built before the CCHD permitted on-lot facilities. With the age of these OLDS being a potential factor, the Township feels that it is important to include planning for the extension of public sanitary sewer service to the four Wilburdale Road properties in the event there is a problem with these systems in the future.

C. Wastewater Sludge and Septage Generation

Identification of wastewater sludge and septage generation is not considered applicable to this Special Study.

IV. FUTURE GROWTH AND LAND DEVELOPMENT

A. Description of Future Growth and Development

1. *Areas with Existing Development and Plotted Subdivisions*

Existing development and plotted subdivisions are described as follows:

- Great Valley Corporate Center

2. *Land Use Designations*

Land use in East Whiteland Township is governed by the Township's Zoning Ordinance. Land use is given the following designations per the zoning ordinance.

R-1	Low Density Residential
R-2	Low Density Residential
R-3	Low Density Residential
RM	Medium Density Residential
RMH	Medium-High Density Residential
CMX	Commercial Mixed-Use
VMX	Village Mixed-Use
FC	Frontage Commercial
ROC	Regionally Oriented Commercial
ROC/R	Regionally Oriented Commercial/Res
PO	Professional Office

O/BP	Office/Business Park
O/BPS	Office/Business Park Services
I	Industrial
INS	Institutional
NS	Neighborhood Schools
C	Cemetery
OS	Open Space

In the planning area, the zoning designations include:

- R-1 Low Density Residential
- O/BP Office Business Park
- C Cemetery

3. *Future Growth Areas and Projections*

For the planning area identified for this Special Study, there are areas that have existing development and areas that are planned for growth. The planned growth is:

- Liberty Properties
- J & J Properties (w/i GVCC)
- Glasgow Tract (w/i GVCC)
- Wilburdale Road OLDS

These are detailed in Table 2 below.

4. *Subdivision Regulations as they Pertain to Planned Developments*

East Whiteland Township has established guidelines for development, use, and protection of land. The guidelines are established in the Township's Zoning Ordinance.

The Zoning Ordinance regulates:

- Building height, area, and location on the lot;
- Flood plains and uses within the flood plains;
- Where certain land uses make occur in the Township;
- Quality, location, or size of signs;
- Minimum lot areas for various uses. Table 1

5. *Required Sewage Planning*

Sections V and VI of this Special Study will examine the technical alternatives necessary to meet the sewage facilities needs of the planning area. Projected wastewater flows for the planning area are classified by origin.

Table 1

Existing Flow Needs Summary

Source	EDUs	Population (2)	Avg. Daily Flows (gpd) (1),(3)
Great Valley Corporate Campus	1017	-----	279,600
TOTAL			279,600
(1) Based on pump station flow data obtained during full occupancy of the corporate center (2008).			
(2) 3.13 People Per Household.			
(3) 275 gpd/EDU.			

The means for serving the future needs of the planning area will be in the form of upgrades to the conveyance system including the Flat Road Pump Station and the Wilburdale Pump Station.

Table 2

Flow Projection Summary (Future Wastewater Needs)

Source	EDUs	Population (2)	Avg. Daily Flows (gpd) (1),(3)
Great Valley Corporate Campus	1017	-----	279,600
Glasgow Tract	23	72	6,325
Liberty Properties	371	-----	102,000
J & J Properties	29	-----	7,975
Wilburdale Road (OLDS)	4	12	1,100
TOTAL			397,000
(1) Great Valley Corporate Campus flow is based on flow data obtained during full occupancy (2008). Liberty Properties flow based on data provided by Liberty Properties.			
(2) 3.13 People Per Household.			
(3) 275 gpd/EDU.			

Summarizing Pump Station Needs:

The **Wilburdale and Flat Road Pump Stations** are public submersible pump stations that serve existing properties in the GVCC. Development of wastewater flow parameters was based on system operational data that defined a maximum or worst case scenario. This operational data reflected that period in time when the GVCC was fully occupied in the mid to late 2000's (2008). With the economic decline over the course of the past five to six years, a number of tenants moved their businesses or facilities from the GVCC to other locations or closed their businesses altogether.

In an effort to establish a more current base flow, operational data from 2014 was reviewed. Assuming the former case described above represents the upper boundary, the latter (based on 2014 data) would more accurately represent a base scenario.

The two primary property owners in the GVCC include Liberty Properties and Johnson & Johnson. Both of these entities were consulted and both provided their anticipated future wastewater loading based on their known plans for development or redevelopment of their properties.

For the two flow bases, the average daily base flows for the entire GVCC are:

- Upper Boundary (2008) – 279,600 gpd
- Base Boundary (2014) – 238,466 gpd

When including the projected flows provided by the primary property owners of Liberty Properties and Johnson & Johnson, the projected average daily flows from the entire GCCC are:

- Upper Boundary (2008) – 389,575
- Base Boundary (2014) – 348,375 gpd

Upon review of these boundary conditions, there does not appear to be a significant difference in the base and upper flow rates. Therefore, the sizing of infrastructure to accommodate the projected flows would be better served by utilizing the Upper Boundary condition to remain conservative.

The **Wilburdale** pump station has an existing capacity of 576,000 gpd. Using the Upper Boundary case, the average daily flow is nearly 279,600 gpd. With the addition of Liberty Properties, J & J Properties, Wilburdale Road (OLDS), and the Glasgow Tract, average daily flows will be more nearly 397,000 gpd.

V. ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES

A. Identify Alternatives

1. *Regional Wastewater Treatment Concepts*

Wastewater from East Whiteland Township is conveyed to the Valley Forge Sewer Authority's Wastewater Treatment Plant

2. *Extension of Existing Municipal Sewage Facilities to Areas in Need*

Currently, there are public collection and conveyance facilities that serve the GVCC. As discussed in Part A.1. of this section, wastewater collected in these facilities is ultimately conveyed to the Valley Forge Sewer Authority for treatment. Currently there is no plan to extend these facilities beyond the current reach. Refer to the plan found in Appendix B that shows the existing collection and conveyance system.

3. *Continued Use of Existing Community Treatment Facilities*

Currently, there are no community systems in the planning area. This is not applicable to this Special Study.

4. *New Community Sewage Systems and Treatment*

Since this Plan is examining the public sewer needs and the impact on existing conveyance system components, the implementation of new community sewage systems is not applicable to this Special Study.

5. *Repair and Replacement of Existing Collection and Conveyance System Components*

As stated in Part A.2. of this section, there are wastewater collection and conveyance facilities that serve the GVCC. The planning area is served by gravity sewers and pump stations that collect and convey the wastewater to the Sidley Road gravity sewer main. One of the pump stations in the planning area is the Flat Road Pump Station. It receives flow from several parcels in the planning area. This pump station's force main discharges to the existing gravity sewer main located in Great Valley Parkway. The Wilburdale Pump Station, located in the western portion of the planning area, receives flow from the Great Valley Corporate Campus and pumps wastewater through a force main to the gravity sewer main located in Flat Road. This gravity main conveys wastewater to the gravity sewer in Sidley Road.

Operationally, the gravity sewer main in Sidley Road takes all flow from the above referenced pump stations along with flow from the adjacent subdivisions. Refer to the plan sheet in Appendix C.

There are areas of concern that need to be addressed to meet existing and future wastewater needs.

- The Wilburdale Pump Station: This is one of the oldest stations in the Township with no control building or permanent emergency power source.
- The Flat Road Pump Station: This is an antiquated submersible pump station with no control building or permanent emergency generator power source.
- The gravity sewer in Flat Road: This sewer main receives flow from the Wilburdale Pump Station's force main. The diameter of this gravity sewer will need to be increased to accommodate future flows.

- The force main for the Wilburdale Pump Station will need to be increased in diameter to reduce the headloss and accommodate future flows.
- The Flat Road Pump Station may need to be relocated pending a full determination of the physical scope of the development that is proposed by Liberty Properties.

Upon review, a Phased approach to the above referenced upgrades has been considered. Refer to Section VIII and the Executive Summary for specific details.

Phase I: Upgrade the Wilburdale Pump Station along with the force main and gravity main located in Flat Road. The pump station site is limited in terms of available area. However, it is anticipated that through the implementation of a compact package pump station, upgrades can be implemented on the existing site. Two options that exist include a compact submersible station or a compact suction lift station constructed adjacent to the current station. This would enable the current station to stay in operation while the new facility is constructed. The existing fence would be expanded outward for placement of the new station on the northside of the current station. The force main will need to be upgraded from the existing 6 inch main to a new 10 inch main. An 8 inch main could accommodate the flows. But, headloss in the 8 inch main would be significant compared to that of a 10 inch main.

The pump station would also include a new structure to house the controls, a new permanent emergency generator, and a bypass connection.

Phase II: Upgrade the Flat Road Pump Station and relocate it if necessary (The need to relocate this station is dependent upon the configuration of the proposed entrance/access to the Liberty Properties development). Since the

design of the upgrades to this station is dependent upon the timing and location of the proposed development by Liberty Properties, the Township commits to deferring the planning for this pump station to the planning module submission for Liberty Properties.

6. *Alternative Methods of Collection and Conveyance to Serve Areas in Need*

Given that this Special Study addresses the needs associated with the upgrade of existing facilities to serve future flows, alternative methods of collection and conveyance to serve areas in need is not applicable to this Special Study.

B. *Use of Individual Disposal Systems*

The use of individual on-lot disposal systems will not be considered for this Special Study.

C. *Small Flow Sewage Treatment Facilities*

Assessment of alternatives based on the use of small flow sewage treatment facilities, land treatment alternatives, or package treatment facilities to serve individual homes or clusters of homes is not applicable to this Special Study.

D. *Community Land Disposal*

Assessment of alternatives based on the use of community land disposal is not applicable to this Special Study.

E. *Retaining Tank*

The use of retaining tanks will not be evaluated as part of this Special Study.

F. *Septage Management*

A discussion of the need for and implementation of a sewage management program will not be addressed as part of this Special Study.

VI. EVALUATION OF ALTERNATIVES

A. Consistency Determination

1. *Clean Stream Law*

The construction of upgrades to the conveyance facilities in the Planning area does not conflict with the Clean Stream Law. Flow generated by the planning area will ultimately be treated at Valley Forge Sewer Authority's wastewater treatment plant and disposed of in accordance with requirements and limits set forth by PADEP.

2. *Chapter 94 Report*

The East Whiteland Township 2013 Chapter 94 Report indicates that both the Wilburdale and Flat Road Pump Stations have capacity to meet current flow needs. However, based on the needs identified in this Special Study, the capacity of both stations will be exceeded.

The Mill Lane Pump Station, located at the intersection of Conestoga Road and Mill Lane, has been upgraded. The upgraded station has two pumps operating and one standby pump. The capacity of this arrangement is 4.32 MGD. The station will also have space for the addition of a fourth pump. By adding the fourth pump, the station will be able to operate with 3 pumps active and one standby pump. The capacity of the station with this arrangement is 5.04 MGD. Both of these conditions are designed with the existing 14 inch force main in place. If the force main is upgraded to 20 inch, the 2 pump operating arrangement has a capacity of nearly 6.192 MGD. If 3 pumps would be operating with a fourth pump as standby, the station would have a capacity in excess of 7.20 MGD.

3. *Clean Water Act (Title II)*

This Act and the Federal Water Quality Act establish specific planning requirements for wastewater facilities planning. These requirements only apply to municipalities intending to apply for financial assistance from the Federal Government for the construction of sewage facilities. Since the funding of the construction of the alternatives would be through financial contributions by municipal users, and potentially State agencies, this analysis is not applicable.

4. *Comprehensive Plans*

The Chester County Planning Commission (CCPC) Comprehensive Plan, entitled "Landscapes2," was adopted in November of 2009. The alternatives to upgrade public sanitary sewer service to accommodate proposed development in the planning area is consistent with the implementation strategy, policies and goals of the current Landscapes2 as shown in the Utilities and Infrastructure section of the plan.

East Whiteland Township adopted a Comprehensive Plan in 2001 that identifies Township policies on future preservation and development.

In September 2002, Chester County adopted a water resources management plan, titled '**Watersheds**'. This is an element of the County's Comprehensive Plan. In Part 4 of the Plan (Goals and Objectives – Achieving the Vision), Goal 7 describes the need to integrate utility and municipal planning to meet future water supply and wastewater needs.

It further discusses the need to delineate municipal planned public water/wastewater service areas and evaluate infrastructure alternatives. This Special Study is consistent with the objectives set forth in Watersheds.

5. *Antidegradation Requirements Contained in Chapters 93, 95 and 102 of the Clean Water Act*

Implementation of any of the alternatives for this Special Study will not impact the antidegradation requirements contained in Chapters 93, 95, 102 of the Clean Water Act.

6. *State Water Plans*

There are no anticipated conflicts with the State Water Plan for this submission.

7. *Pennsylvania's Prime Agricultural Land Policy*

East Whiteland Township is committed to protecting prime agricultural land within the Township's boundaries.

For the planning area in this Special Study, the Township's Zoning Ordinance and Comprehensive Plan give the land area a residential and office/business park designations. The development of this land is consistent with its land use designation.

It should be noted that the Chester County Planning Commission's agricultural conservation easement plan indicates that there are no agricultural conservation easements in East Whiteland Township. This plan was developed by the Chester County Department of Open Space Preservation utilizing information from the County Agricultural Preservation Board and the Chester County Bureau of Land Records. The latest update is January 2014.

8. *County Stormwater Management Plan*

PA Act 167 Stormwater Management Plans (SWMP) have been completed and approved for portions of Chester County. The Valley Creek Watershed (East) is one of those plans that have been approved. PA DEP approved it February 2011. The Valley Creek (East) is designated as an exceptional value stream. This SWMP is incorporated via reference into the County-wide Act 167 SWMP

that is nearing the point of formal resolution of adoption. From a consistency perspective, it appears that the concept to provide sewer service to potential development is consistent with the SWMP. This special study planning area falls within the Valley Creek Watershed and the prescribed system improvements not only accommodate future flows but provide for minimizing inflow and infiltration of stormwater into the sanitary sewer system.

9. *Wetlands Protection*

As referenced in Section II.G. of this Plan, There are no mapped wetland areas within the planning area as identified on the map found in Appendix E. The source for the wetlands information is the National Wetlands Inventory Mapping provided by the US Fish and Wildlife Service.

10. *Protection of Threatened, Rare, and Endangered Plant and Animal species (PNDI)*

A Pennsylvania National Diversity Inventory (PNDI) search was completed for each area within the various phases. See Appendix H. No conflicts were found for proposed upgrades associated with the Wilburdale Pump Station or the Flat Road Pump Station.

11. *Historic and Archaeological Resource Protection*

The Pennsylvania Historic and Museum Commission (PHMC) were contacted to determine if there were any potential conflicts within the proposed Phases. PHMC reviews for the proposed sewerage facilities have been completed. The results of the PHMC's review for the proposed sewerage facilities can be found in Appendix I. It has been determined that the projects will have no impact on historic resources.

B. Resolution of Inconsistencies

Upon review of the constraints discussed in items 1 through 11, there are no apparent inconsistencies with applicable planning requirements.

C. Alternative Evaluation with Respect to Applicable Water Quality Standards and Effluent Limitations

The planned alternatives to provide a sanitary sewer collection and conveyance system for this proposed development will not impact water quality standards or effluent limitation. Wastewater will be discharged to the existing public collection and conveyance system. Ultimately, wastewater will be treated at the Valley Forge Sewer Authority's WWTP.

D. Preliminary Cost Opinions

Preliminary cost opinions were developed for the primary alternatives discussed in Section V. These cost opinions reflect the following:

1. Phase I – Wilburdale Pump Station and Force Main

Construct Phase I (refer to detail in Section V) to serve projected wastewater needs. Wastewater through Phase I would be conveyed to Sidley Road and ultimately the Mill Lane Pump Station.

Planning Level - Construction Cost Opinion Total for Pump Station Upgrades (pumps, wetwell, piping, bypass connection, permanent emergency generator, control building, flow meter): \$690,000

Planning Level – Gravity Sewer Upgrade and Force Main Upgrade Construction Cost Opinion: \$682,000

Total Planning Level Construction Cost - \$1,372,000

Phase II – Flat Road Pump Station

Construct Phase II (refer to detail in Section V) to serve projected wastewater needs. Wastewater through Phase II would be conveyed to the Wilburdale Pump Station and ultimately to the Mill Lane Pump Station.

Planning Level – Planning deferred to future planning to be initiated by Liberty Properties.

E. Analysis of Available Funding Methods

This section of the Plan addresses methods available to finance the proposed Phases. Three financing alternatives exist for this particular project.

1. *Municipal Bond Issue*

a. *General*

There are several types of bonds; some are taxable and some are tax-exempt. However, the general classification of municipal bonds usually refers to tax-exempt bonds. There are three types of municipal bonds generally used in financing public works.

- *General Obligation Bonds* are tax-free bonds that are secured by the pledge of the full faith, credit, and taxing owner of the issuing agency. This means that this type of bond is backed by all of the taxes on real estates and personal property within the jurisdiction of the issuing agency. It involves minimum risk to the investor and therefore requires a lower rate of interest than other types of bonds.

- ▶ *Dedicated Tax Bonds* are payable only from the proceeds from a special tax and are not guaranteed by the full faith, credit and taxing power of the issuing agency. Examples of special dedicated taxes are the special assessments against property which is adjacent to and the principal beneficiary of the improvement, and gasoline taxes used to finance highway construction.
- ▶ *Revenue Bonds* are payable from revenues derived from the use of the improvement such as tools, sewer bills, or rents paid by the users of the improvement and do not otherwise represent an obligation of the issuing agency. Revenue bonds are not ordinarily subject to statutory or constitutional debt limitations. They are often issued by commissions, authorities, and other public agencies created for the specific purpose of financing, constructing, and operating essential public projects.

Typically, municipal bonds are sold to an investment-banking firm, which then resells the bonds to individual investors. The advantage of municipal bonds to the investor is their tax-free status. A bond discount (a percentage of the total bond issue) serves as the investment banker's commission. Before bonds are sold, they must be rated on the basis of risk to the investor by a rating agency such as Standard and Poor's or Moody's. The higher the rating, the lower the risk to the investor and, consequently, the lower the interest rate paid on the bond.

The legal instrument, which sets the rules that must be observed by the issuing agency, is the Trust Indenture. The Trust Indenture is prepared by the Bond Counsel and must be printed along with the bonds. Due to specific requirements as to the denominations of the bonds and methods and materials for printing, printing costs can be substantial. A

trustee is required to administer the bond issue and insure the terms of the Trust Indenture are observed. This results in an Annual Trustee Fee. Investment bankers indicate that it does not pay to extend the term beyond 25 years because the interest rate increases dramatically.

b. Advantages of Municipal Bond Issue Funding

- ▶ This program affords long-term fixed rate financing.
- ▶ Tax-exempt municipal bonds are in high demand.
- ▶ There is local investment opportunity.
- ▶ Municipal credit is established.
- ▶ It retains flexibility for future borrowing.

c. Disadvantages of Municipal Bond Issue Funding

- ▶ A cover may be required.
- ▶ A Debt Service Reserve Fund is generally required.
- ▶ There are trustee fees and costs of preparing a Trust Indenture.

2. Bank Loan

Another financing option for the implementation of this project is the bank loan. There are four basic categories of bank loans. These are:

- ▶ Real Estate Loans (Mortgage)
- ▶ Participation and Interbank Loans
- ▶ Installment Loans (Personal)
- ▶ Commercial and Industrial Loans

Of the four types, a commercial and industrial loan would be the most applicable to this project.

Commercial and industrial loans may be made on a demand or time basis. A demand basis loan allows the bank to call for repayment at any time, or the borrower can repay when convenient. A time basis loan provides for a specific loan maturity date.

Most commercial and industrial loans are unsecured. The credit is extended on the basis of an analysis of all available information pertaining to the customer and the bank's confidence in that customer's ability and willingness to repay.

For this planned project, it appears that it would be prudent to seek a time basis loan. An interest rate offering would be established, and an amortization schedule set. Interest rates may range from 5% to 10%.

Advantages of the Bank Loan Financing

- ▶ Ability to shop around for a loan structure that best fits the customer's needs.
- ▶ Flexibility in establishing repayment schedules.
- ▶ Working with and through a local financial institution.
- ▶ Municipal credit is established.
- ▶ Ability to obtain fixed rate financing.

Disadvantages of Bank Loan Financing

- ▶ Interest rates are charged for loan repayment.
- ▶ Processing fees may be required.
- ▶ Processing and issuances fees may be expensive.

3. *Direct Funding by Developers*

A third financing option for the implementation of this project is direct funding by those who are developing the property in the planning area. This would involve capital expenditures by the developer from his own capital funds.

Advantages of Direct Funding by Developer

- ▶ Avoid any third party involvement. Payment for services can be made directly to the manufacture or contractor by the Developer.
- ▶ There are no interest rate charges.
- ▶ Bank processing and issuance fees are avoided.
- ▶ Removes the financial burden from the Township.

Disadvantages of Direct Funding

- ▶ There are no disadvantages to this method of financing.

F. *Immediate or Phased Implementation*

It is planned to implement the collection and conveyance system improvements in phases. These include:

Phase I: Upgrade the Wilburdale Pump Station along with the force main and gravity main located in Flat Road.

Phase II: Upgrade the Flat Road Pump Station.

G. *Ability of the Township to Implement the Alternative*

The Township is well established and has the ability to implement the technical alternatives presented in this Plan.

VII. INSTITUTIONAL EVALUATION

A. Analysis of the Township, Past Actions, and Present Performance

1. *Financial and Debt Status*

The Township is a well-established entity that will be able to oversee the implementation of the proposed technical alternative. Financially, through the funding mechanisms identified above, the construction of the necessary collection and conveyance facilities can be accomplished. Ultimately, the Township will take dedication of these facilities and will be required to operate and maintain them. The funds for facility O&M may originate from the Township's Sewer Fund.

2. *Available Staff and Administrative Resources*

The Township is governed by a three-member Board of Supervisors elected at-large, who each serve six-year terms that include executive and legislative responsibilities. Others associated with the Township are:

- ▶ Township Manager
- ▶ Director of Public Works
- ▶ Solicitor
- ▶ Consulting Engineer

The Township has the necessary staff and administrative resources already in place. No further evaluation of staffing and resources is necessary at this time.

3. Existing Legal Authority

As provided for under Pennsylvania Law, the Township has the necessary legal authority to oversee the implementation of the technical alternatives presented in this Special Study.

B. Institutional Alternatives Necessary to Implement the Technical Alternative

1. Need for a New Authority

East Whiteland Township does not have an Authority in place at this time. It is not deemed necessary that a new Authority be established to meet the needs of the alternatives identified in this Special Study. The Township and public works personnel are capable of implementing the identified alternatives.

2. Function of the Authority

This is not applicable given that there is no sewer authority in place at this time.

3. Cost of Administration

This is not applicable given that there is no sewer authority in place at this time.

C. Administrative and Legal Activities to be Completed and Adopted to Ensure the Implementation of the Technical Alternative

1. Legal Authorities of Incorporation

No new wastewater Authorities of Incorporation are necessary and there will be no changes to the Township's structure to implement these projects.

2. Required Ordinances, Standards, Regulations, and Intermunicipal Agreements

In 1971, an Intermunicipal Agreement was signed by East Whiteland Township, the former East Whiteland Municipal Authority, Malvern Municipal Authority, Malvern Borough, and the Valley Forge Sewer Authority for conveyance of

wastewater through the Valley Creek Trunk Sewer to the Valley Forge Sewer Authority's WWTP for treatment and disposal. In December 1979, an amendment was issued to the existing 1971 intermunicipal agreement between East Whiteland Municipal Authority, East Whiteland Township, Malvern Municipal Authority, Borough of Malvern, and the Valley Forge Sewer Authority. This amendment facilitates the transmission of wastewater from an area in Charlestown Township adjacent to East Whiteland Township through the East Whiteland Township Trunk Line and the Valley Creek Trunk Line.

This intermunicipal agreement was amended and signed by all parties in 2013 to reflect the latest flow and cost sharing conditions. This effort to amend the agreement took place in accordance with the September 2013 Special Study approved by the Department.

3. *Provisions of Rights-of-Way, Easements, and Land Transfers*

Upgrades to the wastewater collection and conveyance system that will serve potential development will extend along Township or State Roads and easements. The Wilburdale Pump Station site is limited in terms of available area. However, it is anticipated that through the implementation of a compact package pump station, upgrades to the station can be implemented on the existing site.

The Flat Road Pump Station may need to be moved to accommodate the configuration associated with the access that is proposed for Liberty Properties. This location is yet to be determined pending further definition of the physical configuration of the proposed development.

4. *Other Sewage Facilities Plan Adoptions*

It is not anticipated that other sewage facilities plans will need to be adopted as part of this planning process.

5. *Legal Documents*

Legal documentation, in the form of an amended intermunicipal agreement was completed as part of the September 2013 Special Study. Revisions to this agreement are not necessary for this Special Study.

6. *Dates and Timeframes of 1 Through 5 Above*

The dates and timeframes for the items in this section are found in the implementation schedule in the Executive Summary of this Plan.

D. *Selected Institutional Alternative*

No changes are needed to the existing municipal structure. An amendment to the existing intermunicipal agreement was completed as part of the September 2013 Special Study.

VIII. SELECTED WASTEWATER TREATMENT AND INSTITUTIONAL ALTERNATIVE

A. Identify the Chosen Technical Alternative

The selected alternative which best meets the wastewater treatment needs of the proposed development in the planning area is:

Phase I: Upgrade the Wilburdale Pump Station along with the force main and gravity main located in Flat Road.

Phase II: Upgrade the Flat Road Pump Station. (Planning deferred to the planning module submission by Liberty Properties)

The phasing of alternative is recommended based on the following:

1. Existing Wastewater Disposal Needs

Within the planning area, wastewater disposal needs are met through the use of the Flat Road Pump Station, the Wilburdale Pump Station, and a network of gravity sewer mains and force mains. These facilities can continue to meet the existing wastewater disposal needs of the planning area.

2. Future Wastewater Treatment Needs

Future wastewater disposal needs, identified in Section IV of this Plan show that upgrades will be needed for both the Wilburdale Pump Station and the Flat Road Pump Station. Additional upgrades will be planned for the Wilburdale Force Main and the downstream gravity sewer main that extends from the force main to the intersection of Sidley Road and Flat Road.

3. Operations and Maintenance Considerations

The proposed wastewater facilities will be owned and operated by East Whiteland Township upon completion. Operations and maintenance of the new facilities will be the responsibility of the Township which currently operates and maintains existing wastewater facilities within the Township.

Since both the existing Flat Road Pump Station and the Wilburdale Pump Station are antiquated facilities, new stations will greatly improve upon the operations and maintenance that is currently needed by Township personnel.

4. *Cost Effectiveness*

In accordance with the cost opinions for the alternatives presented in Section VI of this study, the phasing of the Alternatives is the most cost effective approach. In addition, since the Wilburdale pump station is downstream from the Flat Road station, capacity will need to be built into the system at Wilburdale first. Then, upgrades to the Flat Road pump station can follow.

5. *Available Management and Administrative Systems*

The Township has the management and administrative staff in place to implement the selected alternative.

6. *Available Financing Methods*

Of the financing methods discussed in Section VI, each method can provide the necessary funding for the selected alternative. Refer to Section VIII.B. for the selected capital financing plan.

7. *Environmental Soundness*

Environmentally, the Valley Forge Sewer Authority's WWTP can adequately treat the average and peak flows within the permitted concentration limits.

B. *Selected Capital Financing Plan*

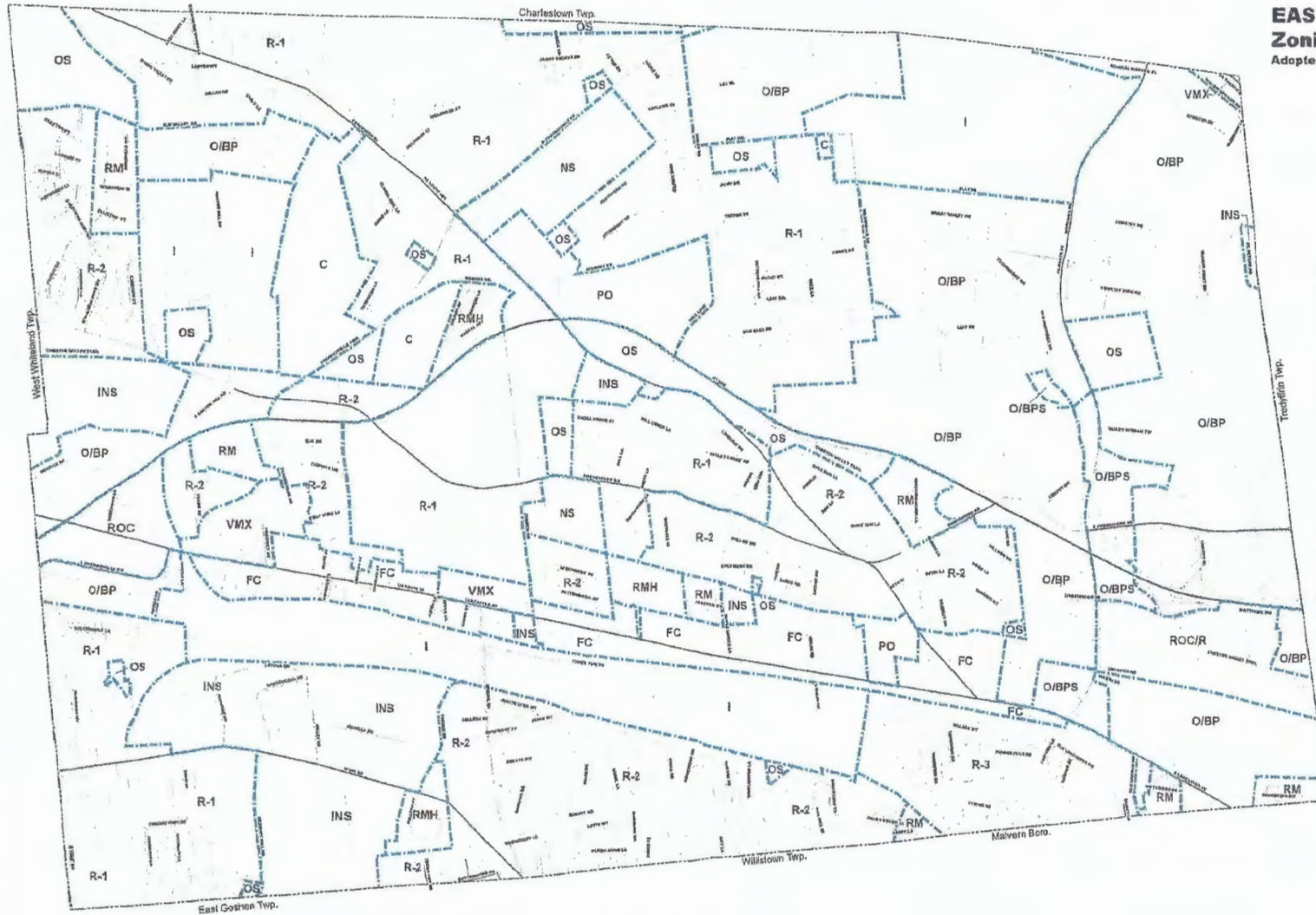
The selected technical alternative will be paid for and financed through bond funding mechanisms and sharing of costs between the municipality and developers. The planning-level costs are shown in Section VI.

The Township intends to pay for the proposed upgrades up-front and then plans to pass along those costs to the developers of the development that is proposed within the planning area.

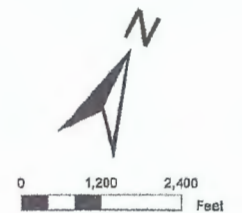
APPENDIX A

Zoning Map

**EAST WHITELAND TOWNSHIP
Zoning Map**
Adopted February 21, 2007

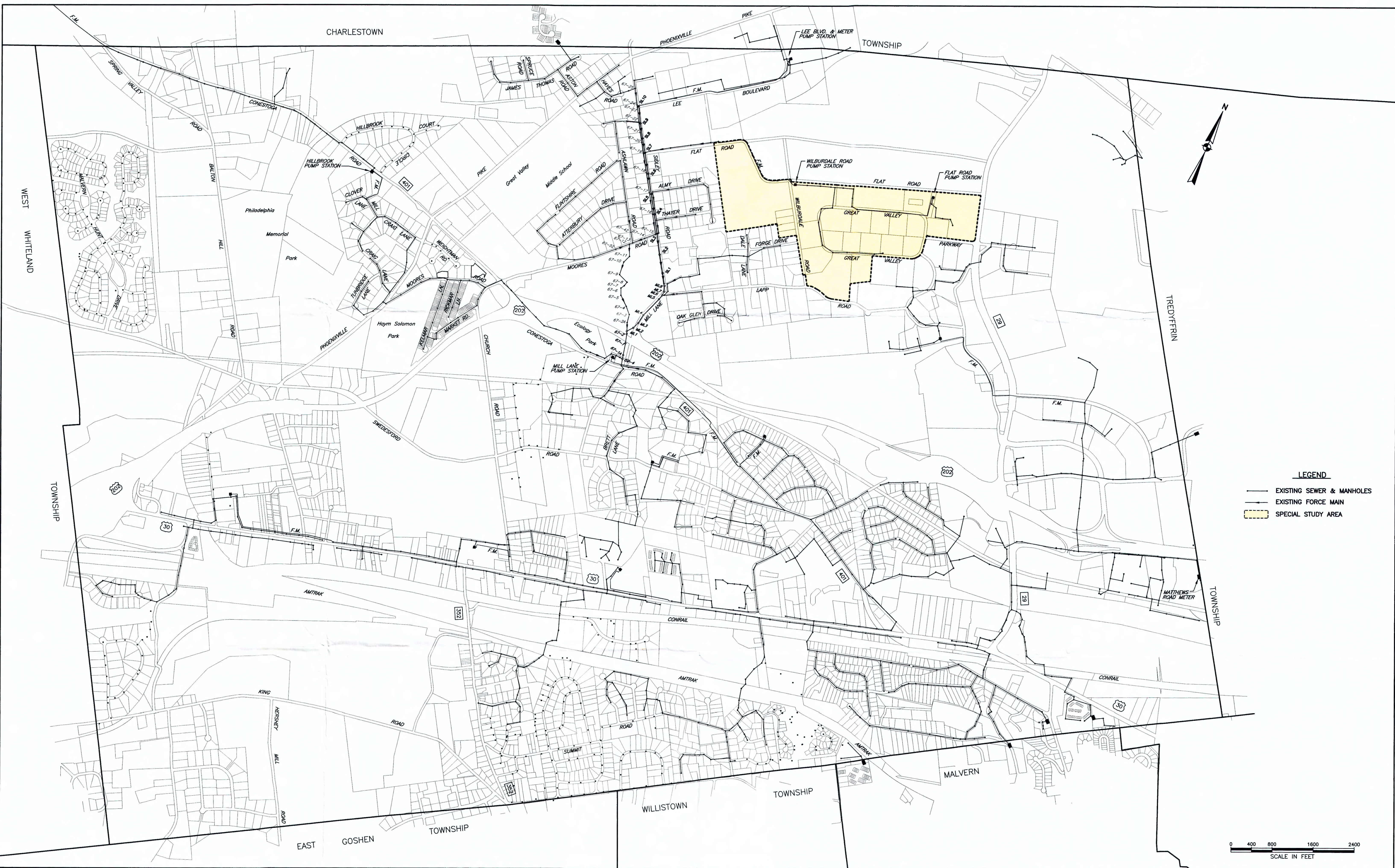


ZONING DISTRICTS	
R-1	Low Density Residential
R-2	Low Density Residential
R-3	Low Density Residential
RM	Medium Density Residential
RMH	Medium-High Density Residential
CMX	Community Mixed-Use
VMX	Village Mixed-Use
FC	Frontage Commercial
ROC	Regionally-Oriented Commercial
ROC/R	Regionally-Oriented Comm/Res
PO	Professional Office
O/BP	Office/Business Park
O/BPS	Office/Business Park Services
I	Industrial
INS	Institutional
NS	Neighborhood Schools
C	Cemetery
OS	Open Space
	Corporate Gateway Overlay



APPENDIX B

Planning Area

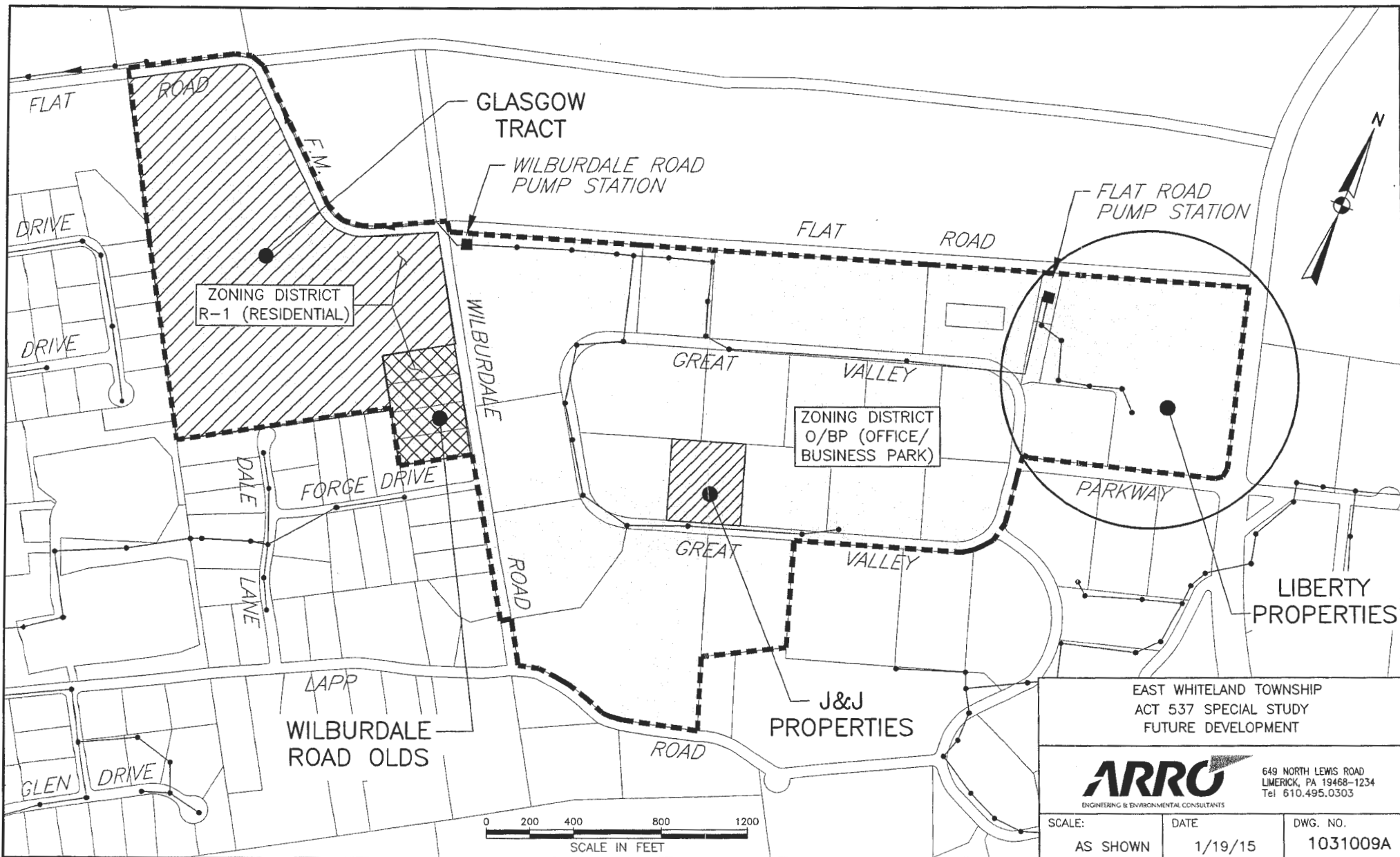


- LEGEND**
- EXISTING SEWER & MANHOLES
 - EXISTING FORCE MAIN
 - SPECIAL STUDY AREA

										W.L. BOHNER, P.E. RELEASED BY		SEAL	SEAL		CLIENT & PROJECT EAST WHITELAND TOWNSHIP 209 CONESTOGA RD. FRAZER, PA 19355 SEWER SYSTEM EAST WHITELAND TOWNSHIP CHESTER COUNTY, PENNSYLVANIA		ARRG Suite 100, 649 North Lewis Road Limerick, Pennsylvania 19468 Tel 610.495.0303		TITLE ACT 537 SPECIAL STUDY PLOT PLAN SPECIAL STUDY AREA		DWG. NO. C1		
										DESIGN W.L. BOHNER, P.E.		CHECKED K.M.		PRELIMINARY		SCALE AS NOTED		PROJECT NO. 10310.09		SHEET NO. 1 OF 1		REV. A	
										DRAWN COLLINS		CHECKED K.M.						REVISION					
										DATE 1/28/14		SURVEY DATE FIELD BOOK											
NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.														

APPENDIX C

Future Development



EAST WHITELAND TOWNSHIP
ACT 537 SPECIAL STUDY
FUTURE DEVELOPMENT

ARRO
ENGINEERING & ENVIRONMENTAL CONSULTANTS

649 NORTH LEWIS ROAD
LIMERICK, PA 19468-1234
Tel 610.495.0303

SCALE: AS SHOWN	DATE 1/19/15	DWG. NO. 1031009A
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APPENDIX D

Topography

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MALVERN QUADRANGLE
PENNSYLVANIA-CHESTER CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Control by USGS and NOS/NOAA
Topography by photogrammetric methods from aerial
photographs taken 1951. Field checked 1955
Polyconic projection. 10,000-foot grid ticks based on
Pennsylvania coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983
move the projection lines 6 meters south and
30 meters west as shown by dashed corner ticks

UTM GRID AND 1983 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET
Revisions shown in purple and woodland compiled from aerial
photographs taken 1983 and other sources. This information
not field checked. Map edited 1983
Purple tint indicates extensions of urban areas

SCALE 1:24,000
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 2 3 4 5 6 7 8 9 10 KILOMETER
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy-duty Medium-duty Light-duty Unimproved dirt
Interstate Route U.S. Route State Route
PENNsylvania
QUADRANGLE LOCATION
YOAS SERVICES, INC.
509 W. 4th St.
Williamsport, PA 17701
1-800-222-2546
MALVERN, PA.
40075-A5-TF-024
1955
PHOTOREVISED 1983
DMA 5864 II SE-SERIES V831

There may be private inholdings within the boundaries of
the National or State reservations shown on this map

APPENDIX E

Wetlands Map



U.S. Fish and Wildlife Service National Wetlands Inventory

Special Study
Planning Area

Jan 21, 2014



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

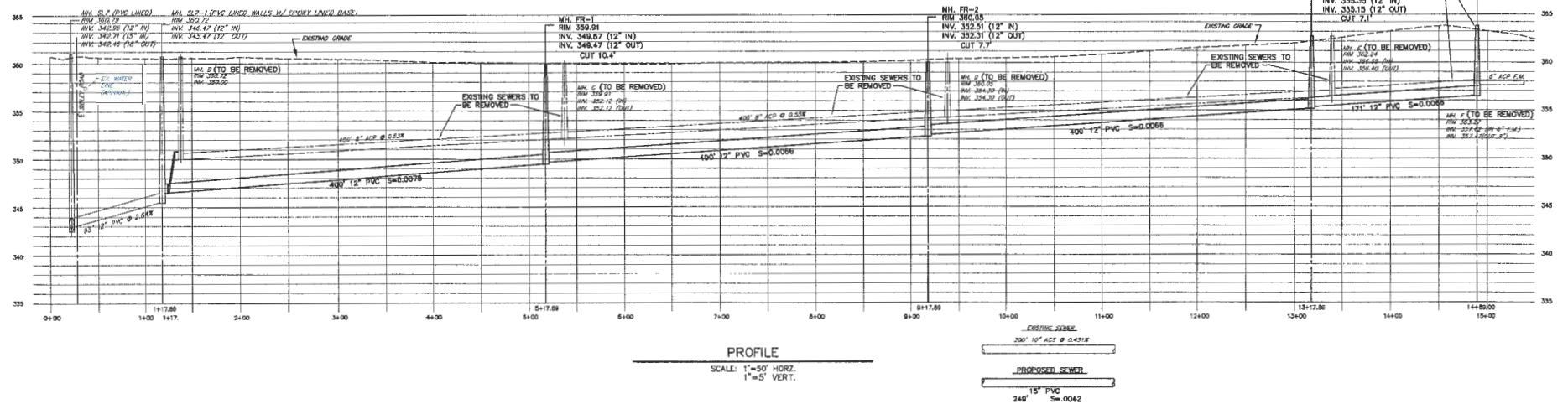
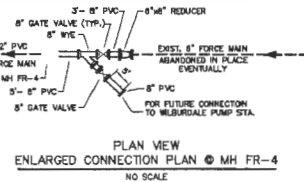
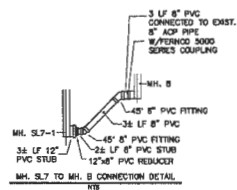
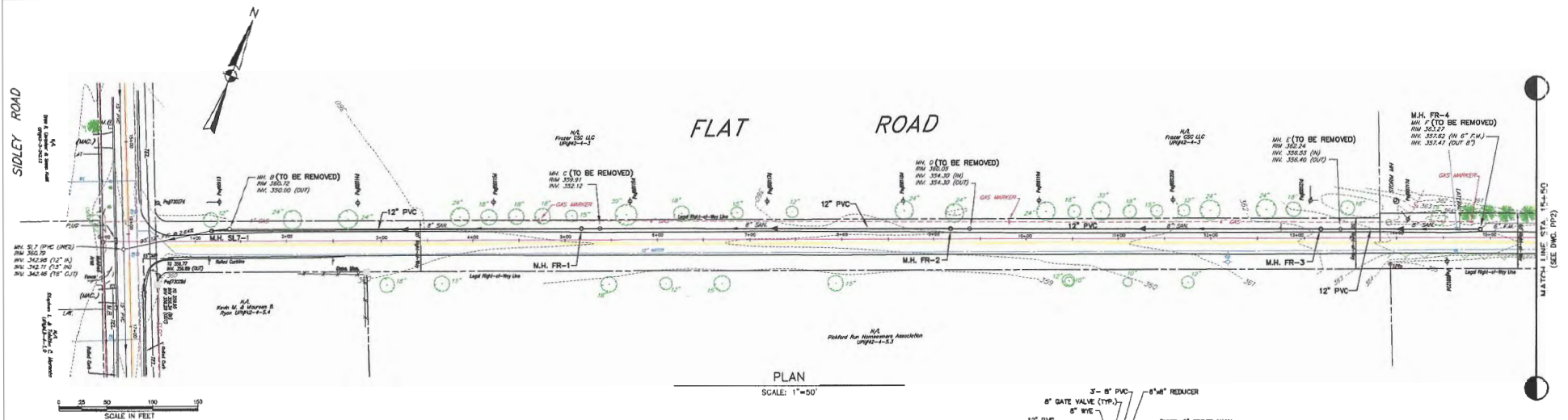
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

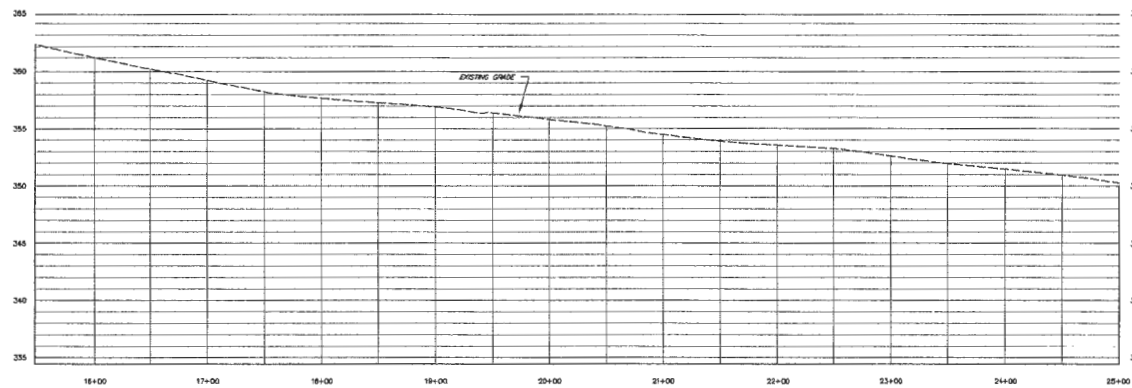
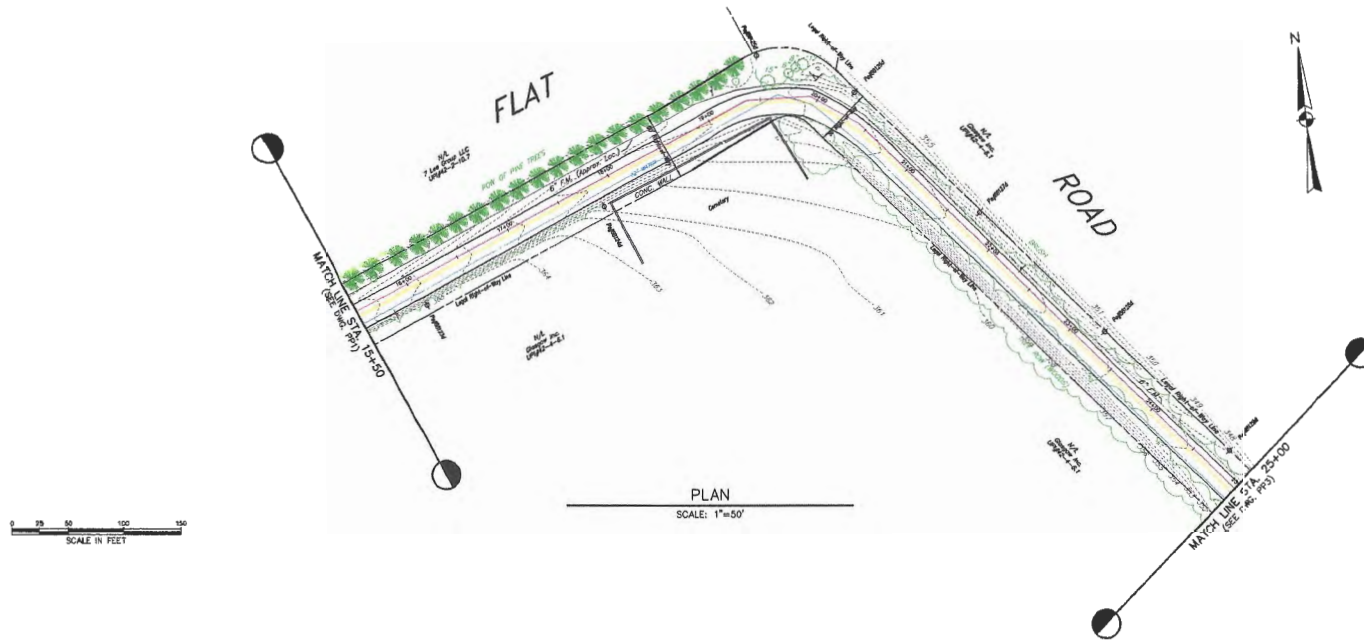
Wilburdale PS/GVCC Planning Area

APPENDIX F

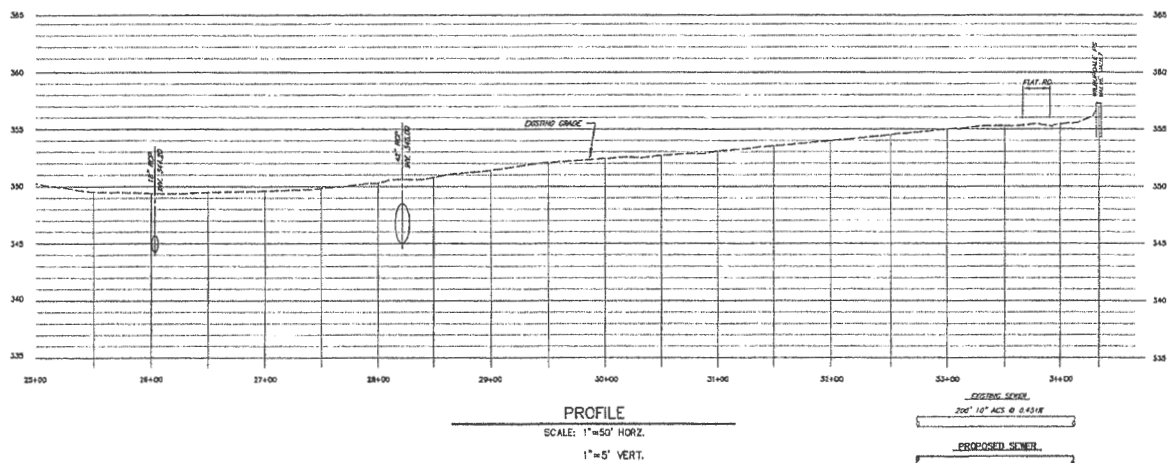
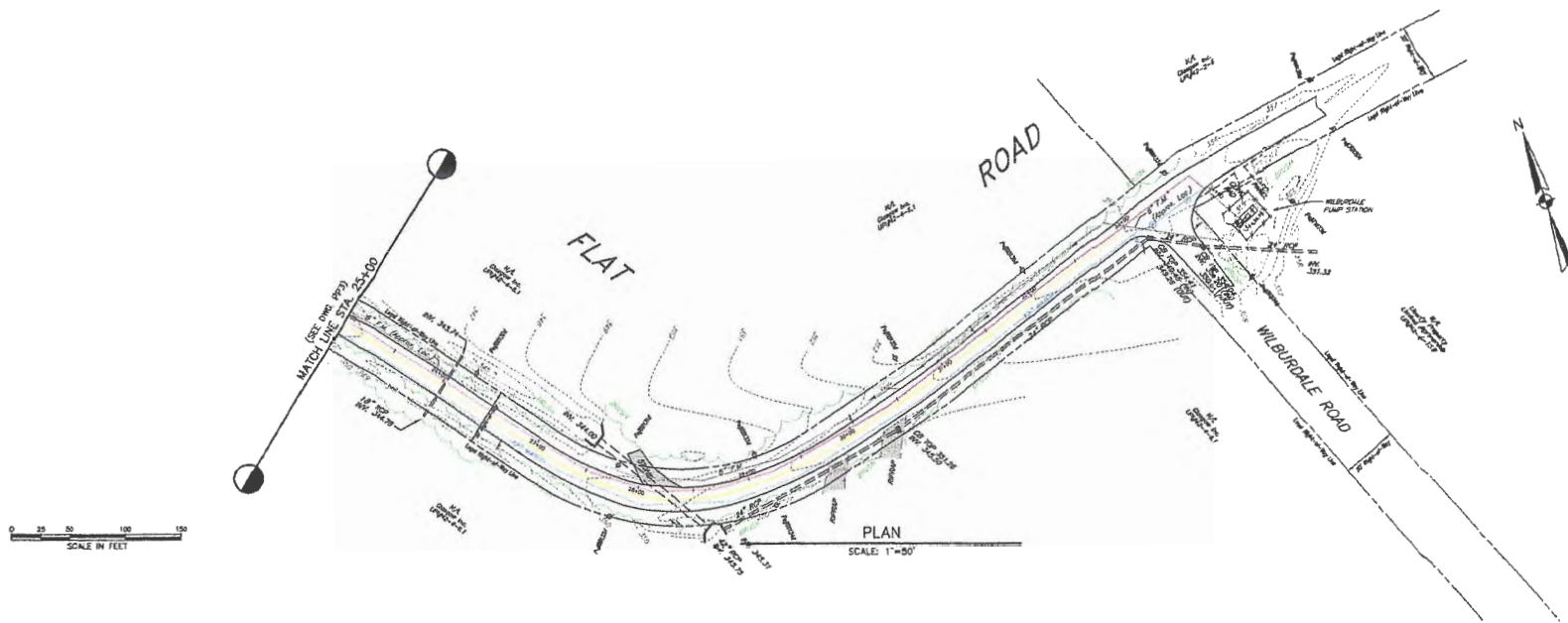
Collection/Conveyance System; Upgrades



				K. MAGNAN, P.E.				EAST WHITELAND TOWNSHIP				TITLE			
				DESIGN				209 CONESTOGA RD.				FLAT ROAD			
				DRAWN				FRAZER, PA 19355				STA. 0+00 TO 15+50			
				CHECKED				FLAT ROAD GRAVITY SEWER &				SCALE			
				DATE				CHESTER COUNTY, PENNSYLVANIA				AS NOTED			
				1/20/14				ARRO				PROJECT NO.			
								Suite 100, 649 North Lewis Road				SHEET NO.			
								Limerick, Pennsylvania 19350				6 OF 8			
								Tel 610.655.0303				REV.			
												A			



										K. McAGHON, P.E.		SEAL	SEAL	CLIENT & PROJECT		TITLE			FLAT ROAD		
										RELEASED BY						CHECKED	EAST WHITELAND TOWNSHIP			STA. 15+50 TO 25+00	
										DESIGN							209 CONESTOGA RD.				
										K. McAGHON, P.E.							FRAZER, PA 19355				
1										ISSUED FOR CONSTRUCTION		CHECKED	FLAT ROAD GRAVITY SEWER &			SCALE		AS NOTED	DWC NO.		
0										ISSUED FOR BID			WILBURDALE FORCE MAIN			PROJECT NO.				SHEET NO.	REV.
A										ISSUED TO CLIENT			CHESTER COUNTY, PENNSYLVANIA			10310.11					
NO	REVISION	DATE	BY	APP.	NO	REVISION	DATE	BY	APP.	DATE	1/30/14	SURVEY DATE	1/2012	Suite 100, 649 North Lewis Road			PP2				
														Limerick, Pennsylvania 19355							
														Tel 610.495.0303							



								SEAL		SEAL		CLIENT & PROJECT		ARRC		TITLE		DWC NO.	
								PRELIMINARY				EAST WHITELAND TOWNSHIP 209 CONESTOGA RD. FRAZER, PA 19355		Site 100, 640 North Lewis Road Limerick, Pennsylvania 19358 Tel 610.495.0303		FLAT ROAD STA. 25+00 TO 34+34		PP3	
												DATE		SURVEY DATE		AS NOTED		REV.	
												1/20/14		1/2012		PROJECT NO.		SHEET NO.	
																10310.11		8 OF 9	
																		A	

APPENDIX G

Flow Projection Summary Table

Table 1
Existing Flow Needs Summary

Source	EDUs	Population (2)	Avg. Daily Flows (gpd) (1),(3)
Great Valley Corporate Campus	1017	-----	279,600
Glasgow Tract	0	0	0
Liberty Properties	0	-----	0
J&J Properties	0	0	0
Wilburdale Road (OLDS)	0	0	0
TOTAL			279,600
(1) Based on pump station flow data obtained during full occupancy of the corporate center (2008). (2) 3.13 People Per Household . (3) 275 gpd/EDU			

Table 2

Flow Projection Summary (Future Wastewater Needs)

Source	EDUs	Population (2)	Avg. Daily Flows (gpd) (1),(3)
Great Valley Corporate Campus	1017	-----	279,600
Glasgow Tract	23	72	6,325
Liberty Properties	371	-----	102,000
J&J Properties	29	-----	7,975
Wilburdale Road (OLDS)	4	12	1,100
TOTAL			397,000
(1) Great Valley Corporate Campus flow is based on flow data obtained during full occupancy (2008). Liberty Properties flow based on data provided by Liberty Properties. (2) 3.13 People Per Household. (3) 275 gpd/EDU			

APPENDIX H

PNDI Response

1. PROJECT INFORMATION

Project Name: **Act 537 Study for Wilburdale PS and Flat Road PS**

Date of review: **5/13/2014 9:33:36 AM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**

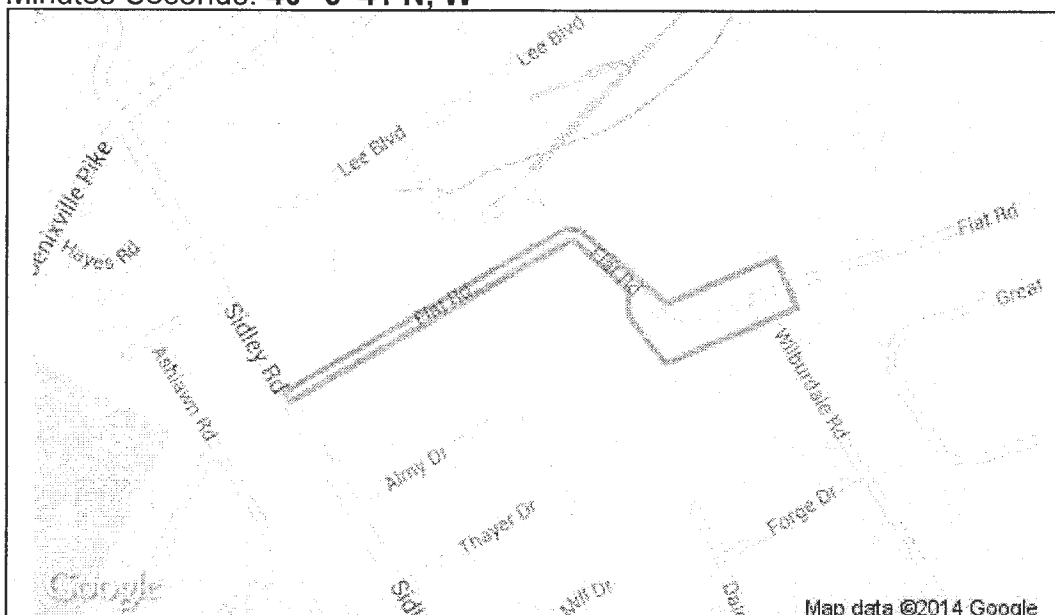
Project Area: **11.4 acres**

County: **Chester Township/Municipality: East Whiteland**

Quadrangle Name: **MALVERN ~ ZIP Code: 19355**

Decimal Degrees: **40.061509 N, -75.553748 W**

Degrees Minutes Seconds: **40° 3' 41 N, W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special

concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA.
17105-8552
Fax: (717) 772-0271

U.S. Fish and Wildlife Service

Endangered Species Section
315 South Allen Street, Suite 322, State College, PA.
16801-4851
NO Faxes Please.

PA Fish and Boat Commission

Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission

Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax: (717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: David Kee
Company/Business Name: ARRO
Address: 1150 Glenlivet Dr, Suite A19
City, State, Zip: Allentown PA 18106
Phone: (484) 664-7310 Fax: (484) 664-7312
Email: david.kee@thearroy.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.


applicant/project proponent signature

5/14/14
date

1. PROJECT INFORMATION

Project Name: **Act 537 Study for Flat Road PS**

Date of review: **5/13/2014 10:15:55 AM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**

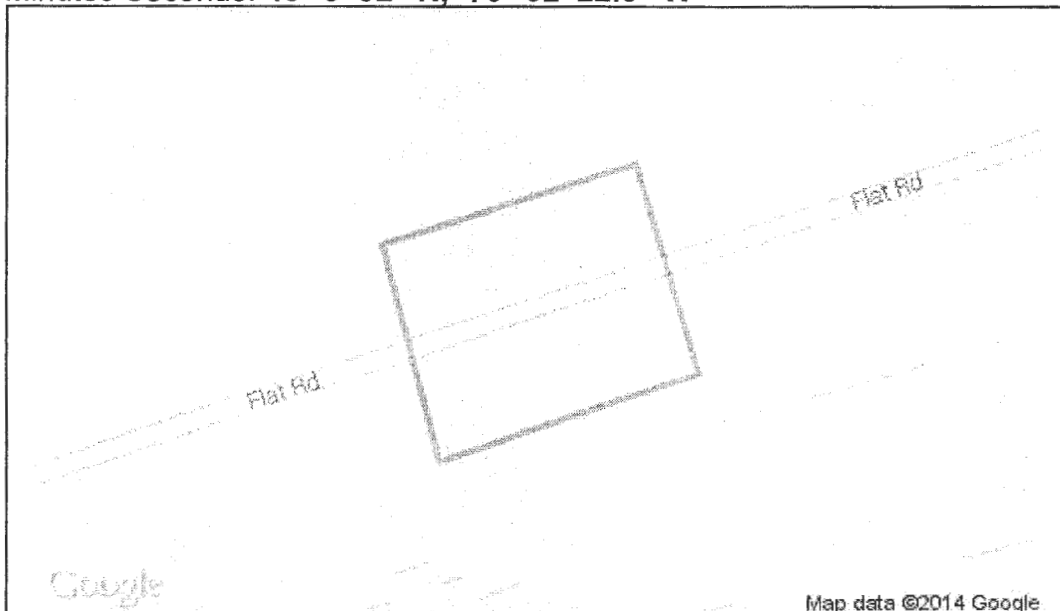
Project Area: **3.0 acres**

County: **Chester Township/Municipality: East Whiteland**

Quadrangle Name: **MALVERN ~ ZIP Code: 19355**

Decimal Degrees: **40.064441 N, -75.539521 W**

Degrees Minutes Seconds: **40° 3' 52" N, -75° 32' 22.3" W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

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Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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PA Department of Conservation and Natural Resources

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PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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16801-4851
NO Faxes Please.

PA Fish and Boat Commission

Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission

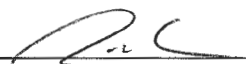
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax: (717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: David Kee
Company/Business Name: ARRO
Address: 1150 Glenlivet Dr, Suite A-19
City, State, Zip: Allentown PA 18106
Phone: (484) 664-7310 Fax: (484) 664-7312
Email: _____

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.



applicant/project proponent signature

5/14/14

date

APPENDIX I

PHMC Response



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

May 20, 2014

David T. Kee, P.E.
ARRO Engineering & Environmental Consultants
649 North Lewis Road, Suite 100
Limerick, PA 19468

Re: File No. ER 2014-1234-029-A
DEP Act 537 Study: Wilburdale & Flat Road Pump
Station Replacements & Upgrades, East Whiteland
Twp., Chester Co.

Dear Mr. Kee:

Thank you for submitting information concerning the above referenced project. The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Based on our survey files, which include both archaeological sites and standing structures, there are no National Register eligible or listed historic or archaeological properties in the area of this proposed project.

Therefore, your responsibility for consultation for this project is complete. However, should you encounter archaeological resources during construction, please notify the Bureau for Historic Preservation at (717) 783-8946.

Sincerely,

Douglas C. McLearen, Chief
Division of Archaeology &
Protection

cc: East Whiteland Township, 209 Conestoga Road, Frazer, PA 19355
DEP, Southeast Regional Office

DCM/tmw



649 N. Lewis Road, Suite 100
Limerick, PA 19468

T: 610.495.0303
F: 610.495.5855

LETTER OF TRANSMITTAL

TO: Pennsylvania Historical and Museum Commission
Bureau of Historic Preservation
400 North Street, Second Floor
Harrisburg, PA 17120-0093

Date:	5/13/14	Job No.	10310.09
Attention:			
Re:	East Whiteland Township		
	Act 537 Study		
	Cultural Resource Notice		
Submittal No.			

WE ARE SENDING YOU:

- ☒ Attached ☐ Under separate cover via _____ the following items:
☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change Order ☒ **Sent via UPS Ground**

Copies	Date	No.	Description	Spec. Section	Action
1	5/13/14		Cultural Resource Notice		
1	5/13/14		Portion of USGS Map showing study areas		
1	5/13/14		PHMC Narrative		

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|----------------------------|---|
| ☐ For Approval | A Approved as submitted | ☐ Resubmit _____ copies for approval |
| ☒ For your use | AN Approved as noted | ☐ Submit _____ copies for distribution |
| ☐ As Requested | RC Returned for correction | ☐ Return _____ corrected prints |
| ☐ For review and comment | NS Not as Specified | ☐ _____ |
| ☐ FOR BIDS DUE _____ | | ☐ DOCUMENTS RETURNED AFTER LOAN TO US |

REMARKS:

--

COPY TO File

SIGNED David Kee
David T. Kee, P.E.

If enclosures are not as noted, kindly notify this office at once.



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CULTURAL RESOURCE NOTICE

DEP USE ONLY

Date Received

Read the instructions before completing this form.

SECTION A. APPLICANT IDENTIFIER

Applicant Name East Whiteland TownshipStreet Address 209 Conestoga RoadCity Frazer State PA Zip 19355Telephone Number 610-648-0600Project Title Act 537 Study

SECTION B. LOCATION OF PROJECT

Municipality East Whiteland Township County Name Chester DEP County Code 15

SECTION C. PERMITS OR APPROVALS

Name of Specific DEP Permit or Approval Requested: Act 537 Study

Anticipated federal permits:

- | | |
|--|---|
| ☐ Surface Mining | ☐ 404 Water Quality Permit |
| ☐ Army Corps of Engineers | ☐ Federal Energy Regulatory Commission |
| ☐ 401 Water Quality Certification | ☐ Other: _____ |

SECTION D. GOVERNMENT FUNDING SOURCES

- | | |
|--|--|
| ☐ State: (Name) _____ | ☒ Local: (Name) <u>East Whiteland Township</u> |
| ☐ Federal: (Name) _____ | ☐ Other: (Name) _____ |

SECTION E. RESPONSIBLE DEP REGIONAL, CENTRAL, DISTRICT MINING or OIL & GAS MGMT OFFICE

DEP Regional Office Responsible for Review of Permit Application ☐ Central Office (Harrisburg)

- | | |
|--|--|
| ☒ Southeast Regional Office (Norristown) | ☐ Northeast Regional Office (Wilkes-Barre) |
| ☐ Southcentral Regional Office (Harrisburg) | ☐ Northcentral Regional Office (Williamsport) |
| ☐ Southwest Regional Office (Pittsburgh) | ☐ Northwest Regional Office (Meadville) |
| ☐ District Mining Office: _____ | ☐ Oil & Gas Office: _____ |

SECTION F. RESPONSIBLE COUNTY CONSERVATION DISTRICT, if applicable.

County Conservation District Telephone Number, if known

Chester County Conservation District

SECTION G. CONSULTANT

Consultant, if applicable Bill Bohner of ARROStreet Address 649 North Lewis Road, Suite 100City Limerick State PA Zip 19468Telephone Number 610-495-2102

SECTION H. PROJECT BOUNDARIES AND DESCRIPTION**REQUIRED**

Indicate the total acres in the property under review. Of this acreage, indicate the total acres of earth disturbance for the proposed activity.

Attach a 7.5' U.S.G.S. Map indicating the defined boundary of the proposed activity.

Attach photographs of any building over 50 years old. Indicate what is to be done to all buildings in the project area.

Attach a narrative description of the proposed activity.

Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission.

REQUESTED

Attach photographs of any building over 40 years old.

Attach site map, if available.

SECTION I. SIGNATURE BLOCK

Applicant's Signature

5/13/14

Date of Submission of Notice to PHMC



Adapted from the Malvern, PA Quadrangle, USGS Topo Maps -7.5 Minute Series

Figure 1

Site Location Map

East Whiteland Township
Act 537 Study
Chester County, PA
Project No. 10310.09



East Whiteland Township
Act 537 Study
PHMC Narrative
Project Number: 10310.09
Date: 5/13/14

This Act 537 study proposes the replacement and upgrades of two existing pump stations – Wilburdale and Flat Road Pump Stations. It also proposes to upgrade approximately 3,400 feet of sanitary sewer lines from the Wilburdale Pump Station near the intersection of Flat Road and Wilburdale Road to Sidley Road. All sanitary sewer line replacement shall be within the existing road. The anticipated disturbance and site area for the upgrades to the pump stations and sanitary sewer is less than 1 acre.

APPENDIX J

Municipal Comments and Responses

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

February 2, 2015

To Whom It May Concern:

On December 17, 2014, Bill Bohner, ARRO Engineers, made a presentation to the East Whiteland Township Planning Commission on the Act 537 Plan Special Study. At the meeting, one member, John Laumer, offered to prepare a response to the presentation. Other members of the Planning Commission offered no comments. Here is Mr. Laumer's response:

Prepared and Submitted by: John Laumer

Based on the preliminary ARRO presentation made to the Planning Commission on December 17, 2014, and on subsequent Commission discussions of points raised, the need clearly exists for improvement of Wilburdale and Flat Road Sewerage Pump Stations and inter-connected sewer mains (the "*conveyance system*").

More public input is needed.

Design flow projections, more than any other single factor, will strongly shape conveyance system design – in a manner of speaking, they 'toss the card into a cocked hat' as to what the pipe and pump capacities will be. Therefore, prior to ARRO initiating further billable design work on the system, the planning and cost implications of wastewater flow estimate(s) needs more public input.

Ideally, the additional public input should include facility managers from manor GVCC tenants and property owners, and especially should draw upon persons with an engineering expertise. Ideally, also, two scenarios should be run: base and upper boundary wastewater flows.

As the business world changed, so did our wastewater.

Wastewater characteristics of and volumes generated by the typical GVCC tenant have changed greatly over the last decade: laboratory, pilot, and commercial production operations, once prominent within the Center, have been relocated to Cambridge MA or similar biotech academic centers, or were closed outright as the conventional R&D pipeline was found to hold diminishing prospects for new products.

Most other water intensive business sectors, unlike the BioPharma sector, require fewer 'knowledge workers' or are otherwise incompatible with the GVCC setting for variety of reasons, most of which are self-evident. Examples include:

1. Pulp and paper production;
2. Power generation by fossil fuel or nuclear power;
3. Specialty & commodity chemical production;
4. Computer circuit board fabrication;
5. Vegetable and fruit processing, canning, freezing, etc;
6. Steel manufacture;
7. Animal slaughter and meat processing; and,
8. Vehicle manufacturing

What are water intensive industries doing to lower their water use?

Corporate water management is important for sustainable development programs, as well to meet investor demands. Corporate management systems have been widely expanded over the last decade to reduce water used per unit of production (saving money on raw materials). The other priority has been to reduce the mass of pollutants from getting into wastewater discharges (saving more money on pretreatment construction and operations). The upshot of such systems is to reduce water consumption by water recycling, through process equipment choices and reconfiguration, and through new operating protocols. (The plant that uses less water can better survive a drought and continues to operate reliably with a less complex wastewater management system in place, even in a flood! Hence, it is more sustainable.)

What are the most plausible water consumption scenarios for GVCC tenants, into the near term (Near term $\leq$ 10 years)?

There is no evidence that water intensive industrial tenants will relocate to or develop as from a startup, as has happened in the past. The converse is also true, though all 8 examples presented in the list above would be incompatible by most citizens, due to noise, odor, toxic emissions, unsightliness, transportation requirements, and difficulties posed by raw material and product storage.

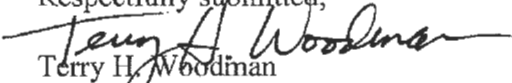
The dream of a new, water-intensive biopharma operation locating in GVCC is just that: a dream.

A far more plausible scenario, by a *long* planning mile, would be for greatly increased overall tenant density, both of employees inside the Center and, eventually, by residences located contiguously to the Center so that those employees can "live work and play" in one closely configured locale. There are already strong indications that that is exactly the "future space" we in East Whiteland are entering.

Conclusion.

Use of wastewater flow numbers that reflect a bygone era of industrial operations 'just because' is potentially a waste of capital and commitment to unneeded operating and maintenance expenses. If the Township wants the large pipes and pumps 'just in case' higher density is coming, then just say so and let's get on with thinking about what that means for planning and zoning and budgeting.

Respectfully submitted,



Terry H. Woodman
Township Manager

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

February 12, 2015

East Whiteland Township Planning Commission
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

RE: East Whiteland Township Act 537 Plan Special
Study for Planning Commission Review; Response to Comments.
ARRO #10310.09

Dear Commission Members:

We would like to take this opportunity to respond to the comments offered by the Commission for the above referenced Act 537 Special Study.

Response:

When preparing this Special Study, development of wastewater flow parameters was based on system operational data that defined a maximum scenario. This operational data reflected that period when the Great Valley Corporate Campus (GVCC) was fully occupied in the mid to late 2000's (2008). With the economic decline over the course of the past five to six years, a number of tenants moved their businesses or facilities from the GVCC to other locations or closed their businesses altogether.

In an effort to establish a more current base flow for the purposes of this Special Study, operational data for 2014 was reviewed.

Assuming that the former case described above represents the upper boundary scenario, the latter (based on 2014 data) would more accurately represent a base scenario.

The two primary property owners in the GVCC include Liberty Properties and Johnson & Johnson. Both of these entities were consulted and both provided their anticipated future wastewater loadings based on their known plans for development or redevelopment of their properties.

For the two flow cases, the average daily base flows from the GVCC are as follows:

Upper Boundary (2008) – 279,600 gpd
Base Boundary (2014) – 238,466 gpd

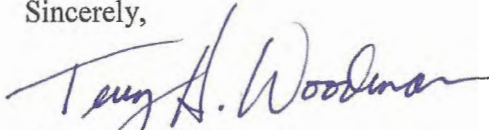
When including the projected flows provided by the primary property owners of Liberty Properties and Johnson & Johnson, the projected average daily flows from the GVCC are as follows:

Upper Boundary (2008) – 389,575 gpd
Base Boundary (2014) – 348,375 gpd

Upon review of these boundary conditions, there does not appear to be a significant difference in the base and upper flow-rates. Therefore, the sizing of infrastructure to accommodate the projected flows would be better served by utilizing the Upper Boundary condition to remain conservative.

Thank you for providing us with your comments and input. If you should have any additional questions or comments, please contact Bill Bohner at ARRO. His phone number is 610-495-2102.

Sincerely,

A handwritten signature in blue ink that reads "Terry H. Woodman". The signature is fluid and cursive, with the first name "Terry" and last name "Woodman" clearly legible.

Terry H. Woodman
Township Manager

c: William H. Steele, Dir. Public Works – East Whiteland Township
William L. Bohner, Jr., P.E. – ARRO
Kevin McAghon, P.E. – ARRO

APPENDIX K

County Comments and Responses



THE COUNTY OF CHESTER



COMMISSIONERS

Kathi Cozzone
Terence Farrell
Michelle Kichline

JEANNE E. CASNER, MPH, PMP
County Health Director

CHESTER COUNTY HEALTH DEPARTMENT
Water and Sewage Division
Chester County Government Services Center
601 Westtown Road, Suite 288
West Chester, PA 19380-0990
610-344-6526 FAX: 610-344-5934
www.chesco.org/health

January 6, 2015

Ms. Terry Woodman, Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355-1699

RE: East Whiteland Township
Act 537 Plan Special Study
Wilburdale and Flat Road Pump Stations

Dear Ms. Woodman,

The Chester County Health Department (CCHD) is in receipt of the above noted Act 537 Plan Revision document. This Special Study was prepared by ARRO Engineering and Environmental Consultants and dated November, 2014. It was received by CCHD on November 25, 2014 and has been reviewed in accordance with Title 25, Environmental Protection, Chapter 71, Administration of Sewage Facilities Planning Program, Chapter 71 § 71.31.(b.). We offer the following comments:

- In Section I, Previous Wastewater Planning, item #3 on page 6 references the DEP approved 2013 Special Study flow triggers. For Continuity those triggers should be included in this Special Study.
- In Section II, Physical and Demographic Analysis:
 - Section A. on page 8 references maps found in Appendix B. These maps are too small to adequately provide the detail intended here.
 - Section B., Identify Physical Characteristics of the Planning Area, on page 8, references the map in Appendix D and mentions Great Valley Parkway. The map in Appendix C labels this as Great Valley Boulevard. Also, Great Valley Boulevard is referenced in item #5 on page 20. You may want to change one or the other for accuracy and consistency.
 - Section E. Topography, on page 9, the maps are too small to be of any value in understanding the area.

RECEIVED
JAN - 8 2015

ARRO Consulting, Inc.

- In Section III, Existing (Wastewater) Facilities, item B identifies 4 lots in the planning area that use on-lot sewage facilities and will not be connected to the public sewer at this time. However, now would be the appropriate time to address them in this plan so that additional planning will not be necessary when these lots are eventually connected.

East Whiteland Township

Act 537 Special Study

Wilburdale and Flat Road Pumping Stations

January 6, 2015

Page 2.

- In Section VI, Future Growth and Land Development, Section A.1., on page 13, lists the Glasgow Tract, Liberty Properties and J&J Properties, which are not identified on any map in this plan. Since they are mentioned, and flows are assigned to each on page 17, they should be identified on the map of the planning area.

CCHD recognizes that the purpose of this plan is to gain approval to upgrade the Wilburdale and Flat Road Pumping Stations to provide adequate capacity to provide for the ultimate final development of the planning area. We consider this planning to be appropriate and recommend approval once all review comments have been addressed.

Once this plan has been approved by PA DEP, please forward a final version to CCHD for our files. Electronic copies of the finally approved plan are acceptable.

Thank you for the opportunity to review this Special Study Plan. Please contact me with any questions at 610-344-6239.

Sincerely,



Ralph E. DeFazio, SEO

Environmental Health Supervisor

Division of Individual Water and Sewage

Chester County Health Department

cc: William Steele, East Whiteland Township
Kevin McAghon, P.E. ARRO Engineering
William Bohner, P.E., ARRO Engineering
Elizabeth Mahoney, PA DEP, SERO
CCPC
file

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

January 26, 2015

RECEIVED
JAN 29 2015

Mr. Ralph E. DeFazio
Environmental Health Supervisor
Water and Sewage Division
Chester County Health Department
Government Services Center, Suite 288
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990

ARRO Consulting, Inc.

RE: East Whiteland Township Act 537 Plan Special
Study for Health Department Review; Response to Comments.
ARRO #10310.09

Dear Mr. DeFazio:

East Whiteland Township would like to take this opportunity to respond to the Health Department's comments offered in the Department's January 6, 2015 review letter for the above referenced Act 537 Special Study.

Comment/Bullet 1:

In Section I, Previous Wastewater Planning, item #3 on page 6 references the DEP approved 2013 Special Study flow triggers. For continuity, those triggers should be included in the Special Study.

Response:

Acknowledged. Text has been added to this subsection showing the referenced trigger that was referenced in the PA DEP approval.

Comment/Bullet 2:

In Section II, Physical and Demographic Analysis:

Sub-bullet 1:

- Section A. on page 8 references maps found in Appendix B. These maps are too small to adequately provide the detail intended here.

Mr. Ralph E. DeFazio
January 26, 2015, page 2

Response:

These maps have been plotted at a larger scale (24"x36") to reflect the needed detail.

Sub-bullet 2:

- Section B., Identify Physical Characteristics of the Planning Area, on page 8, references the map in Appendix D and mentions Great Valley Parkway. The map in Appendix C labels this as Great Valley Boulevard. Also, Great Valley Boulevard is referenced in item #5 on page 20. You may want to change one or the other for accuracy and consistency.

Response:

Acknowledged. Text on the mapping and in the body of the Special Study has been revised to reflect consistent references to Great Valley Parkway.

Sub-bullet 3:

- Section E. Topography, on page 9, the maps are too small to be of any value in understanding the area.

Response:

Acknowledged. A larger scale topographic map has been provided in the appendix of the Special Study for reference.

Comment/Bullet 3:

In Section III, Existing (Wastewater) Facilities, item B identifies 4 lots in the planning area that use on-lot sewage facilities and will not be connected to the public sewer at this time. However, now would be the appropriate time to address them in this plan so that additional planning will not be necessary when these lots are eventually connected.

Response:

Acknowledged. Text has been added to this subsection that stipulates the projected flows from each of the OLDS properties have been accounted for in the overall flow projections. In addition, the planning area mapping reflects that these properties have been included in the Special Study's planning area.

Mr. Ralph E. DeFazio
January 26, 2015, page 3

Comment/Bullet 4:

In Section VI, Future Growth and Land Development, Section A.1., on page 13, lists the Glasgow Tract, Liberty Properties and J&J Properties, which are not identified on any map in this plan. Since they are mentioned, and flows are assigned to each on page 17, they should be identified on the map of the planning area.

Response:

Acknowledged. The mapping has been revised accordingly.

Thank you for providing us with your comments and input. If you should have any additional questions or comments, please contact Bill Bohner at ARRO. His phone number is 610-495-2102.

Sincerely,

A handwritten signature in black ink, appearing to read "Terry H. Woodman". The signature is fluid and cursive, with a large initial "T" and "W".

Terry H. Woodman
Township Manager

c: William H. Steele, Dir. Public Works – East Whiteland Township
William L. Bohner, Jr., P.E. – ARRO
Kevin McAghon, P.E. – ARRO



THE COUNTY OF CHESTER



COMMISSIONERS

Terence Farrell
Kathi Cozzone
Michelle Kichline

RONALD T. BAILEY, AICP
Executive Director

PLANNING COMMISSION

Government Service Center, Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990
(610) 344-6285 Fax: (610) 344-6515

January 22, 2015

RECEIVED
JAN 28 2015

William Holmes, Chairperson
Board of Supervisors
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

ARRO Consulting, Inc.

Re: East Whiteland Township
Official Sewage Facilities Plan Special Study - Wilburdale Road and Flat Road Pump Stations

Dear Mr. Holmes:

The Chester County Planning Commission (CCPC) has reviewed the Draft 537 Plan Special Study dated November 2014 as required by Section 71.53(a)(2) of the Pennsylvania Sewage Facilities Act (Act 537). The Plan was prepared by ARRO. The Plan was received on November 25, 2014.

This Plan was prepared to evaluate alternatives to provide for upgraded Township conveyance system facilities to meet the future sanitary sewer needs of the Great Valley Corporate Campus and adjacent properties along Wilburdale Road and Flat Road, as well as examine the related impacts those needs will have on the Township's Flat Road Pump Station and the Wilburdale Pump Station.

The following comments are offered based on review of the document:

A. Consistency with the County Comprehensive Plan – *Landscapes2*:

1. The Study Area for East Whiteland Township, generally located south of Charlestown Township in the north-eastern portion of the Township, is primarily defined as the Suburban Landscape. The Act 537 Plan is consistent with the policies of *Landscapes2*, as they relate to the Suburban Landscape, including *Landscapes2* Policy UI 2.5 which states: "Maintain, upgrade, or expand existing public sewer and water facilities to support redevelopment and new development in designated growth areas, where consistent with local land use planning, while discouraging the extension of those facilities in the rural, agricultural and natural landscapes." The Plan indicates that East Whiteland Township is planning to upgrade components of the Township's conveyance system in order to accommodate future flows from the Great Valley Corporate Campus and adjacent properties along Wilburdale Road and Flat Road. The Plan, as proposed, is consistent with the goals and policies of *Landscapes2*.

Page: 2

January 22, 2015

Re: East Whiteland Township

Official Sewerage Facilities Plan Special Study – Wilburdale Road and Flat Road Pump Stations

2. *Watersheds*, the water resources element of the County comprehensive plan, identifies Objective 7.2 of Goal 7, “concentrate planned utility service areas to support designated growth areas,” to be achieved through key strategies such as the extension of wastewater facilities in Suburban Landscapes. As such, East Whiteland Township, through its Act 537 Plan Update, intends to upgrade components of their public sewer system to accommodate existing and future planned growth. Therefore the goals for wastewater in East Whiteland Township are consistent with those of *Watersheds*.

B. Selection of Alternative:

1. The selected alternative for East Whiteland Township is to address the requirements necessary to upgrade components to the municipal conveyance system to accommodate future flows from the Great Valley Corporate Campus and adjacent properties. The proposed alternative is supported by *Landscapes2* Sewer and Water Policy UI 2.2, “Support infrastructure expansion and improvements that are consistent with *Landscapes2* and adopted regional and local plans that support projected future demands, avoid capacity shortfalls, protect natural resources, and provide safe and reliable utility services.” As proposed, this alternative is consistent with the goals and policies of *Landscapes2*.

C. General Comments

1. The CCPC supports the comments made by the Chester County Health Department in their letter, dated January 6, 2015.
2. For clarity, please include a map of the Pump Stations, and associated lines, to be included in the Appendix as a separate map.
3. Please include information relating to the East Valley Creek being designated as an Exceptional Value stream. While there is text referencing the Act 167 Plan for this watershed, there is no discussion relating to the State designation.
4. Page 5. Previous Wastewater Planning. For clarity, please include information on the Valley Forge Sewer Authority’s Act 537 Plan, adopted November 2006, which is the ultimate treatment and disposal method of this wastewater.
5. Page 6. Previous Wastewater Planning. For clarity, please include more information on the flow indicators, which are referenced as being included in the September 2013 Special Study, that was approved by PA DEP.
6. Page 6. Identify Land use Plans and Zoning Maps. Please update the text to reflect the title of the Chester County Comprehensive Plan as “*Landscapes2*.”

Page: 3

January 22, 2015

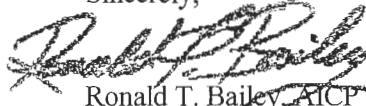
Re: East Whiteland Township

Official Sewage Facilities Plan Special Study – Wilburdale Road and Flat Road Pump Stations

7. Page 6. Identify Land Use and Zoning Maps. Please include the adoption dates of the plans listed.
8. Page 8. Identify Planning Area, Municipal Boundaries, and Service Area Boundaries Through mapping. Please include a larger map in Appendix B. As presented, the text is unclear.
9. Page 9. Topography. The map, referenced as being in Appendix D, should be presented in a larger format, so that it is easier to read.
10. Page 12. Individual and Community On-lot Disposal Systems. The text indicates that there are four lots along Wilburdale Road that could potentially be served through the extension of an 8-inch collector sewer. It would seem that this planning effort would be an appropriate time to address this potential extension, as those lots would likely be connected to the system in the future.
11. Page 13. Description of Future Growth and Development. For clarity, please include a map that shows the zoning districts/land use designations with the existing development and future growth (if known) included on it, as the plan presents future wastewater needs for specific parcels.
12. Page 27. Comprehensive Plans. Please update the text to reflect the adoption date of *Landscapes2* as November 2009.
13. Page 29. County Stormwater Management Plans. The text should include a reference to the Countywide Act 167 Plan, which is an addendum to the *Watersheds* document. While the study area is correctly identified as being within the East Valley Creek watershed, it would be useful to readers, to include a reference to the Countywide Act 167 document as well.
14. Appendices. It would be helpful to have all of the maps included in the appendices presented in a larger size, to make them more readable.

Thank you for the opportunity to offer comments on this plan. We trust that these comments will be of assistance to you as you prepare the final document for submission to PA DEP. The CCPC recommends approval of the Plan after all comments have been addressed. If you have any questions, please contact Carrie Conwell at 610-344-6285.

Sincerely,


Ronald T. Bailey, AICP
Executive Director

RTB/CC/yg

cc: Elizabeth Mahoney, PaDEP
Ralph DeFazio, Chester County Health Department
Terry Woodman, Manager, East Whiteland Township
William Bohner, Jr., PE, ARRO

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

February 4, 2015

Mr. Ronald T. Bailey, AICP
Executive Director
Chester County Planning Commission
Government Services Center
Suite 270
601 Westtown Road
P.O. Box 2747
West Chester, PA 19380-0990

RE: East Whiteland Township Act 537 Plan Special Study;
Great Valley Corporate Campus (Wilburdale PS and Flat Rd. PS);
Planning Commission Review; Response to Comments.
ARRO #10310.09

Dear Mr. Bailey:

East Whiteland Township would like to take this opportunity to respond to the Planning Commissions comments offered in the Commissions' January 22, 2015 review letter for the above referenced Act 537 Special Study.

General Comment 1:

The CCPC supports the comments made by the Chester County Health Department in their letter dated January 6, 2015.

Response:

Acknowledged.

General Comment 2:

For clarity, please include a map of the pump stations, and associated lines, to be included in the Appendix as a separate map.

Response:

Acknowledged. A collection/conveyance system map has been added to the Appendix for reference.

Mr. Ronald T. Bailey, AICP
February 4, 2015

General Comment 3:

Please include information relating to the East Valley Creek being designated as an exceptional value stream. While there is text referencing the Act 167 Plan for this watershed, there is no discussion relating to the State designation.

Response:

This discussion will be added to Section VI.A.8 titled "County Stormwater Management Plan.

General Comment 4:

Page 5. Previous Wastewater Planning: For clarity, please include information on the Valley Forge Sewer Authority's Act 537 Plan, adopted November 2006, which is the ultimate treatment and disposal method for this wastewater.

Response:

Acknowledged. Text with this information will be added to Section I.A.1. "Previous Wastewater Planning".

General Comment 5:

Page 6. Previous Wastewater Planning. For clarity, please include more information on the flow indicators, which are referenced as being included in the September 2013 Special Study, that was approved by PA DEP.

Response:

Acknowledged. The approved flow indicator will be added to the text accordingly.

General Comment 6:

Page 6. Identify Land Use Plans and Zoning Maps. Please update the text to reflect the title of the Chester County Comprehensive Plan as "Landscapes2".

Mr. Ronald T. Bailey, AICP
February 4, 2015

Response:

Acknowledged. The text will be revised accordingly.

General Comment 7:

Page 6. Identify Land Use and Zoning Maps. Please include the adoption dates of the plans listed.

Response:

Acknowledged. Adoption dates will be added to the listing of plans and ordinances accordingly.

General Comment 8:

Page 8. Identify Planning Area, Municipal Boundaries, and Service Area Boundaries Through Mapping. Please include a larger map in Appendix B. As presented, the text is unclear.

Response:

Acknowledged. A larger (24"x36") map/plan will be included in Appendix B for reference.

General Comment 9:

Page 9. Topography. The map, referenced as being in Appendix D, should be presented in a larger format, so that it is easier to read.

Response:

Acknowledged. A larger topographic map will be provided in Appendix D.

General Comment 10:

Page 12. Individual and Community On-Lot Disposal Systems. The text indicates that there are four lots along Wilburdale Road that could potentially be served through the extension of an 8 inch collector sewer. It would seem that this planning effort would be an appropriate time to address this potential extension, as those lots would likely be connected to the system in the future.

Response:

Mr. Ronald T. Bailey, AICP
February 4, 2015

The projections in Section IV include the flows for these four properties in anticipation of future public sanitary sewer connection.

General Comment 11:

Page 13. Description of Future Growth and Development: For clarity, please include a map that shows the zoning districts/land use designation with the existing development and future growth (if known) included on it, as the plan presents future wastewater needs for specific parcels.

Response:

Acknowledged. The above referenced map will be provided.

General Comment 12:

Page 27. Comprehensive Plans. Please update the text to reflect the adoption date of Landscapes2 as November 2009.

Response:

Acknowledged. This text adjustment will be made.

General Comment 13:

Page 29. County Stormwater Management Plans. The text should include a reference to the Countywide Act 167 Plan, which is an addendum to the Watersheds document. While the study area is correctly identified as being within the East Valley Creek watershed, it would be useful to readers, to include a reference to the Countywide Act 167 document as well.

Response:

Acknowledged. The above referenced text will adjusted accordingly.

General Comment 14:

It would be helpful to have all of the maps included in the appendices presented in a larger size, to make them more readable.

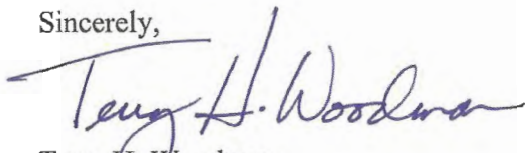
Response:

Acknowledged. The maps will be plotted at a larger size and those larger prints will be incorporated into the appendices.

Mr. Ronald T. Bailey, AICP
February 4, 2015

Thank you for providing us with your comments and input. If you should have any additional questions or comments, please contact Bill Bohner at ARRO. His phone number is 610-495-2102.

Sincerely,

A handwritten signature in dark ink, reading "Terry H. Woodman". The signature is fluid and cursive, with a long horizontal stroke at the beginning.

Terry H. Woodman
Township Manager

c: William H. Steele, Dir. Public Works – East Whiteland Township
William L. Bohner, Jr., P.E. – ARRO
Kevin McAghon, P.E. – ARRO

APPENDIX L

Proof of Publication

Proof of Publication of Notice in the Daily Local News

State of Pennsylvania
County of Montgomery

{ss:

Marcia B Burns, Designated Agent, of the Daily Local News Company, a corporation, being duly affirmed, deposes and says that the *Daily Local News*, a newspaper of general circulation, published at 250 N. Bradford, Ave., West Chester, Chester County, Pennsylvania, was established November 19, 1872, and Incorporated December 11, 1911, since which date the *Daily Local News* has been regularly issued in Chester County, and that the printed notice or publication attached hereto is exactly the same as printed and published in the regular editions and issues of the said *Daily Local News* on the following dates viz:

February 20, 2015, A.D.

COPY OF NOTICE OR PUBLICATION

PUBLIC NOTICE

An Act 537 Plan Special Study has been prepared for East Whiteland Township, Chester County, Pennsylvania. The Special Study addresses the planning requirements necessary to provide for public sanitary conveyance improvements to existing portions of

the Township's system. These improvements would provide the capacity for planned development to be located in the Great Valley Corporate Campus in East Whiteland Township.

Wastewater from the planning area identified in this document would be conveyed via upgraded wastewater conveyance system infrastructure, located along Flat Road, to Sidley Road at the western end of the planning area. The wastewater, once received at the Sidley Road sewer main would be conveyed to the Mill Lane pump station. This discharges through a force main and gravity sewer through East Whiteland Township and Tredyffrin Township to the Valley Forge Sewer Authority's Wastewater Treatment Plant.

To meet the wastewater conveyance needs of the planning area, it is proposed that the Township implement the selected alternatives in two primary phases.

For Phase I, it is proposed that the existing 8" gravity main, located in Flat Road (west of Wilburdale Road) be replaced with 1400 +/- feet of new 12" pipe. The improved sewer line will provide capacity for the existing and projected future flows. In addition the Wilburdale Pump Station, located at the corner of Wilburdale Road and Flat Road (and its respective forcemain) would also be planned for upgrades.

For Phase II, the intent is to make sanitary sewer improvements to the Flat Road Pump Station located in the eastern portion of the Great Valley Corporate Campus, adjacent to Flat Road. Phase II improvements will include the upgrading of the pump station only. No upgrades to the forcemain or gravity sewer main are planned.

The engineer's opinions of probable construction cost for these alternatives and the respective phases are:

Phase I: \$1,372,000
Phase II: \$642,000

The selected technical alternative will be paid for and financed through bond funding mechanisms and sharing of costs between the municipality and developers. Costs shall be recouped through established tapping fee and user rate structures.

In accordance with Chapter 71.3(c) of the Pennsylvania Code, the Township is providing a 30-day public comment period. The plan is available, for review, at the Township's offices, 209 Conestoga Road, Frazer, PA 19355 from 9:00 AM to 4:00 PM, Monday through Friday. Comments may be addressed to Ms. Terry Woodman, Township Manager, and are due no later than thirty (30) days from the date of this advertisement.
DLN - 2/20 - 1a

Affiant further deposes that he/she is the proper person duly authorized by the Daily Local News Company, a corporation, publishers of said *Daily Local News*, a daily newspaper, to verify the foregoing statement under oath, and that affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place and character of publication are true.

Marcia B Burns

Affirmed to and subscribed before me this

24th

day of February, 2015

Eleanor B. Reichel

COMMONWEALTH OF PENNSYLVANIA
Notary Public
NOTARIAL SEAL
ELEANOR B. REICHEL, Notary Public
Lansdale Boro., Montgomery County
My Commission Expires December 15, 2018

APPENDIX M

Public Comments and Responses

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

March 26, 2015

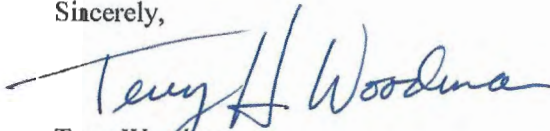
William L. Bohner, Jr., P.E.
ARRO Consulting, Inc.
649 N. Lewis Road
Suite 100
Limerick, PA 19468

RE: East Whiteland Township Sewage Facilities
Planning Special Study for the
Great Valley Corporate Campus;
Public Comment Period.

Dear Mr. Bohner:

In accordance with Title 25, Chapter 71 of the Pennsylvania Code, a 30-day public comment period was conducted for the East Whiteland Township Sewage Facilities Planning Special Study, for the upgrades of public sanitary sewer facilities serving the Great Valley Corporate Campus. The public comment period began on February 20, 2015 and ended on March 21, 2015. During that period, no public comments were received by East Whiteland Township.

Sincerely,


Terry Woodman
Township Manager

APPENDIX N

Adopted Resolution

The Township of
EAST WHITELAND

BOARD OF SUPERVISORS: BILL HOLMES • JOHN MOTT • WILLIAM WRABLEY

TERRY H. WOODMAN, TOWNSHIP MANAGER • KENNETH N. BATTIN, DIRECTOR OF CODES & LIFE SAFETY • GENE DOOLEY, CHIEF OF POLICE
CATHY PALMER, FINANCE DIRECTOR • G. ERIC REED, CODES ENFORCEMENT OFFICER • WILLIAM H. STEELE, PUBLIC WORKS DIRECTOR

RECEIVED
APR 20 2015

April 16, 2015

ARRO Consulting, Inc.

Mr. William Bohner
Arro Engineering
649 N. Lewis Road, Ste. 100
Limerick, PA 19468

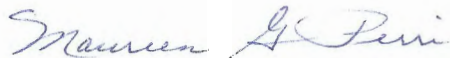
RE: Wilburdale – Flat Road Pump Station

Dear Mr. Bohner:

Enclosed you will find an executed copy of Resolution 16-2015 relative to the plan revisions of Act 537 Special Study adopted by the Board on April 8, 2015 for your files.

If I can be of any further assistance, please feel free to contact us.

Very truly yours,



Maureen G. Perri
Township Secretary

Enc.

EAST WHITELAND TOWNSHIP

RESOLUTION NO. 16-2015

Resolution for Plan Revision Act 537

RESOLUTION OF EAST WHITELAND TOWNSHIP BOARD OF SUPERVISORS,
CHESTER COUNTY, PENNSYLVANIA (hereinafter "the Township").

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 Pennsylvania Department of Environmental Protection (PADEP) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, require the 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's service area.

NOW, THEREFORE, BE IT RESOLVED, that East Whiteland Township Board of Supervisors hereby adopts and submits to the Pennsylvania Department of Environmental Protection for its approval, as a revision to the "Official Plan" of the Township, this Act 537 Special Study.

East Whiteland Township (Township) hereby approves and adopts the Act 537 Special Study which establishes the planning requirements necessary to provide public sanitary sewer infrastructure improvements located in and adjacent to the Great Valley Corporate Campus (GVCC) in the north central part of the Township. Improvements are a result of wastewater needs generated from proposed development within and adjacent to the GVCC. Selected alternatives for infrastructure improvements include upgrades to the Wilburdale Pump Station and Force Main, upgrades to the Flat Road gravity sewer main, and upgrades to the Flat Road Pump Station. The Township is committed to implementing the recommendations of this Special Study in accordance with the Study's implementation schedule.

The Township finds that the Act 537 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.

ADOPTED this 8th day of April, 2015.

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP

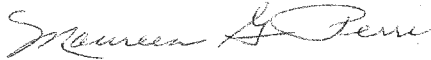


William Holmes, Chair

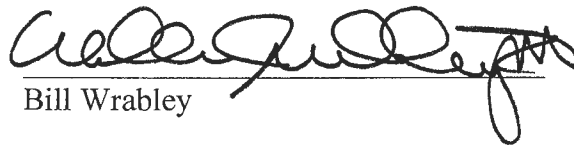


John A. Mott

ATTEST:



Township Secretary



Bill Wrabley

I, Maureen G. Perri, Secretary, East Whiteland Township, hereby certify that the foregoing is a true copy of Township Resolution No.16-2015, adopted April 8, 2015.

(TOWNSHIP SEAL)



Secretary

APPENDIX O

Approved Plan of Study and Task Activity Report



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

April 17, 2014

Ms. Terry H. Woodman, Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Re: Act 537 - Plan of Study
Great Valley Corporate Campus Special Study
East Whiteland Township
Chester County

Dear Ms. Woodman:

We have completed our review of your municipality's proposed Plan of Study, as prepared by Mr. William L. Bohner, Jr., P.E., of ARRO Engineering and Environmental Consultants, dated February 25, 2014, and a proposed Task Activity Report dated January 2014.

The proposed Special Study will provide planning to address the wastewater needs of the Great Valley Corporate Campus (GVCC) in East Whiteland Township, Chester County and will provide planning for any necessary upgrades to the existing collection and conveyance system that serves the GVCC. These facilities include the existing Wilburdale Pump Station, force main and gravity sewer as well as the Flat Road Pump Station that serves the easternmost portion of the GVCC. The completed Special Study is scheduled to be submitted to the Department of Environmental Protection (DEP) in November 2014.

We note that this planning effort addresses Phase IV of the East Whiteland Township/Charlestown Township (Southside) Act 537 Special Study that was approved by DEP on September 13, 2013. Please provide a status update on the implementation of the remaining phases of this Special Study in the proposed special study for the GVCC.

Approval of this proposed Plan of Study is hereby granted. The estimated cost of the plan is \$33,964. Please be advised the approval of this scope of work is not a guarantee of eligibility of planning costs for reimbursement by the Commonwealth pursuant to Section 6 (a) of Act 537 and 25 Pa Code Chapter 71 of DEPs regulations.

This Plan of Study approval does not constitute a final action by DEP. When a completed plan is submitted to us, we will act upon it consistent with Pa. Code Title 25, Chapter 71.

Please consider the following comments as your municipality prepares its Act 537 Official Plan Update:

Your municipality's Act 537 Official Plan Update is to be formatted as suggested in the "A Guide for Preparing Act 537 Update Revisions" including the necessary items listed in the "Act 537 Plan Content and Environmental Assessment Checklist." All necessary items must be included, and a copy of the completed checklist must be included with your Act 537 Plan. This form is available on our website at:

http://www.dep.state.pa.us/dep/deputate/watermgt/wqp/Forms/Act537/Forms_537Plan.htm

Also, please be advised that DEP will not pay grants under the act for planning costs incurred prior to the date of this Plan of Study approval or for information that has been completed previously under local, state, or federal funding programs. In addition, approval of this POS/TAR does not guarantee that all tasks listed will be eligible for reimbursement.

Please note that any new land developments associated with this plan will not be eligible for exemptions from sewage facilities planning under Chapter 71, Section 71.51(b)(2), until after the receiving facilities have been constructed. Applicants proposing projects that will coordinate new development construction with the construction of municipal conveyance or treatment facilities must submit Sewage Facilities Planning Modules for adoption by the municipality and approval by DEP.

If you have any questions, please contact me at 484.250.5184.

Sincerely,



Kelly Boettlin
Sewage Planning Specialist 2
Clean Water

cc: Chester County Planning Commission
Chester County Health Department
Mr. Bohner - ARRO Engineering and Environmental Consultants
Ms. Vollero - RCSOB, 11th Floor, Sewage Facilities
Planning Section
Re 30 (GJE14CLW)107-4



February 4, 2014

Terry Woodman
Township Manager
East Whiteland Township
209 Conestoga Road
Frazer, PA 19355

Limerick Office
649 North Lewis Road
Suite 100
Limerick, PA 19468
T 610.495.0303
F 610.495.5855

RE: East Whiteland Township;
Act 537 Special Study for the Wilburdale Pump Station and
Great Valley Corporate Campus Planning Area
ARRO # 10310.09

Dear Ms. Woodman:

In keeping with the Pennsylvania Department of Environmental Protection's (DEP) requirements to prepare an Act 537 Special Study (Special Study) for the Wilburdale Pump Station and the Great Valley Corporate Center planning area, we have prepared a Plan of Study and Task Activity Report. These documents must be submitted to DEP at the time that the work on the Special Study is initiated. The Plan of Study establishes the project scope for DEP and the Task Activity Report establishes the budget. The Task Activity Report is DEP's primary tool for budgeting as it relates to providing 50% reimbursement to municipalities for their Act 537 planning efforts.

Please sign the attached Task Activity Report (11x17 sheet) in the lower right hand corner of the report. Return it to my attention and I will send both documents to DEP for processing.

If you have any questions regarding these documents, please contact me. You can reach me at 610-495-2102 or at bill.bohner@thearrogroup.com.

Sincerely,

William L. Bohner, Jr., P.E.
Project Engineer

WLB:car

Attachment

c: Kevin McAgdon, P.E. – ARRO

Bohner, Bill

From: UPS Quantum View <auto-notify@ups.com>
Sent: Wednesday, February 26, 2014 11:14 AM
To: Bohner, Bill
Subject: UPS Delivery Notification, Tracking Number 1Z1667160396655935

x

UPS My Choice® can help you avoid missed home deliveries.

[Learn More](#)

***Do not reply to this e-mail. UPS and ARRO Consulting, Inc. will not receive your reply.

At the request of ARRO Consulting, Inc., this notice is to confirm that the following shipment has been delivered.

Important Delivery Information

Tracking Number: 1Z1667160396655935

Delivery Date / Time: 26-February-2014 / 10:42 AM

Delivery Location: FRONT DESK

Signed by: CAMBLE

Shipment Detail

Ship To:

Kelly Boettlin
PA Dept. Environmental Protection
2 E MAIN ST
NORRISTOWN
PA
19401
US

Number of Packages: 1

UPS Service: GROUND

Weight: 1.0 LBS

Reference Number 1: 10310.09 POS-TAR_WLB

**EAST WHITELAND TOWNSHIP
GREAT VALLEY CORPORATE CAMPUS ACT 537 SPECIAL STUDY**

In accordance with Title 25, Chapter 71, Administration of the Sewage Facilities Planning Program, of the Pennsylvania Code, a Plan of Study has been developed, for the preparation of a revision to the East Whiteland Township (Township) Act 537 Sewage Facilities Plan (Plan). This is being prepared to establish the planning elements that are necessary to meet the requirements of the Pennsylvania Department of Environmental Protection (PADEP) as they relate to the preparation of an Act 537 Plan Special Study (Special Study). This Special Study is to address the planning requirements necessary to address the need to upgrade existing collection and conveyance facilities that serve the Great Valley Corporate Campus (GVCC) in East Whiteland Township. These facilities include the existing Wilburdale Pump Station, force main, and gravity sewer as well as the Flat Road Pump Station that serves the eastern most portion of the GVCC. The planning area, as delineated on the location plan, will be the planning area for this Special Study. The Special Study shall become an amendment to the current Township-wide Act 537 Plan.

Based on the PADEP Act 537 Plan Content and Environmental Assessment Checklist, the following addresses the planning requirements necessary to complete the study:

Executive Summary

1. Prepare a table of contents for the document.
2. Prepare a plan summary (Executive Summary).
 - A. Identify the planning area to be served by the future collection and conveyance system.
 - B. Identify the alternative chosen alternative.
 - C. Include the cost opinion for implementing the proposed alternative.
 - D. Identify the municipal commitments necessary to implement the plan.
 - E. Provide a schedule for implementing the proposed project.
3. Include original signed and sealed Resolutions of Adoption.
4. Include comments provided by the Township Planning Commission, Chester County Planning Commission, and Chester County Health Department.
5. Include Proof of Public Notice.

6. Include a copy of all written comments received and written responses to each comment.
7. Prepare a project implementation schedule.
8. If any planning inconsistencies are identified, documentation will be provided discussing the resolution of the inconsistencies. If none are identified, a statement will be made to that effect.

General Plan

I. Previous Wastewater Planning

- A. Identify and discuss existing wastewater planning.
 1. Discuss previous Act 537 planning.
 2. Discuss planning that has not been done in accordance with an approved implementation schedule.
 3. Discuss additional planning, if any, that is anticipated or planned by East Whiteland Township.
 4. Discuss planning that has been done via official plan revision such as planning modules or addenda.
- B. Identification of Municipal and County planning documents.
 1. Identify land use plans and zoning maps as they pertain to East Whiteland Township.
 2. Identify the zoning regulations.

II. Physical and Demographic Analysis

- A. Identify the planning area, municipal boundaries and service area boundaries utilizing existing mapping.
- B. Identify physical characteristics of the planning area. Existing mapping will form the basis for this identification supplemented by USGS and National Wetlands Inventory maps, as required.
- C. Discussion of soils characteristics is not applicable to this Special Study.
- D. Discussion of geological features in the service area is not applicable to this Special Study.
- E. Discuss topographic features in the service area.

- F. Identification of potable water supply is not applicable to this Special Study.
- G. Identify wetlands in the area utilizing National Wetlands Inventory Mapping and existing Act 537 mapping.

III. Existing Sewage Facilities in the Planning Area

- A. Identify and describe municipal sewerage systems in the planning area.
 - 1. Discuss location, size and ownership of existing collection and conveyance facilities. A map will be provided to show the location of the collection and conveyance facilities within East Whiteland Township that could potentially serve the planning area.
 - 2. Providing a narrative and schematic diagram of the basic treatment process is not applicable to this Special Study.
 - 3. Providing a description of the problems, if any, with the existing treatment plant is not applicable to this Special Study. However, a description of problems, if any, associated with the existing conveyance system will be discussed.
 - 4. Providing details, if any, relative to ongoing upgrading or expansion of the treatment facilities is not applicable to this Special Study. However, a description of ongoing upgrades or expansion, if any, of the conveyance system will be discussed.
 - 5. Provide a description of operation and maintenance requirements and the status of past and present compliance with these requirements.
- B. 1,2,3,4. This Special Study is to address public sewers service and related upgrades within the planning area, There are four lots along Wilburdale Road that have on-lot systems. It is not planned that public sewer will be extended to these lots at this time. However, capacity will be allotted in the Wilburdale pump station in the event that public sewer is needed in the future.
- C. 1,2,3. Identification of wastewater sludge and septage generation is not considered applicable to this Special Study.

IV. Future Growth and Development

- A. Describe future growth and development through mapping, text and analysis for the planning area as defined by this Special Study.
 - 1. Discuss areas with existing development or plotted subdivisions.
 - 2. Discuss land use designations including residential, commercial and industrial areas.
 - 3. Discuss future growth areas, population and EDU projections for these areas.
 - 4. Briefly discuss zoning and subdivision regulations as they pertain to planned development.
 - 5. Discuss the sewage planning required to provide adequate wastewater conveyance for planned development.

V. Alternatives to Provide New or Improved Wastewater Disposal Facilities

- A. Identify the alternative to provide for improved sewage facilities
 - 1. Identification of regional wastewater treatment concepts as an alternative shall make mention that wastewater is conveyed to the Valley Forge Sewer Authority's Wastewater Treatment Plant.
 - 2. The potential for extension of existing municipal sewage facilities to areas in need. Municipal collection and conveyance facilities currently exist for the GVCC.
 - 3. A discussion addressing the potential for continued use of existing on-site or on-lot systems is not applicable to this Special Study.
 - 4. Analysis of a new community sewage system is not applicable to this Special Study.
 - 5. Analysis of alternatives as they relate to repair, replacement, and upgrade of existing conveyance system components will be discussed. Specific attention shall be given to the Wilburdale Pump Station and Force Main as well as the gravity sewer downstream from the point at which the Wilburdale forcemain discharges. The Flat Road Pump Station and force main shall also be evaluated.
 - 6. Discussion as it relates to the use of alternate methods of collection/conveyance to serve needs areas is not applicable to this Special Study.

- B. The use of individual sewage disposal systems is not applicable to this Special Study.
- C. Assessment of alternatives based on the use of small flow sewage treatment facilities, land treatment alternatives or package treatment facilities to serve individual homes or clusters of homes is not applicable to this Special Study.
- D. Analysis based on the use of community land disposal is not applicable to this Special Study.
- E. Addressing the use of retaining tank alternatives is not applicable to this Special Study.
- F. A discussion of the need for and implementation of a sewage management program will not be addressed as part of this Special Study and is not considered applicable to this Special Study.
- G. Non-structural comprehensive planning alternatives are not applicable to this Special Study.
- H. Provide a no-action alternative which includes impacts on:
 - 1. Water Quality and Public Health.
 - 2. Growth Potential.
 - 3. Community and economic conditions.
 - 4. Recreational opportunities.
 - 5. Drinking water sources.
 - 6. Other environmental concerns.

VI. The Evaluation of Alternatives

- A. Evaluate the alternatives, identified in Section V, for consistency with respect to the following:
 - 1. Plans developed under the Clean Streams Law.
 - 2. Plans developed under the Municipal Wasteload Management Plan (Chapter 94).

3. Plans developed under Title II of the Clean Water Act.
 4. Comprehensive plans developed under the Pennsylvania Municipalities Planning Code.
 5. Anti-degradation requirements as contained in PA Code, Title 25, Chapters 93, 95 and 102 and the Clean Water Act.
 6. State water plans developed under the Water Resources Planning Act.
 7. Pennsylvania Prime Agricultural Land Policy.
 8. The County Stormwater Management Plan.
 9. Wetlands Protection.
 10. Protection of rare, endangered or threatened plant and animal species as identified by the PNDI.
 11. Historical and Archeological Resource Protection (PHMC).
- B. Provide for the resolution of any inconsistencies with items 1 through 11 above, if necessary.
 - C. Evaluate the alternatives with respect to applicable water quality standards and effluent limitations.
 - D. Provide cost opinions for construction, financing and engineering fees for the alternatives identified in Section V.
 - E. Provide an analysis of funding methods available to finance the proposed alternatives including financial contributions from private entities.
 - F. Analyze the need for immediate or phased implementation.
 - G. Analyze the ability of the Township to implement the alternative.

VII. Institutional Evaluation

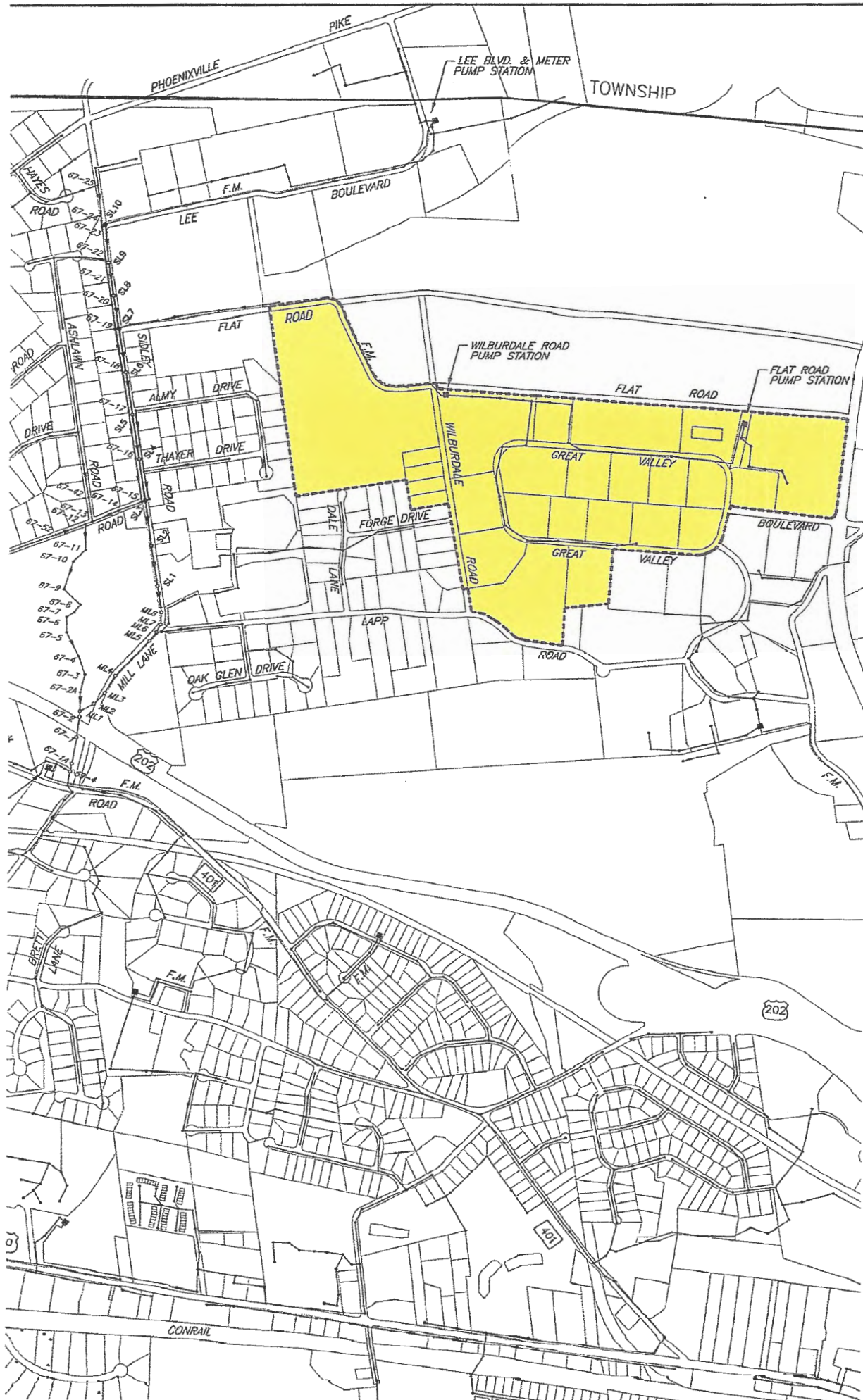
- A. Provide a brief discussion of the Township, their past actions and present performance including:
 1. Financial and debt status
 2. Available staff and administrative resources

3. Provide an analysis of the Township's legal authority to implement wastewater planning recommendations, implement system-wide operation and maintenance activities, set user fees, take purchasing actions, take actions against ordinance violators, negotiate agreements with other parties and raise capital for construction, operation and maintenance of facilities.
- B. Describe the various institutional alternatives necessary to implement the technical alternatives, including:
1. There is no need for a new Authority. No analysis will be completed for this.
 2. Function of the Township.
 2. Cost of administration, implementability, and capability of the Township to provide for future needs.
- C. Describe necessary administrative and legal activities, if any, to be completed and adopted to ensure the implementation of the alternatives, including:
1. Legal authorities of incorporation.
 2. Required ordinances, standards, regulations and inter-municipal agreements.
 3. Provisions of rights-of-way, easements, and land transfers.
 4. Other sewage facilities plan adoptions.
 5. Legal documents, if any.
 6. Dates or timeframes of 1-5 above on the implementation schedule.

VIII. Selected Wastewater Treatment and Institutional Alternative

- A. Identify the alternative that is the most feasible from a technical, financial, and institutional standpoint. Justify the choice based on:
1. Existing wastewater disposal needs.
 2. Future wastewater disposal needs.
 3. Operations and maintenance considerations.

4. Cost effectiveness.
 5. Availability management and administrative systems.
 6. Available finance methods.
 7. Environmental soundness.
- B. Describe the capital financing plan chosen to implement the selected alternative.



Municipality East Whiteland Township County Chester Proposed Planning Area Great Valley Corporate Campus (GVCC) Date of Report January-14
 (see attached plan sheet)

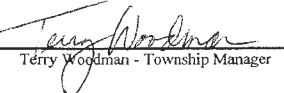
Date completed Plan will be submitted to DEP November-14 Estimated Cost of Plan \$33,964

Task Activity	Project Manager/Engineer		CADD Mapping		Clerical/Admin		Q/A Review														Expenses		Subtotal \$
	Hr/Rate	\$145.00	Hr/Rate	\$80.00	Hr/Rate	\$56.00	Hr/Rate	\$121.00	Hr/Rate	\$0.00	Hr/Rate	\$0.00	Hr/Rate	\$0.00	Hr/Rate	\$0.00	Hr/Rate	\$0.00	Hr/Rate	\$0.00		\$	
Plan Section and/or Task	Hrs.	Cost (\$)	Hrs.	Cost (\$)	Hrs.	Cost (\$)	Hrs.	Cost (\$)	Hrs.	Cost (\$)	Hrs.	Cost (\$)	Hrs.	Cost (\$)	Hrs.	Cost (\$)	Hrs.	Cost (\$)	Hrs.	Cost (\$)			
Plan of Study,TAR	10	\$1,450	0	\$0	2	\$112	4	\$484	0	\$0		\$0		\$0		\$0		\$0		\$0		\$14	\$2,060
Section I (Prev. Planning)	6	\$870	0	\$0	1	\$56	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0	\$926
Section II (Phys. Demographic Analysis)	6	\$870	0	\$0	1	\$56	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0	\$926
Plan Section III (Existing Facilities)	8	\$1,160	8	\$640	4	\$224	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$50	\$2,074
Plan Section IV (Future Growth)	24	\$3,480	16	\$1,280	4	\$224	4	\$484	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0	\$5,468
Plan Section V (Conveyance Alternatives)	24	\$3,480	8	\$640	8	\$448	4	\$484	0	\$0		\$0		\$0		\$0		\$0		\$0		\$50	\$5,102
Plan Section VI (Alternative Evaluation)	24	\$3,480	8	\$640	4	\$224	4	\$484	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0	\$4,828
Plan Section VII (Institutional Evaluation)	8	\$1,160	0	\$0	2	\$112	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0	\$1,272
Plan Section VIII (Selection of Alternative)	8	\$1,160	0	\$0	2	\$112	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0	\$1,272
Executive Summary	4	\$580	0	\$0	1	\$56	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0	\$636
Submit Document to Township for Review	2	\$290	0	\$0	2	\$112	8	\$968	0	\$0		\$0		\$0		\$0		\$0		\$0		\$100	\$1,470
Incorporate Township Comments; Respond	6	\$870	0	\$0	0	\$0	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$10	\$880
Submit Document to County for Review	2	\$290	0	\$0	2	\$112	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$100	\$502
Incorporate County Comments; Respond	4	\$580	0	\$0	2	\$112	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$10	\$702
Advertise for Public Comment	2	\$290	0	\$0	0	\$0	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$500	\$790
Submit Document for Public Comment	2	\$290	0	\$0	2	\$112	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$100	\$502
Incorporate Public Comments; Respond	4	\$580	0	\$0	2	\$112	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$20	\$712
Draft Resolutions of Adoption	2	\$290	0	\$0	1	\$56	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$20	\$366
Submit Document to PA DEP for Review	2	\$290	0	\$0	4	\$224	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$300	\$814
Revise Per DEP Comments; Respond	8	\$1,160	0	\$0	2	\$112	0	\$0	0	\$0		\$0		\$0		\$0		\$0		\$0		\$10	\$1,282
Submit Final to DEP.	0	\$0	0	\$0	2	\$112	8	\$968	0	\$0		\$0		\$0	32	\$0		\$0		\$0		\$300	\$1,380
Totals	156	\$22,620	40	\$3,200	48	\$2,688	32	\$3,872	0	\$0	0	\$0	0	\$0	32	\$0	0	\$0	0	\$0		\$1,584	\$33,964

William L. Bohner Jr., P.E.
 Name of Person Completing Report


 Signature

2/25/14
 Date


 Terry Woodman - Township Manager