

APPENDIX D

**OLDS ORDINANCE
(UPPER MAKEFIELD TOWNSHIP CODE CHAPTER 18)**

ORDINANCE NO. 295

AN ORDINANCE OF UPPER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA, AMENDING ITS CODE OF ORDINANCES, CHAPTER 18, SEWERS AND SEWAGE DISPOSAL, PART 1, ONLOT DISPOSAL SYSTEMS, BY ESTABLISHING NEW REQUIREMENTS AND PROCEDURES FOR THE PERMITTING OF ONLOT DISPOSAL SYSTEMS, INCLUDING INDIVIDUAL ONLOT DISPOSAL SYSTEMS AND COMMUNITY ONLOT DISPOSAL SYSTEMS, AND ADDITIONAL REQUIREMENTS FOR THE CONSTRUCTION, MAINTENANCE AND REPAIR OF ONLOT DISPOSAL SYSTEMS WITHIN UPPER MAKEFIELD TOWNSHIP.

P R E A M B L E

The Board of Supervisors of Upper Makefield Township does hereby enact and ordain the following:

SECTION I.

Chapter 18, Sewers and Sewage Disposal, Part 1, Onlot Disposal Systems, is hereby revised and amended to read as follows:

CHAPTER 18

SEWERS AND SEWAGE DISPOSAL

PART 1

ONLOT DISPOSAL SYSTEMS

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PART 1
ONLOT DISPOSAL SYSTEMS

A. GENERAL PROVISIONS.

§101. TITLE

This Part shall be known as the "Upper Makefield Township Onlot Disposal System (OLDS) Management Ordinance."

(Ord. 143 8/17/1988, §101)

§102. STATEMENT OF FINDINGS.

The Board of Supervisors of Upper Makefield Township finds that:

1. Inadequate management of individual and community onlot sewage disposal systems increases surface water pollution, ground water contamination, the potential of public health problems and general nuisance conditions.
2. A comprehensive and reasonable program of onlot disposal system (OLDS) management regulations is fundamental to the public health, safety and welfare and to the protection of present and future residents and the environment of Upper Makefield Township.

(Ord. 143, 8/17/1988, §102)

§103. PURPOSE.

The purpose of this Part is to promote the public health, safety and welfare by minimizing the problems described in §102.1 of the Part b:

1. Review of OLDS plans for conformance with the Township's Official Sewage Facilities Plan (Act 537 Plan) and regulations and ordinances enacted to implement the Act 537 Plan.
2. Enactment and implementation of this and appurtenant ordinances concerning holding tanks and water conservation and sewage flow reduction.
3. Development and implementation of a public education program to supplement the public assurance program.
4. Giving force and effect to the policies adopted in the Official Act 537 plan of Upper Makefield Township.

(Ord. 143, 8/17/1988, §103)

§104. ADOPTION; AUTHORITY; APPLICABILITY.

The Board of Supervisors of Upper Makefield Township, Bucks County, Pennsylvania, pursuant to the Clean Streams Law of Pennsylvania (Act 394 of June 22, 1937, P.L. 1987, as amended), the Pennsylvania Sewage Facilities Act (Act 537, of January 24, 1966, P.L. 1535, as amended, 35 P.S. §750.1 *et seq.*), and the Second Class Township Code (53 P.S. §§65727, 65729 & 66951), hereby enacts and ordains this Part as the "Upper Makefield Township Onlot Disposal System (OLDS) Management Ordinance." This Part shall apply to all onlot sewage systems as defined in §112 of this Part. No requirement of this Part shall preempt the functions, duties, and jurisdiction of the Bucks County Department of Health (BCDH), the Clean Streams Law, or BCDH rules and regulations of OLDS.

(Ord. 143, 8/17/1988, §104)

§105 RIGHT-OF-ENTRY.

After giving adequate notice and upon presentation of proper credentials, the Code Enforcement Officer of Upper Makefield Township may enter at reasonable times upon any property within the Township to investigate or ascertain the condition of and OLDS on the Property.

(Ord. 143, 8/17/1988, §105; as amended by Ord. 186, 12/6/1995)

§106. COMPATIBILITY WITH OTHER PERMITS AND ORDINANCES.

Operation and maintenance agreements executed pursuant to this Part do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act or ordinance.

(Ord. 143, 8/17/1988, §108)

§107. MUNICIPAL LIABILITY.

Nothing in this Chapter shall relieve the owner of a property on which an OLDS is located of responsibility to those adversely affected by the operation and maintenance of the OLDS. Further, the Township assumes no responsibility to either the developer, the homeowner, the adjoining property owner, or any other person or entity affected by operation of an OLDS on property not owned by the Township.

(Ord. 143, 8/17/1988, §109)

B. DEFINITIONS.

§111. GENERAL.

Words used in the singular include the plural and words used in plural include the singular. The word "building" shall be construed as if followed by the words "or parts thereof". The word "may" is permissive; the words "shall" and "will" are mandatory.

(Ord. 143, 8/17/1988, §201)

§112. DEFINITIONS.

The following words and terms, when used in this Part, shall have the following meanings, unless the context clearly indicates otherwise:

ABSORPTION AREA – A component of an individual or community sewage system where liquid from a treatment tank seeps into the soil; it consists of an aggregate-filled area containing piping for the distribution of liquid and the soil or sand/soil combination located beneath the aggregate. This area can also consist of a drip irrigation or spray irrigation field.

ALTERNATE SEWAGE SYSTEM – a system employing the use of demonstrated technology as outlined in the most current alternate systems guidance by the PADEP.

AEROBIC UNIT – a mechanically aerated treatment tank that provides aerobic biochemical stabilization of sewage prior to its discharge to an absorption area.

APPLICANT – a landowner, as herein defined, or agent of the landowner, who has filed an application for an operation and maintenance agreement.

BCDH – acronym for the Bucks County Department of Health, the local agency in the County of Bucks responsible for enforcing the rules and regulations of the PADEP regarding sewage facilities, Pa. Code Title 25 Chapters 71, 72, and 73 promulgated thereunder.

BUILDING – any structure, either temporary or permanent, having walls and a roof, designed or used for the shelter of any person, animal or property, and occupying more than one hundred (100) square feet of area.

COMBINED INDIVIDUAL AND COMMUNITY SYSTEMS – within a given group of buildings and/or lots, the use, where feasible, of onlot disposal systems (OLDS), and for lots not suitable for OLDS, the incorporation of the sewage from two (2) or more of the unsuitable lots into a community sewage system in order to meet the sewage treatment/disposal needs of the area.

COMMUNITY SEWAGE SYSTEM – any system, whether publicly or privately owned, for the collection of sewage from two (2) or more lots and for the treatment or disposal of the sewage on one (1) or more of the lots, or at any other site.

COMMUNITY SUBSURFACE SYSTEM – a community sewage system that employs any of the several types of aggregate-filled sewage effluent absorption areas installed below original soil grade level, or, in the case of an elevated sand

mound, installed above original grade with ultimate percolation into the original soil. This can also be a drip irrigation field.

CONSOLIDATED COMMUNITY SYSTEMS – the combination of two (2) or more community systems.

CONSTRUCTION ESCROW – financial security posted by the property owner or agent of the property owner and held by the Township or a third party (under an agreement with the Township) for the purpose of guaranteeing that the construction of a sewage system is completed and properly done.

CONVENTIONAL SUBSURFACE ABSORPTION SYSTEMS – any of several types of aggregate-filled sewage effluent absorption areas installed below original soil grade level, or, in the case of an elevated sand mound, installed above original grade with ultimate percolation into the original soil.

DEVELOPER – any landowner, agent of such landowner or tenant with the permission of such landowner who makes or causes to be made a subdivision or land development.

ELEVATED SAND MOUND – a type of above-ground absorption area consisting of a level layer of sand between the surface of the natural soil and an aggregate distribution area to insure adequate renovation of sewage effluent

EXPERIMENTAL SEWAGE SYSTEM – any method of sewage disposal not described in the PADEP Title 25 rules and regulations, but authorized by the PaDEP for the purpose of testing and observation, as well as the most current alternate systems guidance by the PADEP.

FINANCIAL SECURITY – funds guaranteed or held in escrow accounts in Federal or common chartered lending institutions or irrevocable letters of credit issued by such institution.

HOLDING TANK – a watertight receptacle, whether permanent or temporary, which receives sewage via a water-carrying system and retains sewage and is designed and constructed to facilitate ultimate disposal of the sewage at another facility.

HOMEOWNERS' ASSOCIATION – a nonprofit or for-profit corporation controlled by a board of directors which administers by-laws and rules and regulations governing all and/or common area in a residential development.

INDIVIDUAL RESIDENTIAL SPRAY IRRIGATION SYSTEM (IRSIS) – an individual sewage system which serves a single dwelling and which treats and disposes of sewage using a system of piping, treatment tanks and soil renovation through spray irrigation.

INDIVIDUAL SEWAGE SYSTEM – a system of piping, tanks, or other facilities serving a single lot and collecting and disposing of sewage in whole or in part into the soil or into any waters of the Commonwealth or by means of conveyance to another site for final disposal.

INDUSTRIAL WASTE – any liquid, gaseous, radioactive, solid or other substance resulting from manufacturing, industry or other operations which is not sewage. The term shall include all such substances whether or not generally characterized as waste. These shall not be discharged to any onlot disposal system.

LAGOON (SEWAGE LAGOON) – any of the several different types of sewage stabilization ponds or oxidation ponds employed to treat sewage by aerobic

and/or anaerobic decomposition. Lagoons are generally followed by land application or stream discharge of effluent.

LAND DEVELOPMENT – the improvement of one (1) lot or two (2) or more contiguous lots, tracts or parcels of land for any purpose involving:

- (a) a group of two (2) or more residential or nonresidential buildings whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupant or tenure, including any additions to existing nonresidential buildings or conversions of residential to nonresidential buildings with additions, or (b) the division or allocation of land or space, whether initially or cumulatively, between or among two (2) or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features or
- (b) a subdivision of land

LARGE VOLUME ONLOT SEWAGE SYSTEM – an individual or community onlot sewage system with design capacity to discharge subsurface sewage flows that are in excess of ten thousand (10,000) gallons per day. These systems require a Water Quality Management Permit issued by PADEP.

LOT – a part of a subdivision or a parcel of land used as a building site or intended to be used for building purposes, whether immediate or future, which would not be further subdivided.

MANAGEMENT AGENCY – an entity, either private or public, formed for the purpose of managing water and/or wastewater facilities. Types of management agencies include municipal authorities, municipal governing bodies, private corporations, private engineering or technical service firms, etc.

MUNICIPALITY – a city, incorporated town, township or borough.

ONSEWERED APPROACH – limiting the expansion of centralized wastewater facilities by encouraging onlot disposal systems (OLDS) where feasible and economical.

OFFICIAL ACT 537 PLAN – a comprehensive plan for the provision of adequate sewage systems adopted by a municipality or municipalities possessing authority over the provision of such systems and submitted to and approved by the Department as provided by the Pennsylvania Sewage Facilities Act 537 and Chapter 71, Rules and Regulations, promulgated thereunder.

ONLOT DISPOSAL SYSTEM (OLDS) – a system of piping, tanks and/or other components serving a residence or establishment, usually on a single lot, by collecting, treating and disposing of sewage in whole or in part into the soil or into waters of this Commonwealth.

OLDS MANAGEMENT PROGRAM – a method of managing onlot sewage disposal systems (OLDS) which has as its general goal the installation of sound OLDS and the assurance that new and existing OLDS are properly operated and maintained.

OPERATION AND MAINTENANCE AGREEMENT (O&M)– An agreement regulating the operation and maintenance of an OLDS.

PADEP – acronym for the Pennsylvania Department of Environmental Protection which is a cabinet level agency with broad authorities granted by legislation to

protect Pennsylvania's many environmental resources. The PADEP is responsible for overseeing the plans, designs, and construction of wastewater treatment facilities throughout the State.

PERFORMANCE GUARANTEE – Financial Security accompanied by a written promise to pay the Township a sum of money to secure the performance of an installed sewage system. The purpose of such a performance bond is to guarantee proper function, operation and maintenance of such a system for a specified period of time.

PERSON – any individual, partnership, company, association, corporation or other group or entity.

PRESSURIZED DISTRIBUTION – a network of piping within an absorption area such as an elevated sand mound, through which treated sewage effluent is pumped to assure equal distribution throughout the absorption area.

PROOF OF PUMP-OUT – method by which a property owner verifies that his/her onlot sewage system has been cleaned to remove septage.

PROPERTY OWNER – the legal, beneficial, equitable owner or owners of land, including the holder of an option or contract to purchase (whether or not such option or contract is subject to any conditions), a lessee (if he is authorized under the lease to exercise the rights of the landowner), or any other person having a proprietary interest in land.

PROPERTY OWNERS ASSOCIATION – a for-profit or nonprofit corporation controlled by a board of directors which administers bylaws and rules and regulations governing all lots and/or common area (open space) in a nonresidential development such as an industrial park.

PUBLIC ASSURANCE PROGRAM – that part of an OLDS management program which, through an onlot system inspection process, seeks to ensure that individual and community sewage systems are operated and maintained properly.

RURAL RESIDENCE – a structure occupied or intended to be occupied by not more than two (2) families on a tract of land of ten (10) acres or more.

SAND FILTRATION WITH STREAM DISCHARGE – a type of domestic sewage treatment and disposal system, used where soil absorption of effluent is not possible, which utilizes a septic or aerobic tank followed by a sand filter and disinfection before discharge of treated effluent to a drainageway.

SECOND CLASS TOWNSHIP CODE – Pennsylvania Statute 53 (53 P.S. §65101 *et seq.*) outlining laws relating to townships of the second class. The act as amended became effective July 1, 1947.

SEEPAGE BED – a type of subsurface absorption area that is more adaptable to limited space than are standard trench systems.

SEPTAGE – the residual scum and sludge pumped from septic systems.

SEPTIC TANK – a sewage treatment tank that provides for anaerobic decomposition of sewage prior to discharging effluent to an absorption area.

SEWAGE – a substance that contains the waste products or excrement or other discharge from the bodies of human beings or animals; a substance harmful to the public health, to animal or aquatic life, or to the use of water for domestic

water supply or for recreation; or a substance which constitutes pollution under The Clean Streams Law (35 P.S. §§691.1-691.1001).

SEWAGE ENFORCEMENT OFFICER (SEO) – the Bucks County Department of Health official who issues and reviews permit applications and conducts such investigations and inspections as are necessary to implement Chapter 71 ("Administration of Sewage Facilities Planning Program), and Chapter 73, (Standards for Sewage Disposal Facilities).

STANDARD TRENCH SYSTEM – a type of absorption area consisting of two (2) or more trenches which are twelve (12) to thirty-six (36) inches deep, one (1) to six (6) feet wide, a maximum of one hundred (100) feet long and adequately spaced apart to allow for the uniform spreading of effluent over the entire absorption area.

STREAM DISCHARGE SYSTEM – any of the several types of sewage systems which ultimately dispose of treated effluent into the surface waters of the Commonwealth. Such systems require a permit from the PADEP.

SUBDIVISION – the division or redivision of a lot, tract or other parcel of land into two (2) or more lots, tracts, parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, transfer of ownership or building or lot development; provided, however, that the subdivision by lease of land for agricultural purposes into parcels of more than ten (10) acres, not involving any new street or easement of access or residential dwellings, shall be exempted.

TOWNSHIP – Upper Makefield Township, Bucks County, Pennsylvania.

WATERCOURSE – a permanent or intermittent stream, river, brook, creek, run, channel, swale, pond, lake or other body of water, whether natural or manmade, for gathering or carrying surface water.

WATERS OF THIS COMMONWEALTH – rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, ponds, springs and all other bodies or channels of conveyance of surface and underground water or any of their parts, whether natural or artificial within or on the boundaries of this Commonwealth.

(Ord. 143, 8/17/01988, §202)

C. PROGRAM REQUIREMENTS AND POLICIES.

§121. GENERAL.

The following programs are hereby enacted to effect improved onlot disposal system (OLDS) installation, operation and maintenance. These programs apply to both existing and new OLDS in conjunction with appurtenant ordinances as outlined in §103 of this Part.

(Ord. 143, 8/17/1988, §301)

§122. OLDS PLANNING POLICIES.

1. The Township Planning Commission shall review all subdivision/land development plans containing OLDS system design and layout details for conformance with the Official Sewage Facilities (Act 537) Plan, this Part, and all applicable ordinances. In addition to this general planning function, all Township officials (e.g., Supervisors, Planning Commission, Zoning Officer, building inspector, etc.) shall include the provisions of the OLDS program in their respective duties and functions.
2. Onlot sewage disposal systems shall be encouraged wherever feasible and economical throughout Upper Makefield Township. The following OLDS planning policies foster the non-sewered approach and the conservation of ground water resources:
 - a) Limit expansion of existing centralized sewage facilities by encouraging onlot systems.
 - b) Maintain OLDS ownership with the individual property owner, homeowners' association or developer.
 - c) Encourage the use of innovative sewage facilities that reduce water consumption and sewage generation.
 - d) Recycle sewage by relying upon individual OLDS and community OLDS for groundwater recharge via either subsurface or surface disposal of treated sewage effluent.
 - e) Promote subsurface disposal of effluent wherever possible.
 - f) Restrict community subsurface systems to pressurized distribution systems.
 - g) Encourage water conservation and sewage flow reduction by the use of water saving devices, non-water toilets, sewage effluent recycling and reuse, and other state-of-the-art water conservation methods.
 - h) Require, via a separate water conservation ordinance, that all newly constructed residential, commercial, industrial, agricultural, recreational, governmental, or public buildings or structures of any kind have installed water saving fixtures. Such fixtures will reduce the quantity of water required to flush toilets and will reduce the flow rates of showers and faucets.

(Ord. 143, 8/17/1988, §302)

§123. MANAGEMENT OF ONLOT DISPOSAL SYSTEMS (OLDS).

The organizational format for OLDS management in Upper Makefield Township is outlined in Table 1 of this Part.

1. System Ownership and Maintenance. All individual OLDS shall be owned and maintained by the property owner. All community OLDS shall be: a) offered for dedication to the Township; or b) agency designated by the Township or owned and maintained by a homeowners' association. The operator of all community sewage facilities must be licensed by PADEP.

2. Financial Requirement. Financial requirements for all new systems shall be as follows:
 - a) Individual conventional subsurface systems. None required.
 - b) Individual Residential Spray Irrigation Systems (IRSIS), individual small flow stream discharge systems, and individual alternate and experimental systems. Three thousand dollar (\$3,000.00) performance guarantee for the life of the system to be deposited with the Township by system owner. The escrow shall be replenished as required in a maintenance agreement governing the escrow executed prior to the installation of the OLDS.
 - c) Community Systems (All Types) Construction Escrow. One hundred ten (110%) percent of the estimated construction cost as approved by the Township Engineer. This escrow is to be held until construction is completed to the satisfaction of the Township Engineer.
 - d) Community Systems (All Types) Performance Guarantee. (i.e., Operation and Maintenance (O&M) Fund) – A cash escrow in an amount equal to two times the estimated annual O&M to be retained by the Township for the life of the system. The escrow shall be replenished as required in an O & M Agreement executed prior to the start of construction, .
3. Township's Right of Entry. Township, for the purpose of examining the system, has right to enter at reasonable times upon any premises in the Township upon which there is suspected to be any nuisance or public health hazard, or threat to the public, health, safety and welfare.). (53 P.S. §66957)
4. Required Pumping and Inspection of OLDS.
 - a) All onlot disposal systems utilizing a septic tank as a primary treatment unit shall be pumped on the following schedule at a minimum:
 - 1) Individual Subsurface Systems. Once every three (3) years. Additionally, the system shall be pumped out more frequently if required per the pumper/inspector recommendations.
 - 2) IRSIS. Annually, or as otherwise specified in the Township O&M Agreement.
 - 3) Community Systems (all types). Annually, or as otherwise specified in the Township O&M Agreement.
 - 4) Alternate and Experimental Systems. Annually, or as otherwise specified in the Township O&M Agreement.
 - b) All aerobic unit systems shall be inspected annually for proper operation and certified to be in good working order.
5. OLDS Pumping and Inspection Procedures.
 - a) It is the responsibility of the property owner to have a Township registered pumper/inspector perform the necessary work. A list of registered pumpers/inspectors can be obtained from the Township.

- b) A Pumper/Inspector Report (See Appendix B) must be completed during every site visit by an Upper Makefield Township licensed pumper/inspector and given to the property owner as proof of pump-out. In the event that cracks, leaks, inoperable baffles, or a system malfunction are found by the pumper or inspector, both the Pumper/Inspector and property owner must submit the Pumper/Inspector Report to Upper Makefield Township within fifteen (15) days of the work being completed. The Township will submit a copy of the Report to the BCDH for their records when a system malfunction is documented. The damage or malfunction must be repaired within sixty (60) days and the property owner must submit a certification by the person performing the repairs that the repairs have been completed. If the sixty (60) day time limit met, the property owner may request relief from the time requirement. The request for may relief may, at the option of the Township, be granted if the property has shown good cause for the delay and if the property owner has demonstrated that the repairs will be made at the earliest possible opportunity.
- c) The following procedure shall be utilized in pumping and inspecting an onlot disposal system utilizing a septic tank as a primary unit:
- 1) Locate the septic tank and the absorption areas (tile field trenches, seepage pits, elevated sand mound, etc.)
 - 2) Locate the septic tank cleanout manhole and excavate around the cover to prevent soil from falling into the tank when the cover is removed. The owner shall be responsible to have the clean out manhole excavated whether by the sewage hauler or otherwise.
 - 3) Remove clean out manhole cover. Break up scum in the tank and pump out a portion of the material in the tank. The inspection port over the baffle shall not be pumped out as this may damage the baffle and will not permit the tank contents to be thoroughly mixed for pumping.
 - 4) Re-inject the pumped liquid back into the tank to further break up the scum and mix the sludge at the bottom of the tank with the liquid. Pump out the mixed material.
 - 5) Repeat subsection (4) until the tank is pumped out, i.e./sludge and scum removed.
 - 6) Inspect the empty tank for cracks, leaks, deterioration and missing baffles. The tank shall not be entered for the purpose of inspection. A mirror and light may be helpful to see inside the tank. Note any problems with the tank. Acid or chemical cleaner shall not be used in the tank.
 - 7) Replace the manhole cover carefully and securely.
 - 8) If the clean-out manhole is buried deeper than a foot, risers shall be installed over the clean out manhole and inspection port to facilitate future cleaning and inspection. The riser clean out manhole should be twenty-four (24) inches in diameter.

- 9) Backfill over the cover or around the riser.
 - 10) Make a visual inspection of the disposal area for seepage, breakouts, etc., and note any problems.
 - 11) Inform the property owner of any problems encountered with any of the components of the system and, if possible, suggest corrective measures.
 - 12) Clean up any spillage. Dispose of the septage at any PADEP approved disposal site.
- d) Aerobic systems may not need to be pumped, but shall be inspected by a qualified person to determine that they are in good working order.

6. Registration of Sewage Haulers and Inspectors.

- a) Annual Registration Required. No sewage hauler, including those persons delivering, picking up and cleaning portable sanitary facilities, or inspector of aerobic systems shall engage in business within the Township or offer such service within the Township without first registering with the Township, on forms hereinafter provided from the Code Enforcement Office.
- b) Application for Registration. Applications for registration issued hereunder shall be made upon forms prepared and made available by the Township Code Enforcement Office which shall state at a minimum:
 - 1) The personal name, home address, and business name and address, if any, of the applicant, and type of business organization under which the business is operated (i.e. sole proprietor, partnership, corporation).
 - 2) For sewage haulers, the location, description, and listing of the sewage hauling trucks owned, leased or operated by the applicant.
 - 3) Experience and training of the operators of the vehicles proposed for licensing or the inspectors.
 - 4) For sewage haulers, the BCDH license issued pursuant to §4 of the BCDH Rules and Regulations Governing Individual Sewage Disposal for the sewage transportation vehicle or vehicles being used.
 - 5) Name, address, policy number, expiration date and policy limits of applicant's liability insurance policies.
 - 6) Such other information as the Code Enforcement Office shall find reasonably necessary to effectuate the purpose of this Part and to fairly determine the applicant's compliance with the terms of this part.
 - 7) The disposal site for septage is a PADEP or NJDEP licensed facility.

- c) Minimum Standards. Each sewage hauler/inspector registering with the Township, except persons who are registering to deliver, pick-up and/or clean portable sanitary facilities shall submit proof that:
 - 1) The sewage hauler/inspector has pumping equipment which is capable of reversing flow or re-injecting pumped material back into the tank to thoroughly mix the sludge and scum into pumped liquid.
 - 2) Each vehicle carries a mirror or reflecting device and an appropriate light source for inspecting tanks.
- d) Insurance Policies. sewage hauler/inspector shall deliver to the Code Enforcement Office certification of a general public liability policy in a minimum amount of One Million Dollars (\$1,000,000.00) which policy shall be effective for a period of one (1) year from the date of the application. The Township shall be named as an additional insured on the insurance certificate.
- e) A sewage hauler or inspector who registers with the Township shall agree in writing to abide by the regulations and procedures of this Part.
- f) Revocation of Status of Registered Sewage Hauler/Inspector . The Township may revoke the registration made hereunder if the registration was made fraudulently, or by making a false statement or statements of a material fact, which, if disclosed at the time of the registration would have disqualified the registrant. The Township may also revoke a registration if the sewage hauler/inspector violates the regulations and procedures of PADEP, BCDH or of this Part.
- g) Registration under this Part shall not confer upon the sewage hauler/inspector any status as an employee or independent contractor of the Township, and payment for services rendered to the sewage hauler/inspector shall be by the owner, operator or custodian of the system being pumped.

(Ord. 143, 8/17/1988, §303)

TABLE 1

ORGANIZATIONAL FORMAT FOR UPPER MAKEFIELD TOWNSHIP'S OLDS MANAGEMENT PROGRAM					
Type	Ownership	Operation & Maintenance (O&M) Responsibility	Construction Escrow Amount ¹	Performance Guarantee Amount ^{1,2}	Inspection Frequency
<u>Individual OLDS</u>					
Conventional Subsurface Disposal	Property Owner	Property Owner		None	Once every three (3) years (Proof of pump-out required) ^{3,4,5}
IRIS	Property Owner	Property Owner Per Township O&M Agreement	None for all	\$3,000.00 for life of system	Annual or per Township O&M Agreement
Stream Discharge	Property Owner	Property Owner Per Township O&M Agreement		\$3,000.00 for life of system	Annual or per Township O&M Agreement
<u>Community OLDS</u>					
Subsurface Disposal					
IRIS	Property Owner or Homeowners' Association	Property Owner, Homeowners' Association, PADEP certified Management Agency, and/or as per PADEP permit requirements	110% of estimated construction costs for all systems	An amount equal to two times the annual O&M retained by the Township for the life of the system	Annual or per Township O&M Agreement
Stream Discharge					
<u>Alternate and Experimental Systems</u>					
Individual OLDS	Property Owner	Property Owner	None	\$3,000.00 for life of system	Annual or per Township O&M Agreement
Community OLDS	Property Owner or Homeowners' Association	Property Owner, Homeowners' Association, PADEP certified Management Agency, and/or as per PADEP permit requirements	110% of estimated construction costs	An amount equal to two times the annual O&M retained by the Township for the life of the system	Annual or per Township O&M Agreement

Notes:

- 1 - All unused funds shall be returned to the property owner or Homeowners' Association.
- 2 - Time period starts for community systems after all units are completed and sold and occupancy permits have been issued by the Township.
- 3 - Property owner may request technical assistance from the Township Code Enforcement Officer.
- 4 - Property owner or Homeowners' Association shall pay for all costs involved in on-site inspections and/or pumping.
- 5 - Property owner shall receive and maintain proof of pumpout and provide the Township a copy if a malfunction is documented or repairs are necessary.

D. OPERATION & MAINTENANCE AGREEMENT PROCEDURES AND REQUIREMENTS.

§131. GENERAL

In accordance with §104 of this Part, an onlot disposal system (OLDS) as defined in Table 1 of this Part requiring an Operation and Maintenance Agreement (O&M) shall not be installed nor shall any building be occupied until an OLDS O&M Agreement in a form deemed acceptable by the Township has been executed by the Township. The applicant for a building permit for any subdivision or land development, which will utilize such an OLDS shall submit to the Township an OLDS O&M Agreement prior to filing of a building permit application.

(Ord. 143, 8/17/1988, §401)

§132. APPLICATION PROCEDURE.

To meet the requirements of §131, an OLDS O&M Agreement shall be submitted to the Upper Makefield Township Code Enforcement Office on any business day.

1. The Code Enforcement Office shall forward one (1) copy of the O&M Agreement to the Township Engineer and Solicitor for review and comment. (Ord. 186)
2. The Code Enforcement Office may review the O&M Agreement with the Township Planning Commission, Township Engineer, Township Solicitor and other municipal officials in order to determine approval, conditional approval or disapproval of the Agreement. (Ord. 186)

(Ord. 143, 8/17/1988, §402; as amended by Ord. 186, 12/6/1995)

§133. O&M AGREEMENT ISSUANCE.

1. The Code Enforcement Office shall issue a Township OLDS O&M Agreement for IRSIS, individual small flow stream discharge, alternate or experimental OLDS after the Township has received a copy of the Bucks County Department of Health (BCDH) sewage disposal system permit, and in the case of a large volume onlot sewage system, a Water Quality Management Permit from PADEP. In the case of new systems that require sewage facilities planning approval, the property owner shall execute an O&M Agreement prior to sewage permit issuance by the BCDH. This section applies to new and replacement of existing OLDS. (Ord. 186)
2. No OLDS as defined in Table 1 of this Part requiring an O&M Agreement shall be installed nor shall any building be occupied until an OLDS O&M Agreement has been issued by the Township.

(Ord. 143, 8/17/1988, §403; as amended by Ord. 186, 12/6/1995)

§134. APPLICATION REQUIREMENTS.

New OLDS Installation. An application for an OLDS O&M Agreement for new construction shall include the following items:

1. Two (2) copies of the proposed O&M Agreement in a form acceptable to the Township. (See Appendix A for an example O&M Agreement).
2. Two (2) copies of the approved subdivision or land development plan, except for situations in which an O&M Agreement is required as part of sewage facilities planning, which event the proposed subdivision or land development plan shall be submitted with the application..
3. Two (2) copies of BCDH sewage disposal system permit including a copy of the application for the permit with all approved maps, plans, and narratives.

§135. CONSTRUCTION ESCROW / PERFORMANCE GUARANTEE.

1. Construction Escrow
 - a) As required by Table 1 of this Part and as outlined below, the property owner or agent of the owner shall file with the Upper Makefield Board of Supervisors a construction escrow financial security for each community OLDS. The construction standards and purpose and management of the escrow shall be governed by a Construction Agreement and a Financial Security Agreement between the Township and the Owner in a form acceptable to the Township. (Ord. 186)
 - b) Financial security shall be in the form of cash, an irrevocable letter of credit, a restricted escrow account, or other form deemed acceptable by the Township
 - c) The amount of the construction escrow shall be as follows:
 - 1) For conventional individual subsurface OLDS, there shall be no construction escrow required.
 - 2) For individual residential spray irrigation systems (IRSIS), individual small flow stream discharge systems and individual alternate or experimental OLDS, there shall be no construction escrow required.
 - 3) For all community OLDS, the construction escrow shall be one hundred ten (110) percent of the estimated construction cost. The cost of the facilities shall be established by submission to the Board of Supervisors a bona fide bid from the contractor or contractors chosen by the developer or proper owner to complete the facilities reviewed and approved by the Township Engineer. If the developer requires more than one (1) year from the date of posting of the financial security to complete the required facilities, the amount of financial security shall be increased by an

additional ten (10) percent for each one (1) year period after the first anniversary date of posting of financial security.

- 4) Construction escrow shall be released to property owner following completion of OLDS construction to the satisfaction of the BCDH and Township Engineer, and upon posting of the performance guarantee required by §135.2(3) of this Part.. Escrow funds shall be reduced by unpaid administrative, engineering, and legal expenses incurred during construction.

2. Performance Guarantee

- a) The Township requires a financial security performance guarantee to ensure continued operation and maintenance of the system. As outlined in Table 1 of this Part, the following are the requirements for performance guarantees for OLDS operation and maintenance:
 - 1) For conventional individual subsurface OLDS, there shall be no performance guarantee required.
 - 2) Individual Residential Spray Irrigation Systems (IRSIS), individual small flow stream discharge systems, and individual alternate and experimental systems shall required a Three Thousand Dollar (\$3,000.00) cash performance guarantee for the life of the system to be deposited with the Township by system owner. The escrow shall be replenished as required by the Operation and Maintenance Agreement..
 - 3) For all Community OLDS, the performance guarantee shall be a cash escrow in an amount equal to two times the estimated annual cost of operation and maintenance which shall be retained by the Township for the life of the system. The cash escrow shall be provided by the property owner, developer or contractor at the time of execution of the O&M Agreement, and must be verified as accurate by the Township Engineer. The escrow shall be replenished as required.

(Ord. 143, 8/17/1988, §410; as amended by Ord. 186, 12/6/1995)

E. ADMINISTRATION.

§141. CIVIL REMEDIES.

1. Any person or entity engaged in the construction of an OLDS as defined in §112 of this Part or involved in the installation, operation and/or maintenance of any or all components of an OLDS, shall comply with all regulations and requirements of the BCDH or PADEP permit and this Part. Any activity conducted in violation of this Part, or BCDH, or PADEP rules and regulations or permit requirements is hereby declared a violation of this Part.

2. In the event of a violation, and in addition to the penalties set forth in §142 of this Part, the Upper Makefield Township Board of Supervisors may file suit in law or in equity in any court of competent jurisdiction to restrain, prevent or abate violations of this Part.

(Ord. 143, 8/17/1988, §501)

§142. PENALTIES.

1. Any person or entity who shall violate any of the provisions of this Part, or who shall fail to comply with any written notice from Upper Makefield Township which describes a condition of noncompliance, shall be guilty of an offense and, upon conviction, thereof, shall be sentenced to a fine of not more than one thousand dollars (\$1,000.00) plus court costs, fees and expenses. A new and separate violation shall be deemed to be committed for each day after receipt of the aforesaid notice that such violation exists.
(Ord. 186)

2. The penalties and remedies of this part shall be cumulative.

(Ord. 143, 8/17/1988, §502; amended by Ord. 186, 12/6/1995)

§143. APPEAL TO BOARD OF SUPERVISORS OF UPPER MAKEFIELD TOWNSHIP.

Any persons aggrieved by any action of the Code Enforcement Office may appeal to the Board of Supervisors of Upper Makefield Township within twenty (20) days of that action.

(Ord. 143, 8/17/1988, §503; as amended by Ord. 186, 12/6/1995)

PART 2

HOLDING TANKS

A. INSTALLATION AND OPERATION.

§201. PURPOSE.

The purpose of this Part is to establish procedures for the use and maintenance of holding tanks when the Township, Bucks County Department of Health (BCDH) and the Pennsylvania Department of Environmental Protection (PADEP) determine that the use of a holding tank is necessary to abate a nuisance or public health hazard. This Part also applies to institutional, recreational or commercial establishments with a sewage flow of eight hundred gallons (800) per day or less. It is hereby declared that the regulations of this Part is necessary for the protection, benefit and preservation of the health, safety and welfare of the residents of Upper Makefield Township.

(Ord. 183, 8/2/1995, §I)

§202. DEFINITIONS.

Unless the context specifically and clearly indicates otherwise, the meaning of terms used in this Part shall be as follows:

RETAINING TANK – a watertight receptacle, whether permanent or temporary, which receives and retains sewage and is designed and constructed to facilitate ultimate disposal of the sewage at another facility. Holding tanks include but are not limited to the following:

CHEMICAL TOILET – a permanent or portable non-flushing toilet using chemical treatment in the retaining tank for odor control.

COMPOSTING TOILET – a device for holding and processing human and/or organic kitchen waste employing the process of biological degradation through the action of microorganisms to produce a stable, humus-like material.

HOLDING TANK – a watertight receptacle, whether permanent or temporary, which receives sewage via a water-carrying system and retains sewage and is designed and constructed to facilitate ultimate disposal of the sewage at another facility.

INCINERATING TOILET – a device capable of reducing waste materials to ashes.

PRIVY – a tank designed to receive sewage where water under pressure is not available.

RECYCLING TOILET – a device in which the flushing medium is restored to a condition stable for reuse and flushing.

Other terms as may be used in this Part shall be as defined in Part 1, §112.

(Ord. 183, 8/2/1995, §I)

§203. RIGHTS AND PRIVILEGES GRANTED.

The Township Supervisors and their duly authorized agents are authorized and empowered to undertake within the Township the control and methods of holding tanks, sewage disposal, and the collection and transportation thereof.

(Ord. 183, 8/2/1995, §I)

§204. RULES AND REGULATIONS.

The Board of Supervisors are hereby authorized and empowered to adopt, by resolution, such rules and regulations concerning sewage, which it may deem necessary from time to time to effect the purposes of this Part..

(Ord. 183, 8/2/1995, §I)

§205. RULES AND REGULATIONS TO BE IN CONFORMITY WITH APPLICABLE LAW.

All such rules and regulations adopted by the Township shall be in conformity with the provisions herein, all other ordinances of the Township, and all applicable laws and regulations of administrative agencies of Bucks County and the Commonwealth of Pennsylvania.

(Ord. 183, 8/2/1995, §I)

§206. PROCEDURE FOR OBTAINING HOLDING TANK PERMIT.

Before a holding tank may be installed, the property owner shall:

1. Obtain a permit for the holding tank from the BCDH.
2. File a copy of the BCDH permit, application and plan with the Township.
3. File annually with the Township a copy of a written agreement between the property owner, hauler and acceptor covering the periodic emptying of the tank.
4. Submit such additional information on the size and location of the tank and such other information as the Township may require in order to complete this review.
5. Deposit and/or post the sum of money to serve as financial security, in the form and/or amount as provided by the rules and regulations promulgated for this Part. These funds are to be held by the Township and used in the event the Township is required to perform any services or pay for any services or maintenance relative to the holding tank. The Board of Supervisors shall have the right to claim the entire escrow deposit as

reimbursement for Township expenses, including administrative, engineering and legal fees.

6. Pay a fee to the Township for the holding tank permit in accordance with the appropriate resolutions as adopted by the Board of Supervisors from time to time.
7. Execute an agreement, in a form acceptable to the Township, indemnifying and holding the Township harmless in the event of a claim against the Township arising from the operation of the holding tank.

A permit issued under the terms of this Part shall become null and void if the holding tank installation has not been completed to the satisfaction of the Township within one (1) year of the date of issuance.

(Ord. 183, 8/2/1995, §I)

§207. DUTIES OF PROPERTY OWNER.

The owner of a property that utilizes a holding tank shall:

1. Maintain the holding tank in conformance with this Part or any ordinance of the Township, the provisions of any applicable law, and the rules and regulations of the Township, Bucks County, and any administrative agency of the Commonwealth of Pennsylvania.
2. Permit only persons authorized by the BCDH or PADEP to collect, transport and dispose of the contents of the tank.
3. Be responsible for the periodic cleaning or emptying of the holding tank as well as the cost thereof.
4. Be responsible for the periodic testing of sewage and the cost thereof when deemed necessary by the Township.

(Ord. 183, 8/2/1995, §I)

§208. DISCONNECTION.

Whenever sanitary sewer service provided by the Township becomes available for use, the holding tank must be disconnected and disposed of in accordance with applicable BCDH and PADEP regulations, and proper connection shall be made to the sanitary sewer within ninety (90) days after notice to make connection.

(Ord. 183, 8/2/1995, §I)

§209. PENALTIES.

1. Any person or entity who shall violate any of the provisions of this Part, or who shall fail to comply with any written notice from Upper Makefield Township which describes a condition of noncompliance, shall be guilty of a violation of this Part, and, upon conviction, thereof, shall be sentenced to a fine of not more than one thousand dollars (\$1,000.00) plus costs and

expenses. A new and separate violation shall be deemed to be committed for each day after receipt of the aforesaid notice that such violation exists. (Ord. 186)

2. In addition to the penalties in §209.1, the Township may institute an action, in law or in equity before any court of competent jurisdiction.
3. The remedies of this Section 209 shall be cumulative.

(Ord. 143, 8/17/1988, §502; amended by Ord. 186, 12/6/1995)

B. RULES AND REGULATIONS.

§221. GENERAL REQUIREMENTS.

1. Proposed disposal site, method of disposal and waste hauler for holding tank waste shall be approved by the BCDH or PADEP prior to final approval for installation of the holding tank.
2. Whenever Upper Makefield Township issues permits for holding tanks, the Township may impose other conditions it deems necessary for operation and maintenance of the tanks in order to prevent a nuisance or public health hazard.
3. Holding tanks require regular service and maintenance to prevent their malfunction and overflow and shall be used in lieu of other methods of sewage disposal only when the following conditions are met:
 - a) An Act 537 revision provides for replacement of the holding tank by adequate sewerage services in accordance with a schedule approved by Upper Makefield Township and the PADEP.
 - b) When the Township, BCDH and PADEP determined that the use of a holding tank is necessary to abate a nuisance or public health hazard.
 - c) In the case of an institutional, recreational or commercial establishment with a sewage flow of eight hundred (800) gallons per day or less, a holding tank may be utilized. (Res. 99-05-05).
4. The property owner shall execute an agreement shall be executed with Upper Makefield Township in a manner acceptable to the Township guaranteeing future maintenance of the holding tank. Said agreement shall include provisions for Township to receive and review pumping receipts for the holding tank, periodic inspection and procedures and penalties for correction of malfunctions or public health hazards from use of the holding tank.
5. The applicant shall deposit and/or post with Township a sum of money in a form and amount determined by the Township to serve as financial security, to guarantee the proper installation, operation, and maintenance of

the holding tank and to reimburse the Township for any services and expenses incurred by the Township relative to the holding tank.

(Res. 95-08-02, 8/2/1995, Art I; as amended by Res. 99-05-05, 5/5/1999)

§222. STANDARDS FOR HOLDING TANKS.

1. In addition to other requirements of this Part, holding tanks shall be constructed to meet specifications of Pa. Code, Title 25, Chapter 73, as well as PADEP rules and regulations relating to standards for septic tanks.
2. The minimum capacity of a holding tank shall be one thousand (1,000) gallons or a volume equal to the quantity of waste generated within three (3) days, whichever is larger.
3. Holding tanks shall be equipped with a warning device to indicate when the tank is filled to seventy-five (75) percent capacity. The warning device shall create an audible and visual alarm at an exterior location frequented by the property owner or responsible individual or entity.
4. Disposal of the waste from a holding tank shall be at a site approved by the BCDH, PADEP, or NJDEP.

(Res. 95-08-02, 8/2/1995, Art. II)

§223. PERMIT PROCESSING.

1. Upon receipt of approval by the BCDH and/or PADEP for the installation of a holding tank, applicant shall secure a holding tank permit for tank installation from Upper Makefield Township and make payment of required permit fee. All applications for permits shall include the following:
 - a) Completed holding tank application.
 - b) Application fee per current Township fee schedule.
 - c) Project description.
 - d) Detailed construction plan.
 - e) Written approval from the BCDH or PADEP.
 - f) Holding tank hauling agreement executed by owner, hauler and acceptor.
- a) 2. A cash escrow performance guarantee shall be established with Upper Makefield Township pursuant to §221(5), above, as determined by the Board of Supervisors within the written agreement which requires a minimum of three times the fee to pump out the holding tank(s).

(Res. 95-08-02, 8/2/1995, Art. III)

§224. TANK INSTALLATION.

1. Tank installation shall not commence until receipt of a holding tank installation permit approved by Upper Makefield Township.
2. Applicant shall give no less than forty-eight (48) hours notice to Upper Makefield Township prior to commencement of installation.
3. All holding tank installations shall conform with the rules and regulations of this Part. Upper Makefield Township reserves the right to suspend installation at any time by way of verbal and/or written notification should the tank installation at any time be in violation of this Part, the Township holding tank resolution, the agreement with the Township permitting the holding tank the BCHD/PADEP permit, , PADEP or County or local regulations, including but not limited to, the Upper Makefield Township Building and Plumbing Codes.

(Res. 95-08-02, 8/2/1995, Art IV)

§225. TANK REMOVAL AND/OR DISPOSAL.

Removal and/or disposal of a holding tank shall be in compliance with applicable regulations of the PADEP and shall require notice to Upper Makefield Township no less than fifteen (15) days prior to the start of removal or disposal.

(Res. 95-08-02, 8/2/1995, Art. V)

§226. TRANSFER OF OWNERSHIP.

The owner of each holding tank shall agree to maintain and be responsible for the holding tank, subject to the terms and conditions stated in this Part. The agreement with the Township regarding the operation, maintenance and removal of the shall be recorded in the Office of the Bucks County Recorder of Deeds and shall be binding upon all future property owners.

(Res. 95-08-02, 8/2/1995, Art. VI)

§227. AMENDMENTS.

The Board of Supervisors of Upper Makefield Township reserves the right to amend this Part at any time, as deemed necessary, and to adopt such separate regulations by resolutions as necessary to implement the purposes of this Part as set forth in §103.

(Res. 95-08-02, 8/2/1995, Art. VI)

SECTION II.

Severability. If any section, paragraph, sub-section, clause or provision of this Ordinance shall be declared invalid or unconstitutional by a court of competent jurisdiction, such decision shall not affect the validity of this Ordinance as a whole or any part thereof other than that portion specifically declared invalid.

SECTION III.


Repealer. All ordinance or parts of ordinances which are inconsistent herewith are hereby repealed.

SECTION IV.

Effective Date. This Ordinance shall become effective five (5) days after final enactment.

ENACTED AND ORDAINED this 17th day of November, A.D., 2010.

UPPER MAKEFIELD TOWNSHIP
BOARD OF SUPERVISORS


Conrad Baldwin, Jr.

John Silvers


Thomas F. Cino


Daniel Rattigan

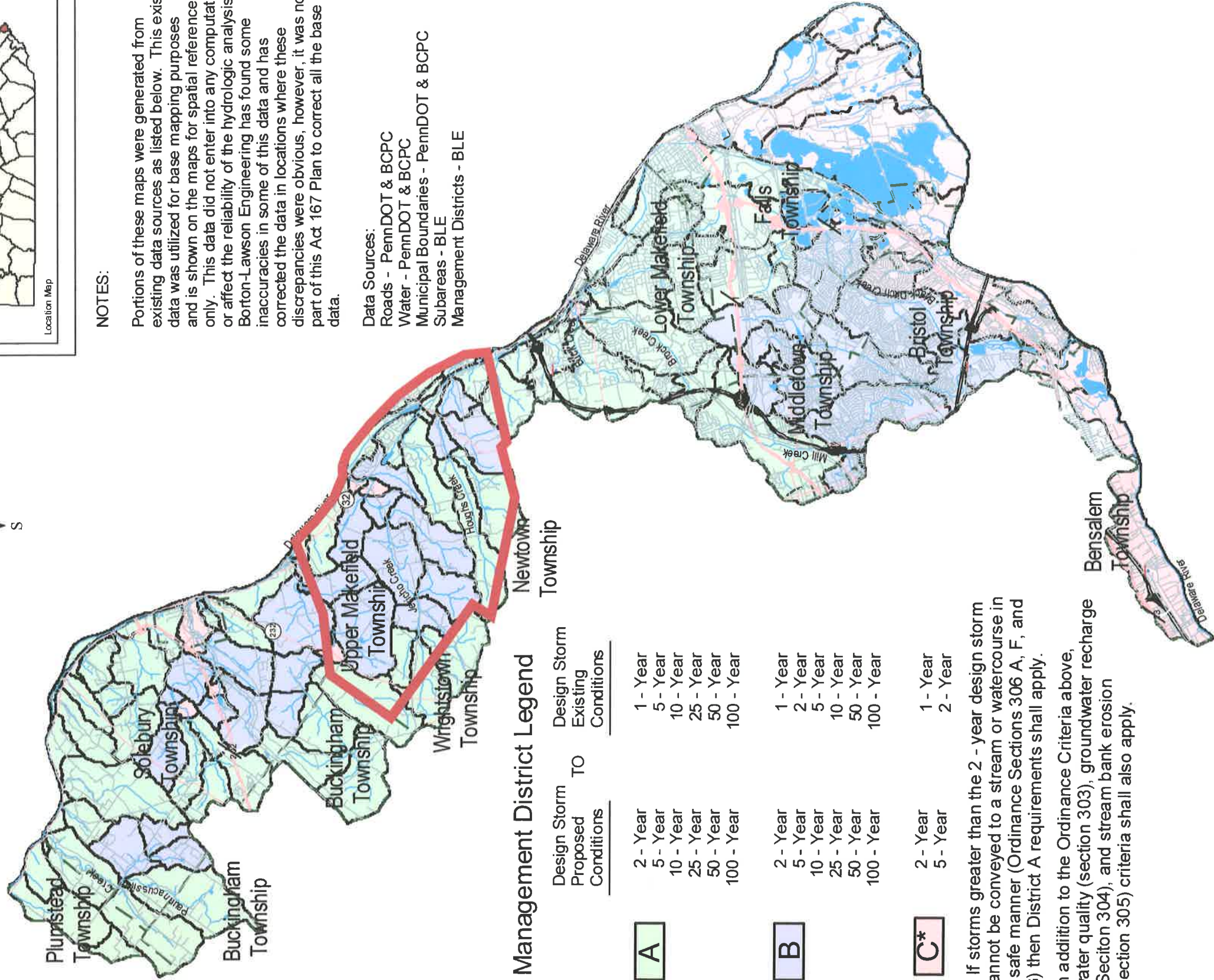
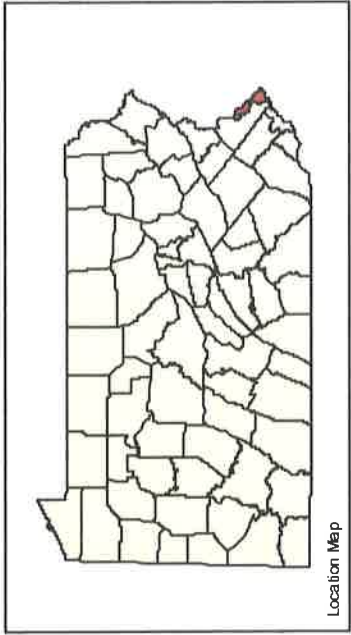
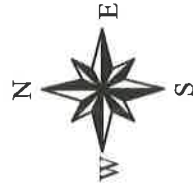

Mary Ryan

ATTEST:


Stephanie Teoli, Township Manager

APPENDIX E

STORMWATER MANAGEMENT DISTRICTS



NOTES:

Portions of these maps were generated from existing data sources as listed below. This existing data was utilized for base mapping purposes and is shown on the maps for spatial reference only. This data did not enter into any computations or affect the reliability of the hydrologic analysis. Borton-Lawson Engineering has found some inaccuracies in some of this data and has corrected the data in locations where these discrepancies were obvious, however, it was not a part of this Act 167 Plan to correct all the base data.

Data Sources:
Roads - PennDOT & BCPC
Water - PennDOT & BCPC
Municipal Boundaries - PennDOT & BCPC
Subareas - BLE
Management Districts - BLE

Management District Legend

	Design Storm Proposed Conditions	TO	Design Storm Existing Conditions
A	2 - Year		1 - Year
	5 - Year		5 - Year
	10 - Year		10 - Year
	25 - Year		25 - Year
	50 - Year		50 - Year
B	100 - Year		100 - Year
	2 - Year		1 - Year
	5 - Year		2 - Year
	10 - Year		5 - Year
	25 - Year		10 - Year
C*	50 - Year		50 - Year
	100 - Year		100 - Year
	2 - Year		1 - Year
	5 - Year		2 - Year

* If storms greater than the 2 - year design storm cannot be conveyed to a stream or watercourse in a safe manner (Ordinance Sections 306 A, F, and G) then District A requirements shall apply.

In addition to the Ordinance Criteria above, water quality (section 303), groundwater recharge (Section 304), and stream bank erosion (Section 305) criteria shall also apply.

Management Districts

Delaware River South Watershed
Bucks County, PA

Prepared For:
Bucks County Planning Commission
The Almshouse
Neshaminy Manor Center
Doylestown, PA 18901

Appendix - B

ACT 167
Stormwater Management Plan
Phase II

Map Legend

- Subarea Boundary
- Subarea ID Number
- Municipal Boundaries
- Streams
- Water Bodies
- Interstate Roads
- US Traffic Routes
- PA Traffic Routes
- State Routes
- Local Roads
- Railroads

Borton Lawson
Engineering
804 Capital Drive
Suite 200
Doylestown, PA 18901-3002
Phone: 215-327-1188 Fax: 215-327-1189
Web: www.bortonlawson.com

Prepared By: CCF
Project Number: 99418.00
Checked By:
Date: Dec 2003

APPENDIX F

**PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
PRELIMINARY TREATMENT REQUIREMENTS ("PTR")
FOR
STREAM DISCHARGE EFFLUENT DISPOSAL ALTERNATIVES**



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

July 31, 2014

Mr. Thomas F. Zurko, P.E.
CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901

Re: Preliminary Treatment Requirements
Dolington Area On-Lot Treatment System
Upper Makefield Township
Bucks County

Dear Mr. Zurko:

This is in reply to your July 23, 2014, e-mail request for Preliminary Treatment Requirements for a discharge of 18,500 gallons per day to an unnamed tributary to Hough's Creek, with a proposed treatment plant to be located in the Dolington Area between Towerview and Balderston Drives near Washington Crossing and Dolington Roads in Upper Makefield Township, Bucks County. The discharge is located at 40°16'00" N 74°54'08" W.

In order to assist consultants with the design of wastewater treatment facilities, the Department of Environmental Protection (DEP) Southeast Regional Office has developed technology based/DRBC Special Waters regulations effluent limits that will meet stream requirements at the identified location. These limits are as follows:

CBOD₅ = 10 mg/l
TSS = 10 mg/l
NH₃N = 1.5 mg/l
Total Phosphorus = 0.5 mg/l
Total Nitrogen = 10 mg/l
DO = 6.0 mg/l, minimum
Fecal Coliform = 50/100 ml geometric mean
Total Residual Chlorine = 0.5 mg/l*
pH = 6.0 to 9.0 standard units

*Ultraviolet (UV) disinfection system is recommended. Total Residual Chlorine limit will not be applicable if UV disinfection is proposed.

Please use these limits in the design of your proposed wastewater treatment facility.

Mr. Thomas F. Zarko, P.E.

- 2 -

If you have any questions, please call Mr. Juan Vicenty-Gonzalez at 484.250.5117. You may also wish to contact the Sewage Planning Specialist for information on Act 537 sewage facilities planning requirements for this project.

Sincerely,



Pravin Patel, P.E.

Environmental Engineer Manager
NPDES Permits Section
Clean Water

cc: Upper Makefield Township
Mr. Dudley
Ms. Mahoney
Mr. Patel
NPDES File
Re 30 (GJE14CLW)210-2

APPENDIX G

ON-LOT TREATMENT SYSTEM MANUFACTURER CONFIRMATION OF COMPLIANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION PRELIMINARY TREATMENT REQUIREMENTS



8450 Cole Parkway ▪ Shawnee, KS 66227 ▪ Phone: 913-422-0707 ▪ Fax: 913-422-0808
E-mail: onsite@biomicrobics.com ▪ www.biomicrobics.com ▪ 800-753-FAST (3278)

October 17, 2014
Sent Via Email

Thomas F. Zarko, PE
Vice President
CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901

RE: Dolington Area On-Lot Treatment System – Upper Makefield Township – Bucks County, PA

Dear Thomas,

We have reviewed the information regarding the above mentioned project. This design is for individual single family dwellings, and the flow is assumed to be for <500 GPD design flow. The influent parameters were not given so we have assumed the following:

Parameter	Influent	Effluent
CBOD5 (mg/L)	250	10
TSS (mg/L)	250	10
NH3N (mg/L)	50	1.5
Total Nitrogen (mg/L)	50	10
Total Phosphorus (mg/L)	8	0.5
DO	N/A	6.0
Fecal Coliform	N/A	50/100 mL geometric mean
Total Residual Chlorine *	N/A	0.5 mg/L
pH	6 – 9	6 – 9

* If UV disinfection is used then residual chlorine limit will not be applicable.

Based on the above influent/effluent parameters given and assumed, we suggest the following treatment sizing;

- ½ - 1 times the daily flow in liquid volume for settling tank/trash tank, followed by
- One (1) BioBarrier® 0.5N, with
 - Carbon feed system and carbon source should be installed in the anoxic tank, (carbon feed system and carbon source supplied by others).
 - If the influent BOD concentration is less than five times the concentration of influent total nitrogen, then supplemental carbon is required to achieve the desired effluent total nitrogen.
 - Phosphorus removal system and chemical source installed in membrane tank, (phosphorus removal system and source supplied by others), followed by
- UV disinfection system, if required, (Bio-Microbics® may supply), followed by
- Reaeration system, (Bio-Microbics® may supply)

Bio-Microbics® equipment will not remove phosphorus without chemical addition. Chemical and its feed system should be used with the BioBarrier® membrane. Bio-Microbics® does not supply chemical feed or chemical source. Some chemicals used to remove phosphorus may require pH to be within certain ranges for good removal. We suggest considering pH independent phosphorus removal chemical.

When installed, operated, and maintained correctly, with sufficient alkalinity, and no temperature, toxicity, or pH issues, this system should be capable of achieving the effluent requirements outlined above. Should flows or influent concentrations exceed those listed above, additional equipment may be required.

The influent information used to size this project, is not a substitution for the responsible engineer's design parameters for the project. Please verify with the responsible engineer, regarding the appropriate influent design parameters for this project. If design parameters are different than outlined above, then please let us know in writing, so we may suggest sizing based on the responsible engineer's design parameters.

Regards,



Lucas Staus
Senior Sales Engineer
Bio-Microbics, Inc.

September 16, 2014

Mr. Thomas F. Zarko, PE
Vice President
CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901

Dear Mr. Zarko,

The Norweco Hydro-Kinetic® system has successfully demonstrated through NSF testing and is currently in the BNQ testing stage to meet the requirements that are present by the Pennsylvania DEP. The Norweco Hydro-Kinetic® system is capable of meeting the required effluent limits for the Upper Makefield Township project, except for the phosphorus limit of .5 mg/l. Phosphorus can be reduced with the addition of a chemical feeder unit that removes more solids from the effluent. The combination of chemical and biological treatment should be adequate to meet the desired effluent quality, as long as the systems are operated properly and have the required periodic maintenance.

Sincerely,

Norweco, Inc.



Paul Cannon
Sales Representative

Attachment: Pennsylvania DEP Letter, 7-31-14



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

July 31, 2014

Mr. Thomas F. Zurko, P.E.
CKS Engineers, Inc.
88 South Main Street
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In order to assist consultants with the design of wastewater treatment facilities, the Department of Environmental Protection (DEP) Southeast Regional Office has developed technology based/DRBC Special Waters regulations effluent limits that will meet stream requirements at the identified location. These limits are as follows:

CBOD₅ = 10 mg/l
TSS = 10 mg/l
NH₃N = 1.5 mg/l
Total Phosphorus = 0.5 mg/l
Total Nitrogen = 10 mg/l
DO = 6.0 mg/l, minimum
Fecal Coliform = 50/100 ml geometric mean
Total Residual Chlorine = 0.5 mg/l*
pH = 6.0 to 9.0 standard units

*Ultraviolet (UV) disinfection system is recommended. Total Residual Chlorine limit will not be applicable if UV disinfection is proposed.


Please use these limits in the design of your proposed wastewater treatment facility.

Mr. Thomas F. Zarko, P.E.

- 2 -

If you have any questions, please call Mr. Juan Vicenty-Gonzalez at 484.250.5117. You may also wish to contact the Sewage Planning Specialist for information on Act 537 sewage facilities planning requirements for this project.

Sincerely,


Pravin Patel, P.E.
Environmental Engineer Manager
NPDES Permits Section
Clean Water

cc: Upper Makefield Township
Mr. Dudley
Ms. Mahoney
Mr. Patel
NPDES File
Re 30 (GJE14CLW)210-2

October 10, 2014

Thomas Zarko
CKS Engineers
88 S Main St
Doylestown, PA, 18901

Two Stage AX20 Treatment System Description

Mr. Zarko,

To describe the capabilities and application of a two stage AX20 treatment system it is important to first describe typical residential strength values and the function of a single stage system.

System Requirements: Residential Strength Wastewater

Table 1. Residential Strength Wastewater (Influent Characteristics)¹

Characteristic	Average (mg/L)	Weekly Peak (mg/L)	Rarely Exceed (mg/L)
CBOD ₅	130	200	300
TSS	40	60	150
TKN	65	75	150
G&O	20	25	25

¹ AdvanTex® Treatment Systems are typically expected to receive residential-strength wastewater from primary septic tanks. Residential-strength wastewater is defined as primary sewage effluent from a septic tank that does not exceed the parameters in this table.

Standard Single Stage AX20 System:

Organic removal is the simplest form of advanced treatment, typically requiring only primary and secondary treatment. When loaded at or below the applicable loading rates, standard AdvanTex Treatment Systems typically achieve treatment levels of < 10 mg/L BOD5/cBOD5 and TSS (based on 30-day average or 30-day arithmetic mean), and they typically provide reduction of total nitrogen (TN) > 60% and removal of ammonia (NH3-N) of 95% (range 90-99%).

Figure 1. shows the typical configuration for discharge limits associated with these constituents. See the AdvanTex Unit Sizing section of this document for the sizing equation listed.

A pre-anoxic stage is recommended for all organic-only removal applications and it is required for systems with high-strength primary treated effluent (Application Types 5 & 7).

A two-stage AdvanTex system will be necessary for systems with discharge limits of NOT TO EXCEED 10 mg/L BOD5/cBOD5 or for discharge limits of ≤ 5 mg/L BOD5/cBOD5 based on a 30-day average or 30-day arithmetic mean.

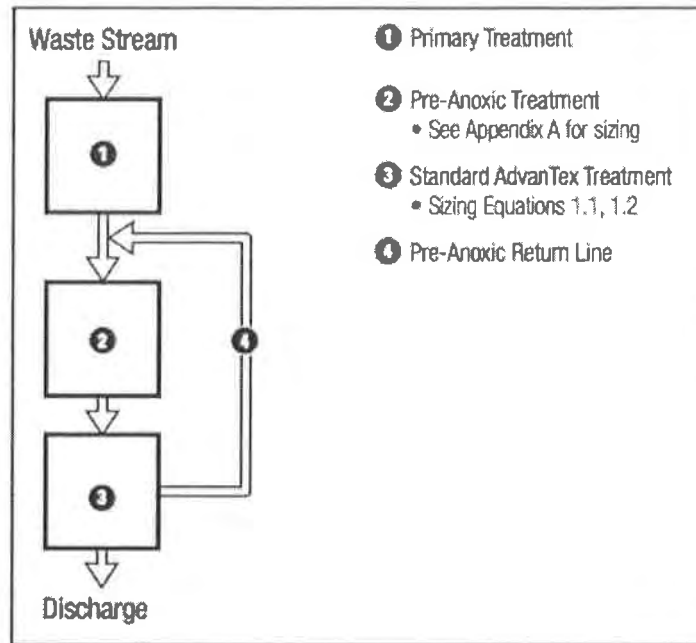


Fig 1.

Non-Standard Two Stage AX20 System:

For wastewater systems with permit limits for TN, TIN, or NO₃-N requiring greater than 60% nitrogen reduction, pre-anoxic and post-anoxic treatment stages are needed, as well as the possible addition of both supplemental carbon and alkalinity. Figure 2 shows the typical configuration for systems with discharge limits requiring this level of treatment.

The nitrification occurring in the AdvanTex treatment stage is heavily influenced by the alkalinity required to buffer the process (7.14 mg/L alkalinity per 1 mg/L of ammonia-N). pH levels of 7.5 to 8.5 are ideal for complete nitrification and should be buffered to remain above a pH of 7 for all applications. The use of the pre-anoxic stage benefits overall operation of the system, since denitrification in this stage will return as much as 50% of the alkalinity consumed during nitrification. Even so, a supplemental alkalinity feeder may be necessary immediately preceding the AdvanTex treatment stage, to ensure sufficient alkalinity for nitrification.

Carbon addition should be balanced to the wastewater flows to ensure carbon-to-nitrogen (C:N) ratios are appropriate. C:N ratios need to be greater than 4:1 and preferably in the 6:1 range to ensure that denitrification occurs. Carbon is added in the post-anoxic stage to maintain the proper carbon-to-nitrogen ratio. For applications requiring greater than 80% removal of nitrogen, carbon addition in the pre-anoxic stage is also recommended. (See Also: Pg. 18 of NDA-ATX-1 *Orencia AdvanTex Design Criteria: Commercial Treatment Systems*)

For TN, TIN, and NO₃-N discharge requirements of < 10 mg/L, or for applications with primary treated effluent TN values of > 150 mg/L and greater than 80% nitrogen removal requirements, it will be necessary to integrate a denitrification upflow filter, moving bed bioreactor (MBBR), or other denitrification technology into the treatment process.

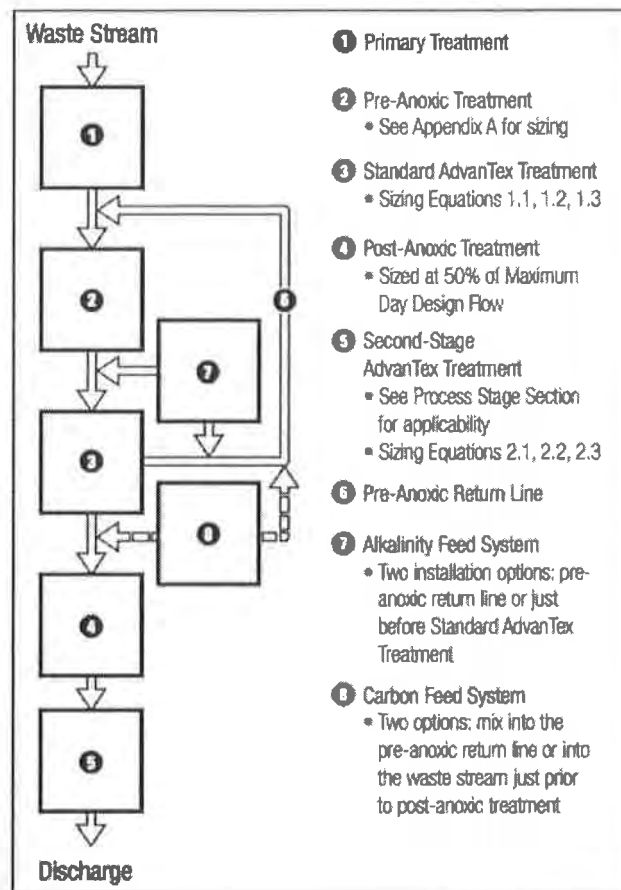


Fig. 2. Treatment Diagram for Advanced Removal of Nitrogen (<10mg/L TN)

Operational Considerations:

With the aforementioned system requirements the operator of a two stage AX20 system will need to be vigilant to ensure the two treatment stages and the alkalinity and carbon feed units are operated in a way to account for the wider range of waste strength fluctuations that are more easily seen on a per residence basis.

Best regards,

Cory Lyon
Account Manager
Orenco Systems Inc.
clyon@orenco.com

APPENDIX H
PROOF OF PUBLIC NOTICE

1st PUBLIC NOTICE

NOVEMBER 18, 2014

Bucks County, SS.

UPPER MAKEFIELD TWP
1076 EAGLE ROAD
NEWTOWN, PA 18940

1-2159683340
0006724775-01

**NOTICE
UPPER MAKEFIELD TOWNSHIP**

Public Notice is hereby given that the Township of Upper Makefield, Bucks County, Pennsylvania proposes to adopt an Official Sewage Facilities Plan Update in accordance with Pennsylvania Act 537. The Act 537 Sewage Facilities Plan Update has been prepared to address the present and future sewage disposal needs of Upper Makefield Township. The Plan Update has been prepared in accordance with 25 PA Code, Chapter 71, "Administration of Sewage Facilities Planning Program."

The Plan Update addresses sewage disposal needs for the entire Township, which includes private on-lot sewage disposal systems, private small flow treatment facilities, and Township-owned public sewerage facilities. In conjunction with the preparation of the Plan Update, various Federal, State, and Local planning documents and reports related to wastewater planning issues affecting Upper Makefield Township were reviewed, and an extensive evaluation of surface hydrology, soils, geology, topography, water quality, environmental impacts, on-lot sewage disposal, existing sewage facilities, future growth, zoning, land planning, and land conservation was performed. Meetings and file reviews were conducted with Bucks County Health Department representatives to identify any "Needs Areas" in the Township with histories of malfunctioning on-lot sewage disposal systems. The Needs Areas that were identified by the Health Department include the Taylorsville Area, which is located in the vicinity of the Taylorsville Road (S.R. 2071)/Washington Crossing Road (S.R. 0532) intersection, and the Dolington Area, which is located in the vicinity of the Washington Crossing Road (S.R. 0532)/Lindenhurst Road (S.R. 2069) intersection. The Township commissioned the performance of detailed On-Lot Sewage Disposal System Surveys by an independent consultant to thoroughly evaluate present conditions within the Needs Areas that were identified by the Health Department. As part of the Plan Update process, the Township developed a number of potential short-term and long-term sewage disposal alternatives for the identified Needs Areas. Additionally, during the course of the Plan Update preparation, the Township had numerous discussions and attended

several meetings with Pennsylvania Department of Environmental Protection representatives to obtain initial input/feedback concerning the potential short-term and long-term sewage disposal alternatives that have been developed for the identified Needs Areas.

A copy of the Act 537 Sewage Facilities Plan Update can be reviewed at the Township Administration Building, 1076 Eagle Road, Newtown, Pennsylvania, 8:30 AM to 4:30 PM, Monday through Friday (excluding holidays) from November 19, 2014 to January 19, 2015.

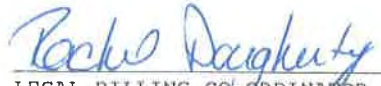
Written comments from the public regarding the Act 537 Sewage Facilities Plan Update will be received by the Township at the above address for 60 days following the date of publication of this notice. All comments should be sent to the attention of the Township Board of Supervisors.

David Nyman
Interim Township Manager
Upper Makefield Township
11N 18

Rachel Dougherty being duly affirmed according to law, deposes and says that he/she is the Legal Billing Co-ordinator of the COURIER TIMES INCORPORATED, Publisher of The Bucks County Courier Times, a newspaper of general circulation, published and having its place of business at Levittown, Bucks County, Pa; that said newspaper was established in 1910; that securely attached hereto is a facsimile of the printed notice which is exactly as printed and published in said newspaper on

November 18, 2014

and is a true copy thereof; and that this affiant is not interested in said subject matter of advertising; and all of the allegations in this statement as to the time, place and character of publication are true.


LEGAL BILLING CO-ORDINATOR
COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Karen McGovern, Notary Public
Tullytown Boro, Bucks County
My Commission Expires Feb. 19, 2017

Affirmed and subscribed to me before me this
18th day of November 2014 A.D.



2ND PUBLIC NOTICE

DECEMBER 8, 2014

Bucks County, SS.

UPPER MAKEFIELD TWP
1076 EAGLE ROAD
NEWTOWN, PA 18940

1-2159683340
0006734409-01

**NOTICE
UPPER MAKEFIELD TOWNSHIP**

Public Notice is hereby given that the Township of Upper Makefield, Bucks County, Pennsylvania proposes to adopt an Official Sewage Facilities Plan Update in accordance with Pennsylvania Act 537. The Act 537 Sewage Facilities Plan Update has been prepared to address the present and future sewage disposal needs of Upper Makefield Township. The Plan Update has been prepared in accordance with 25 PA Code, Chapter 71, "Administration of Sewage Facilities Planning Program."

The Plan Update addresses sewage disposal needs for the entire Township, which includes private on-lot sewage disposal systems, private small flow treatment facilities, and Township-owned public sewerage facilities. In conjunction with the preparation of the Plan Update, various Federal, State, and Local planning documents and reports related to wastewater planning issues affecting Upper Makefield Township were reviewed, and an extensive evaluation of surface hydrology, soils, geology, topography, water quality, environmental impacts, on-lot sewage disposal, existing sewage facilities, future growth, zoning, land planning, and land conservation was performed. Meetings and file reviews were conducted with Bucks County Health Department representatives to identify any "Needs Areas" in the Township with histories of malfunctioning on-lot sewage disposal systems. The Needs Areas that were identified by the Health Department include the Taylorsville Area, which is located in the vicinity of the Taylorsville Road (S.R. 2071)/Washington Crossing Road (S.R. 0532) Intersection, and the Dolington Area, which is located in the vicinity of the Washington Crossing Road (S.R. 0532)/Lindhurst Road (S.R. 2069) intersection. The Township commissioned the performance of detailed On-Lot Sewage Disposal System Surveys by an independent consultant to thoroughly evaluate present conditions within the Needs

Areas that were identified by the Health Department. As part of the Plan Update process, the Township developed a number of potential short-term and long-term sewage disposal alternatives for the identified Needs Areas.

It was determined that the short-term sewage disposal needs of the Taylorsville and Dolington Areas for the Five-Year Planning Period of the Plan Update can be effectively addressed through water conservation, increased system oversight/maintenance, educating property owners on On-Lot Sewage Disposal System use/maintenance and amendment of the Township's On-Lot Sewage Disposal System Ordinance to incorporate additional maintenance provisions specific to these Areas. The Township will also provide input to the property owners where the On-Lot Sewage Disposal System Surveys identified operational problems, with regard to potential On-Lot Sewage Disposal System solutions with input/assistance from the Bucks County Health Department. With regard to the Taylorsville Area, if this short-term approach is found to be effective after five years of implementation, it will be considered to also satisfy the long-term sewage disposal needs of the Area for the Ten-Year Planning Period of the Plan Update.

Upon considering such factors as public and private implementation costs, ongoing operation and maintenance costs/responsibilities, anticipated reliability/performance, and consistency with prior Township planning/policies, it was determined that Alternative #6; STEP System/ Centralized Treatment System with Stream Discharge Effluent Disposal would be the preferred option to address the long-term sewage disposal needs of the Dolington Area. During the Five-Year Planning Period of the Plan Update, the Township has committed to continuing to work to refine the preferred long-term sewage disposal alternative in an effort to reduce currently projected costs that would be imposed on the affected property owners. Subsequently, during the initial stage of the Ten-Year Planning Period of the Plan Update, the Township will re-assess the currently identified long-term sewage disposal alternatives, identify any new alternatives that may be available based upon changes in current conditions and/or technology that may potentially occur over the short-term planning period, and initiate the administrative, legal, engineering, and procedural efforts associated with the implementation of the selected long-term sewage disposal alternative for the Dolington Area.

During the course of the Plan Update preparation, the Township had numerous discussions and attended several meetings with Pennsylvania Department of Environmental Protection representatives to obtain initial input/feedback concerning the potential short-term and long-term sewage disposal alternatives that have been developed for the identified Needs Areas.

A copy of the Act 537 Sewage Facilities Plan Update can be reviewed at the Township Administration Building, 1076 Eagle Road, Newtown, Pennsylvania, 8:30 AM to 4:30 PM, Monday through Friday (excluding holidays) from December 8, 2014 to January 19, 2015.

Written comments from the public regarding the Act 537 Sewage Facilities Plan Update will be received by the Township at the above address for 30 days following the date of publication of this notice. All comments should be sent to the attention of the Township Board of Supervisors.

David Nyman
Interim Township Manager
Upper Makefield Township
11 D 8

Rachel Dougherty being duly affirmed according to law, deposes and says that he/she is the Legal Billing Co-ordinator of the COURIER TIMES INCORPORATED, Publisher of The Bucks County Courier Times, a newspaper of general circulation, published and having its place of business at Levittown, Bucks County, Pa; that said newspaper was established in 1910; that securely attached hereto is a facsimile of the printed notice which is exactly as printed and published in said newspaper on

December 08, 2014

and is a true copy thereof; and that this affiant is not interested in said subject matter of advertising; and all of the allegations in this statement as to the time, place and character of publication are true.

Rachel Dougherty
LEGAL COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Karen McGovern, Notary Public
Tullytown Boro, Bucks County
My Commission Expires Feb. 19, 2017
PENNSYLVANIA ASSOCIATION OF NOTARIES
Karen McGovern
Affirmed and subscribed to me before me this
8th day of December 2014 A.D.

APPENDIX I

PLAN UPDATE REVIEW CORRESPONDENCE

**CORRESPONDENCE REGARDING LOCAL AND COUNTY PLANNING
AGENCY REVIEWS; COUNTY HEALTH DEPARTMENT REVIEW;
STATE AGENCY REVIEWS; PUBLIC COMMENTS AND APPLICABLE
CORRESPONDENCE CONCERNING DRAFT PLAN UPDATE,
DATED NOVEMBER 6, 2014**

APPENDIX I INDEX

CORRESPONDENCE REGARDING LOCAL AND COUNTY PLANNING AGENCY REVIEWS; COUNTY HEALTH DEPARTMENT REVIEW; STATE AGENCY REVIEWS; PUBLIC COMMENTS; AND APPLICABLE CORRESPONDENCE

1. Pennsylvania Department of Conservation and Natural Resources – PNDI Search
 - Pennsylvania Natural Diversity Inventory (PNDI) Review Dated October 29, 2014
 - Response Letter Dated November 6, 2014
2. Pennsylvania Historical and Museum Commission
 - Review Request Letter Dated November 6, 2014
 - Review Letter Dated November 17, 2014
 - Response Letter Dated December 15, 2014
 - Review Letter Dated January 12, 2015
3. Upper Makefield Township Planning Commission
 - Review Request Letter Dated November 10, 2014
 - Review Letter Dated December 4, 2014
 - Response Letter Dated December 9, 2014
4. Bucks County Planning Commission
 - Review Request Letter Dated November 10, 2014
 - Review Letter Dated December 3, 2014
 - Response Letter Dated December 9, 2014
5. Bucks County Health Department
 - Review Request Letter Dated November 10, 2014
 - Review Letter Dated January 13, 2015
 - Response Letter Dated January 28, 2015
6. Pennsylvania Department of Environmental Protection
 - Request for Informal Review Dated November 10, 2014 – No Response

7. Mr. & Mrs. James Barbera – 817 Dolington Road
 - Comment Letter Dated November 5, 2014
 - Response Letter Dated November 18, 2014
8. Mr. Larry Wenger – 821 Dolington Road
 - Comment Letter Dated November 5, 2014
 - Response Letter Dated November 18, 2014
9. Ms. Mary Jane Larson – 827 Washington Crossing Road
 - Response Letter Dated November 18, 2014
10. Mr. Justin Kloc – 779 Washington Crossing Road
 - Response Letter Dated November 18, 2014
11. Mr. James Ansboro – 713 Towerview Road
 - Response Letter Dated November 18, 2014
12. Mr. Gerald R. LaNasa – 17 Davis Drive
 - Comment Letter Dated January 18, 2015
 - Response Letter Dated February 4, 2015
13. Supervisor Mary Ryan – Upper Makefield Township
 - Comment Letter Dated January 18, 2014
 - Response Letter Dated February 4, 2015
14. Ms. Catherine L. Magliocchetti – 6 Spring Court
 - Comment Letter Dated January 19, 2015
 - Response Letter Dated February 11, 2015

PNDI PROJECT ENVIRONMENTAL REVIEW RECEIPTS

TAYLORSVILLE AREA

1. PROJECT INFORMATION

Project Name: **Taylorsville Area - Upper Makefield TWP, Act 537**

Date of review: **10/29/2014 9:40:21 AM**

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

Project Area: **37.3 acres**

County: **Bucks** Township/Municipality: **Upper Makefield**

Quadrangle Name: **LAMBERTVILLE** ~ ZIP Code: **18977**

Decimal Degrees: **40.290595 N, -74.879442 W**

Degrees Minutes Seconds: **40° 17' 26 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	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

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.

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel.

"Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .

Your answer is: **4. Someone qualified to identify and delineate wetlands has investigated the site, and determined that wetlands ARE located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)**

Q2: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats

Your answer is: **1. Yes**

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: Further review of this project is necessary to resolve the potential impacts(s). Please send

project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

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.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of Minimum Materials to be submitted:

____ **SIGNED** copy of this Project Environmental Review Receipt

____ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

____ Project location information (name of USGS Quadrangle, Township/Municipality, and County)

____ USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.

____ A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

____ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

____ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing

the location of all project features, as well as wetlands and streams

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: _____
Company/Business Name: _____
Address: _____
City, State, Zip: _____
Phone:(_____) _____ Fax:(_____) _____
Email: _____

8. CERTIFICATION

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

applicant/project proponent signature

date

DOLINGTON AREA

1. PROJECT INFORMATION

Project Name: **Dolington Area - Upper makefield TWP, Act 537**

Date of review: **10/29/2014 10:16:36 AM**

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

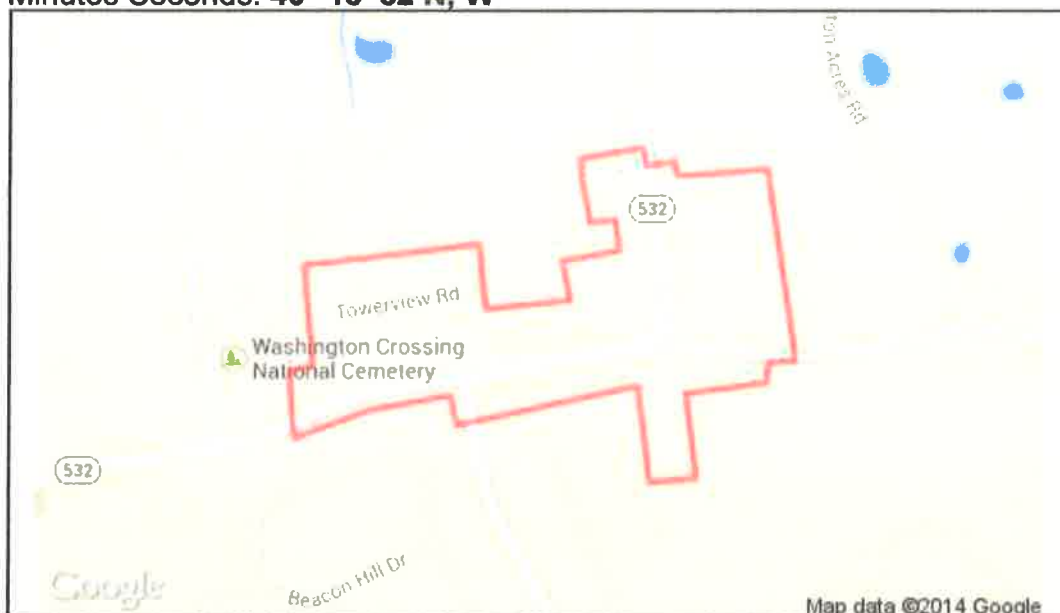
Project Area: **69.8 acres**

County: **Bucks Township/Municipality: Lower Makefield, Upper Makefield**

Quadrangle Name: **LAMBERTVILLE ~ ZIP Code: 18940**

Decimal Degrees: **40.264498 N, -74.898367 W**

Degrees Minutes Seconds: **40° 15' 52 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

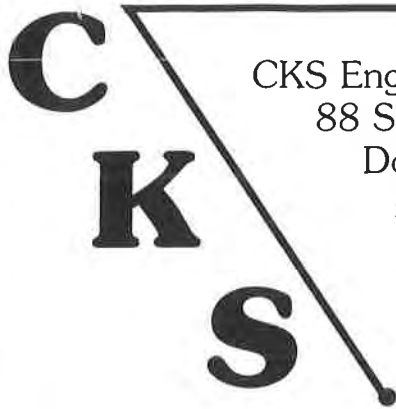
Name: _____
Company/Business Name: _____
Address: _____
City, State, Zip: _____
Phone: (____) _____ Fax: (____) _____
Email: _____

8. CERTIFICATION

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

applicant/project proponent signature

date



CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

November 6, 2014
Ref: #6700-78

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Pennsylvania Fish and Boat Commission
P.O. Box 9
Elm, PA 17521

Reference: PNDI Review for Act 537 Planning for Upper Makefield Township, Bucks County
(Project Search ID: 20141029472169)

Dear Sir or Madam:

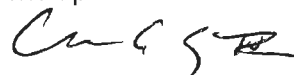
This letter is in response to a PNDI project environmental review for the above-referenced Act 537 Sewage Plan Update for Upper Makefield Township, Bucks County. The initial review receipt indicated the PFBC required further review of potential impacts associated with one of the "Needs Areas" identified within the Plan Update which is referred to as the "Taylorsville Area" and is located in the vicinity of the Taylorsville Road (SR 2071)/Washington Crossing Road (SR 0532) intersection.

Relative to this matter, we note that the Taylorsville Area is in close proximity to the Delaware River Canal and a delineated wetland. However, the alternatives selected to address the short-term and long-term sewage disposal needs of the Area do not require any construction. The selected alternatives propose improvement of the operation of existing on-lot sewage disposal systems by promotion of water conservation, increased system oversight/maintenance, and public education concerning system operation and maintenance requirements.

Enclosed with this correspondence you will find a signed copy of the PNDI Project Environmental review receipt and excerpts taken from the current draft of the Act 537 Plan Update which contain a narrative description, maps, and other information relevant for your review.

I trust the information enclosed is sufficient for you to proceed with a further review of potential impacts. Should you require additional information, please contact this office

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants


Charles E. Corey, P.E.

CEC/klk

Enclosures

cc: David Nyman, Township Manager
Thomas F. Zarko, CKS Engineers, Inc.
✓ File

7013 2630 0001 0166 8866

U.S. Postal Service™	
CERTIFIED MAIL™ RECEIPT	
(Domestic Mail Only; No Insurance Coverage Provided)	
For delivery information visit our website at www.usps.com	
OFFICIAL USE	
Postage	\$ 1.61
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.61
Postmark Here	
Sent To PA Fish and Boat Commission	
P.O. Box 9	
Elm, PA 17521	
PS Form 3800, August 2006	
See Reverse for Instructions	

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none">■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.■ Print your name and address on the reverse so that we can return the card to you.■ Attach this card to the back of the mailpiece, or on the front if space permits.	<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) R. A. BONARENK</p> <p>C. Date of Delivery 11/19/14</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
1. Article Addressed to: PA Fish and Boat Commission P.O. Box 9 Elm, PA 17521	3. Service Type <input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Priority Mail Express™ <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> Collect on Delivery
2. Article Number (Transfer from service label)	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
7013 2630 0001 0166 8866	

1. PROJECT INFORMATION

Project Name: **Taylorsville Area - Upper Makefield TWP, Act 537**

Date of review: **10/29/2014 9:40:21 AM**

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

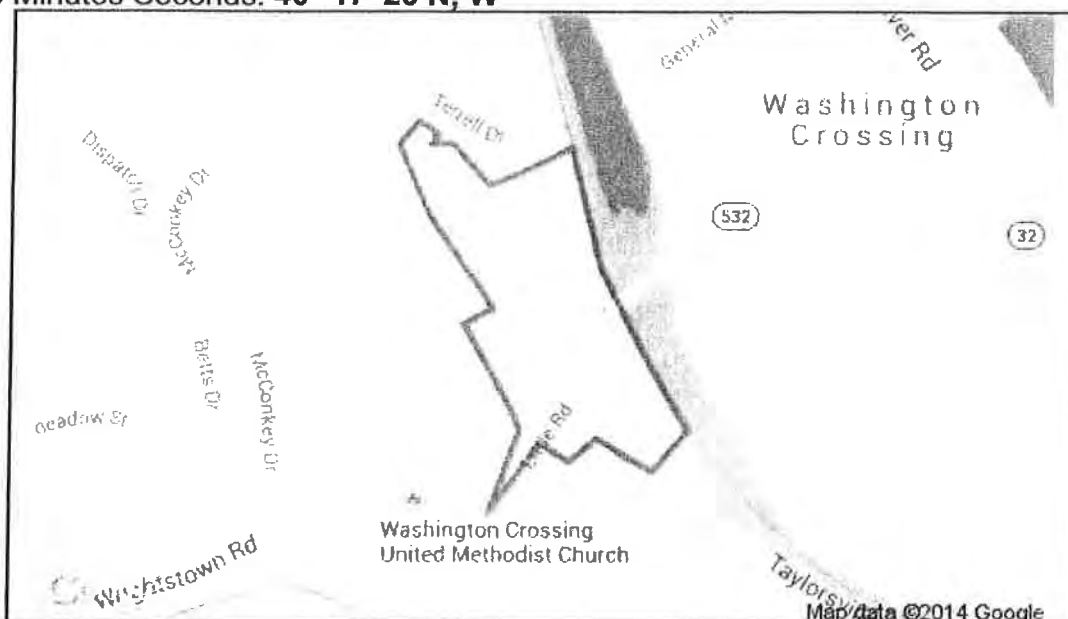
Project Area: **37.3 acres**

County: **Bucks Township/Municipality: Upper Makefield**

Quadrangle Name: **LAMBERTVILLE ~ ZIP Code: 18977**

Decimal Degrees: **40.290595 N, -74.879442 W**

Degrees Minutes Seconds: **40° 17' 26 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	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

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.

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel.

"Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .

Your answer is: **4. Someone qualified to identify and delineate wetlands has investigated the site, and determined that wetlands ARE located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)**

Q2: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats

Your answer is: **1. Yes**

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: Further review of this project is necessary to resolve the potential impacts(s). Please send

project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

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.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of *Minimum* Materials to be submitted:

- ☒ **SIGNED** copy of this Project Environmental Review Receipt
- ☒ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
- ☒ Project location information (name of USGS Quadrangle, Township/Municipality, and County)
- ☒ USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.

- ☒ A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
- ☒ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
- ☒ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing

the location of all project features, as well as wetlands and streams

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: CHARLES COREY
Company/Business Name: CKS ENGINEERS, INC
Address: 88 S. MAIN STREET
City, State, Zip: DOYLESTOWN, PA 18901
Phone: (215) 340-0600 Fax: ()
Email: CCOREY@CKSENGINEERS.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.

Ch. C. Corey
applicant/project proponent signature

10/30/2014
date



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CULTURAL RESOURCE NOTICE

Read the instructions before completing this form.

SECTION A. APPLICANT IDENTIFIER

Applicant Name Township of Upper Makefield

Street Address 1076 Eagle Road

City Newtown State PA Zip 18940

Telephone Number 215-968-3340

Project Title Act 537 Sewage Facilities Plan, Taylorsville Area

SECTION B. LOCATION OF PROJECT

Municipality Upper Makefield County Name Bucks DEP County Code 09

SECTION C. PERMITS OR APPROVALS

Name of Specific DEP Permit or Approval Requested: Act 537, Planning approval

Anticipated federal permits:

- | | |
|--|---|
| <input type="checkbox"/> Surface Mining | <input type="checkbox"/> 404 Water Quality Permit |
| <input type="checkbox"/> Army Corps of Engineers | <input type="checkbox"/> Federal Energy Regulatory Commission |
| <input type="checkbox"/> 401 Water Quality Certification | <input type="checkbox"/> Other: _____ |

SECTION D. GOVERNMENT FUNDING SOURCES

- | | |
|--|--|
| <input type="checkbox"/> State: (Name) _____ | <input type="checkbox"/> Local: (Name) _____ |
| <input type="checkbox"/> Federal: (Name) _____ | <input type="checkbox"/> 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)
- | | |
|--|--|
| <input checked="" type="checkbox"/> Southeast Regional Office (Norristown) | <input type="checkbox"/> Northeast Regional Office (Wilkes-Barre) |
| <input type="checkbox"/> Southcentral Regional Office (Harrisburg) | <input type="checkbox"/> Northcentral Regional Office (Williamsport) |
| <input type="checkbox"/> Southwest Regional Office (Pittsburgh) | <input type="checkbox"/> Northwest Regional Office (Meadville) |
| <input type="checkbox"/> District Mining Office: _____ | <input type="checkbox"/> Oil & Gas Office: _____ |

SECTION F. RESPONSIBLE COUNTY CONSERVATION DISTRICT, if applicable.

County Conservation District Bucks County Conservation District Telephone Number, if known 215-345-7577

SECTION G. CONSULTANT

Consultant, if applicable CKS Engineers, Inc.

Street Address 88 South Main Street

City Doylestown State PA Zip 18901

Telephone Number 215-340-0600

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.

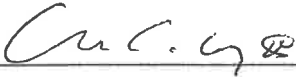
Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission.

REQUESTED

Attach photographs of any building over 40 years old.

Attach site map, if available.

SECTION I. SIGNATURE BLOCK

 Applicant's Signature	<u>11/6/2014</u> Date of Submission of Notice to PHMC
--	--

EXECUTIVE SUMMARY

This Act 537 Sewage Facilities Plan Update has been prepared to address the present and future sewage disposal needs of Upper Makefield Township, Bucks County, Pennsylvania. The existing Upper Makefield Township Act 537 Plan has not been revised since its completion in 1979. This Plan Update has been prepared in accordance with 25 PA Code, Chapter 71, "Administration of Sewage Facilities Planning Program."

This Plan Update addresses sewage disposal needs for the entire Township, which includes private on-lot sewage disposal systems, private small flow treatment facilities, and Township-owned public sewerage facilities. In conjunction with the preparation of this Plan Update, various Federal, State, and Local planning documents and reports related to wastewater planning issues affecting Upper Makefield Township were reviewed, and an extensive evaluation of surface hydrology, soils, geology, topography, water quality, environmental impacts, on-lot sewage disposal, existing sewage facilities, future growth, zoning, land planning, and land conservation was performed. Meetings and file reviews were conducted with Bucks County Health Department ("BCHD") representatives to identify any "Needs Areas" in the Township with histories of malfunctioning on-lot sewage disposal systems. The Township commissioned the performance of detailed On-Lot Sewage Disposal System Surveys by an independent consultant to thoroughly evaluate present conditions within the Needs Areas that were identified by the Health Department. Additionally, during the course of the Plan Update preparation, the Township had numerous discussions and attended several meetings with Pennsylvania Department of Environmental Protection ("PA DEP") representatives to obtain initial input/feedback concerning the potential short-term and long-term sewage disposal alternatives that have been developed for the identified Needs Areas.

The most significant findings/conclusions that were reached in conjunction with the preparation of this Plan Update are summarized below:

A. Short-Term and Long-Term Sewage Disposal Needs Assessment

- The majority of properties within the Township are served by On-Lot Sewage Disposal Systems ("OLDS"). With the exception of isolated instances, based upon the evaluation performed in conjunction with this Plan Update, the continued use of OLDS will address the long-term sewage disposal needs of the majority of properties within the Township.
- In conjunction with the continuing use of OLDS within the Township, it is essential that the Township continue to implement its Sewage Management Program, which includes enforcement of its OLDS Ordinance. The OLDS Ordinance (Upper Makefield Township Code, Chapter 18) includes the following requirements that apply to all areas of the Township:
 - a) Required pumping of OLDS at a minimum of every three years.
 - b) Pumper/Inspector report to be completed and given to property owner after each inspection; form to be forwarded to Township when repairs are required, or a malfunction is observed.

- c) Educate property owners about OLDS and proper operation and maintenance procedures through website, newsletter, and pamphlets available at the Township.

The Sewage Management Program is administered and enforced by the Township Code Enforcement Office. No additional Township personnel will be required, even with the proposed OLDS Ordinance amendments described in this Plan Update.

- The existing sewage facilities consisting of private and/or community treatment plants or public sewage treatment facilities that currently serve specific properties or areas within the Township were evaluated and determined to be adequate to satisfy current/future sewage disposal needs of the properties and/or areas served. Current operation and maintenance requirements for these facilities should be continued.
- At the outset of the Act 537 Plan Update process, the Township had contacted the BCHD requesting that the Health Department identify any "Needs Areas" within the Township that were experiencing problems with the functioning of existing OLDS. The BCHD had initially identified two specific areas in the Township with histories of OLDS functioning problems, namely the Taylorsville and Dolington Areas.

In response to the input received from the BCHD, the Township reviewed all Health Department records concerning OLDS within the Taylorsville and Dolington Areas to determine the severity of the OLDS functioning problems in each area. During mid – late 2012, the Township performed an exhaustive review of BCHD records for the Taylorsville and Dolington Areas, found the available information to be incomplete and/or inconsistent and, therefore, determined that the BCHD records would not conclusively document the severity of OLDS functioning problems within each area.

Based on the results of the BCHD records research, and in an effort to more accurately establish the current OLDS functioning conditions, the Township commissioned an intensive OLDS Survey of all properties located within the Taylorsville and Dolington Areas, where authorization was obtained from the affected property owners.

The conclusions reached in conjunction with the OLDS Survey that was performed within the Taylorsville Area were that the majority of existing OLDS appear to be functioning properly with no indications of widespread problems. The OLDS functioning problems noted during the survey were limited to three properties, and it was determined that there were viable OLDS solutions that would be available to address the specific problems noted at each of the three properties.

The conclusions reached in conjunction with the OLDS Survey that was performed within the Dolington Area were not as favorable with regard to the continuing use of potential OLDS alternatives for addressing the long-term sewage disposal needs of the area as compared to the Taylorsville Area. A relatively higher number of properties within the Dolington Area were noted as having periodic problems with the functioning of their primary OLDS thereby relying on supplemental holding tanks to address seasonal conditions. Additionally, a number of properties are served by OLDS that were constructed in the 1950s – 1960s that would not meet current PA DEP design and siting guidelines due to inadequate setbacks/isolation distances, limiting zone restrictions, etc., which would also affect the viability of

potential OLDS solutions in the event future problems develop. Nevertheless, based upon the results of the OLDS Survey, the functioning of existing OLDS within the Dolington Area is being properly managed at this time by the affected property owners in that no widespread indications of OLDS malfunctioning conditions were noted, and the associated groundwater quality evaluation revealed no contamination concerns related to potential OLDS malfunctions.

- The following alternatives were developed to address the short-term and long-term sewage disposal requirements for the two (2) Needs Areas that were identified/evaluated in conjunction with this Plan Update:

1. Taylorsville Area – The short-term sewage disposal needs of this area will be addressed during the Five-Year Planning Period by improving the performance of existing OLDS through water conservation, increased system oversight/maintenance, educating property owners on OLDS use/maintenance and amendment of the Township's OLDS Ordinance to incorporate additional maintenance provisions specific to the Area. Immediate sewage disposal needs will also be addressed by repair and/or replacement of the limited number of OLDS (noted during the OLDS Survey) with operational problems, utilizing potential OLDS solutions with input/assistance from the BCHD. If this short-term approach is found to be effective after five years of implementation, it will be considered to also satisfy the long-term sewage disposal needs of the area for the Ten-Year Planning Period.
2. Dolington Area – The short-term sewage disposal needs of this area for the Five-Year Planning Period can be effectively addressed through water conservation, increased system oversight/maintenance, educating property owners on OLDS use/maintenance and amendment of the Township's OLDS Ordinance to incorporate additional maintenance provisions specific to the Dolington Area. The Township will also provide input to the property owners where the recent OLDS Survey identified operational problems, with regard to potential OLDS solutions with input/assistance from the BCHD.

Upon considering such factors as public and private implementation costs, ongoing operation and maintenance costs/ responsibilities, anticipated reliability/performance, and consistency with prior Township planning/policies, it was determined that Alternative #6; STEP System/ Centralized Treatment System with Stream Discharge Effluent Disposal (Refer to Figure 28) would be the preferred option to address the long-term sewage disposal needs of the Dolington Area.

During the short-term (5 Year) planning period of this Plan Update, the Township is committed to continuing to work to refine the preferred long-term sewage disposal alternative in an effort to reduce currently projected costs that would be imposed on the affected property owners. Subsequently, during the initial stage of the long-term (10 Year) planning period of the Plan Update, the Township will re-assess the currently identified long-term sewage disposal alternatives, identify any new alternatives that may be available based upon changes in current conditions and/or technology that may potentially occur over the short-term planning period, and initiate the administrative, legal, engineering, and

procedural efforts associated with the implementation of the selected long-term sewage disposal alternative for the Dolington Area.

B. Municipal Commitments

Upper Makefield Township has the necessary staff and administrative resources required to continue the existing Sewage Management Program throughout the Township (including the proposed additional requirements for Taylorsville and Dolington Areas) as well as implement the long-term sewage disposal alternatives proposed in conjunction with this Plan Update. Administrative management of Upper Makefield's water and sewer systems and Sewage Management Program is addressed by the Township's Code Enforcement Department. The costs of administration are budgeted annually by the Township at which time future needs are anticipated.

Implementation of the short-term and long-term sewage disposal alternatives discussed herein will be through the existing Township administrative structure and no new departments or authorities will be required.

C. Implementation Schedule

1. Taylorsville Area Implementation Schedule:

Activities associated with the implementation of the selected alternative to address the short-term sewage disposal needs for this area during the Five-Year Planning Period are scheduled to commence immediately after approval of this Plan Update by PADEP. If this short-term approach is found to be effective after five years of implementation, it will continue and will be considered to also satisfy the long-term sewage disposal needs of the area for the Ten-Year Planning Period.

2. Dolington Area Implementation Schedule:

Activities associated with the implementation of the selected alternative to address the short-term sewage disposal needs for this area during the Five-Year Planning Period is scheduled to commence immediately after approval of this Plan Update by PADEP.

During the short-term (5 Year) planning period of this Plan Update, the Township is committed to continuing to work to refine the preferred long-term sewage disposal alternative in an effort to reduce currently projected costs that would be imposed on the affected property owners. Subsequently, during the initial stage of the long-term (10 Year) planning period of the Plan Update, the Township will re-assess the currently identified long-term sewage disposal alternatives, identify any new alternatives that may be available based upon changes in current conditions and/or technology that may potentially occur over the short-term planning period, and initiate the administrative, legal, engineering, and procedural efforts associated with the implementation of the selected long-term sewage disposal alternative for the Dolington Area. It is projected that a long-term sewage disposal alternative for the Dolington Area will be accomplished within the Ten-Year Planning Period, by January 2026.



UPPER MAKEFIELD TOWNSHIP Figure #10 - Wetlands & Hydric Soils Map

UPPER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

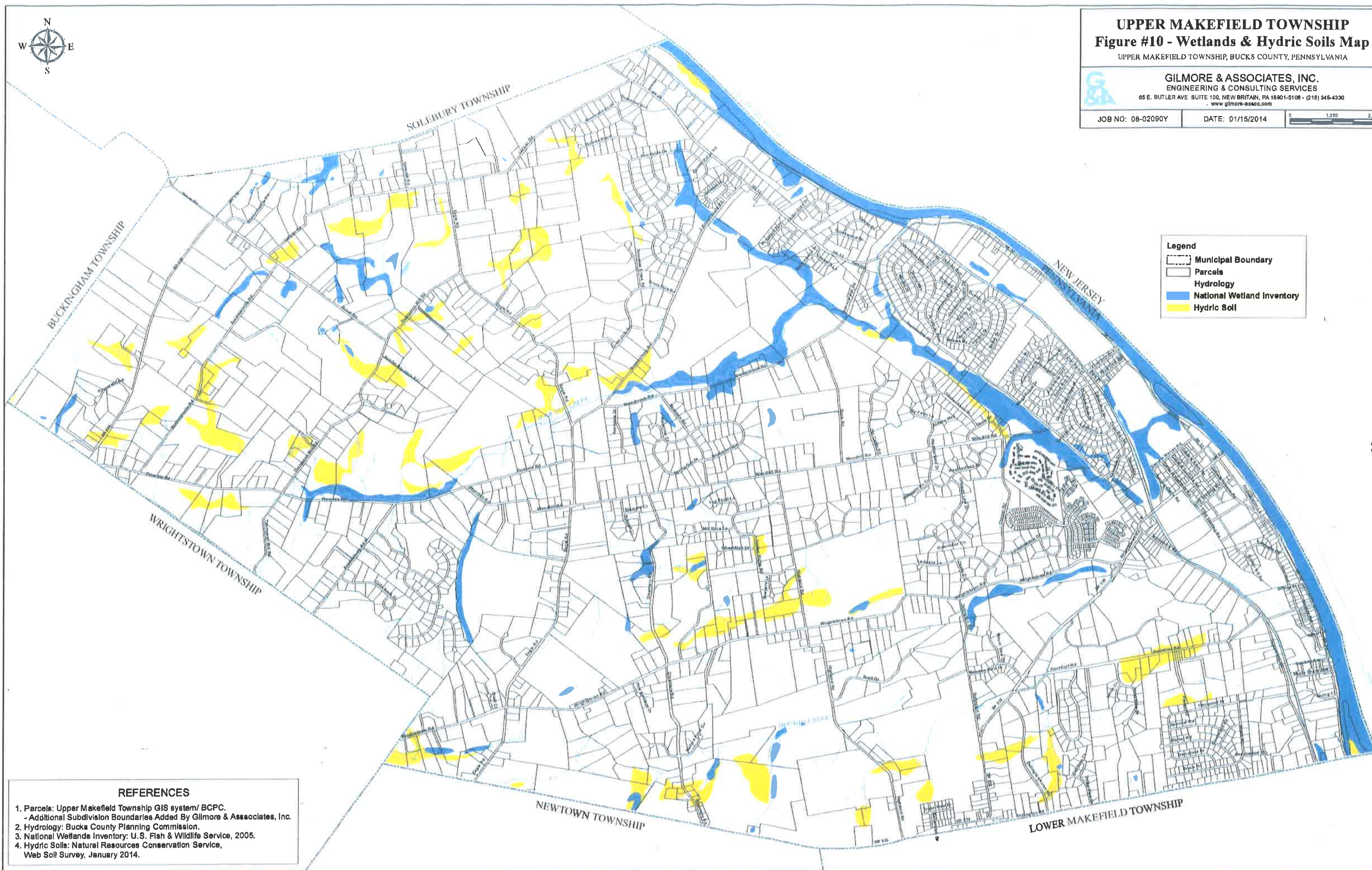
65 E. BUTLER AVE SUITE 100, NEW BRITAIN, PA 18901-5108 - (215) 245-4330
www.gilmore-assoc.com

JOB NO: 08-02090Y

DATE: 01/15/2014

0 1,250 2,500
Feet

- Legend**
- Municipal Boundary
 - Parcels
 - Hydrology
 - National Wetland Inventory
 - Hydric Soil



REFERENCES

1. Parcels: Upper Makefield Township GIS system/ BCPC.
- Additional Subdivision Boundaries Added By Gilmore & Associates, Inc.
2. Hydrology: Bucks County Planning Commission.
3. National Wetlands Inventory: U.S. Fish & Wildlife Service, 2005.
4. Hydric Soils: Natural Resources Conservation Service,
Web Soil Survey, January 2014.

UPPER MAKEFIELD TOWNSHIP
ACT 537 SEWAGE FACILITIES PLAN UPDATE
SEWAGE DISPOSAL NEEDS ASSESSMENT AREAS
PER
BUCKS COUNTY HEALTH DEPARTMENT

TAYLORSVILLE AREA

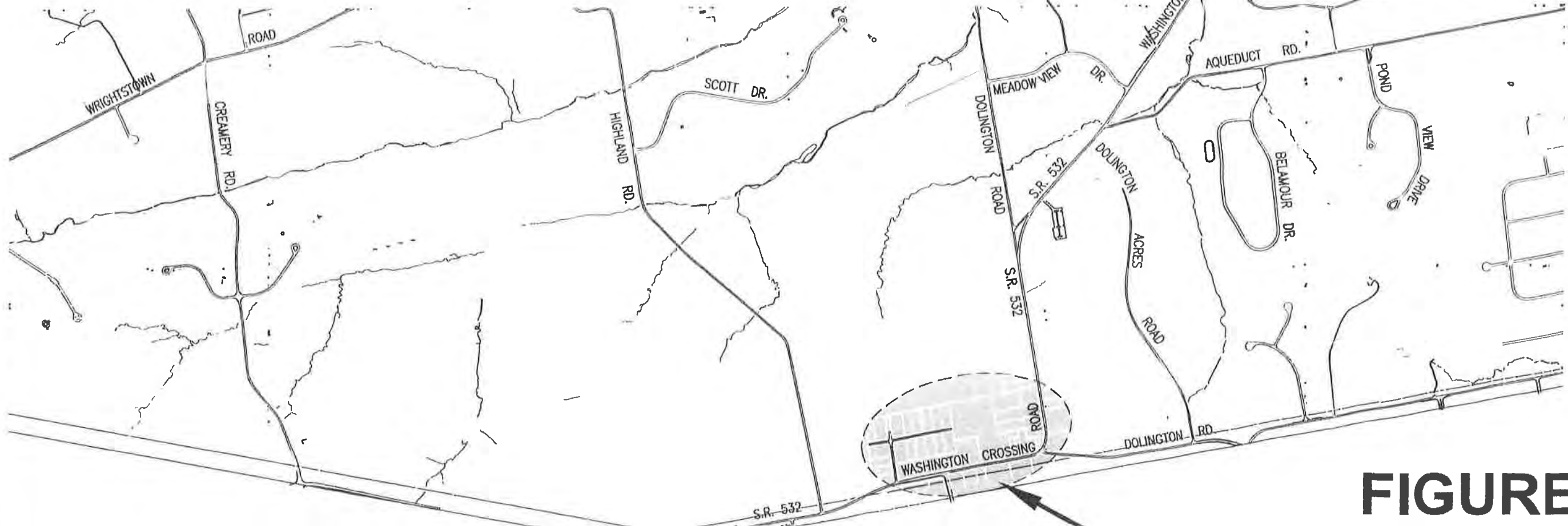
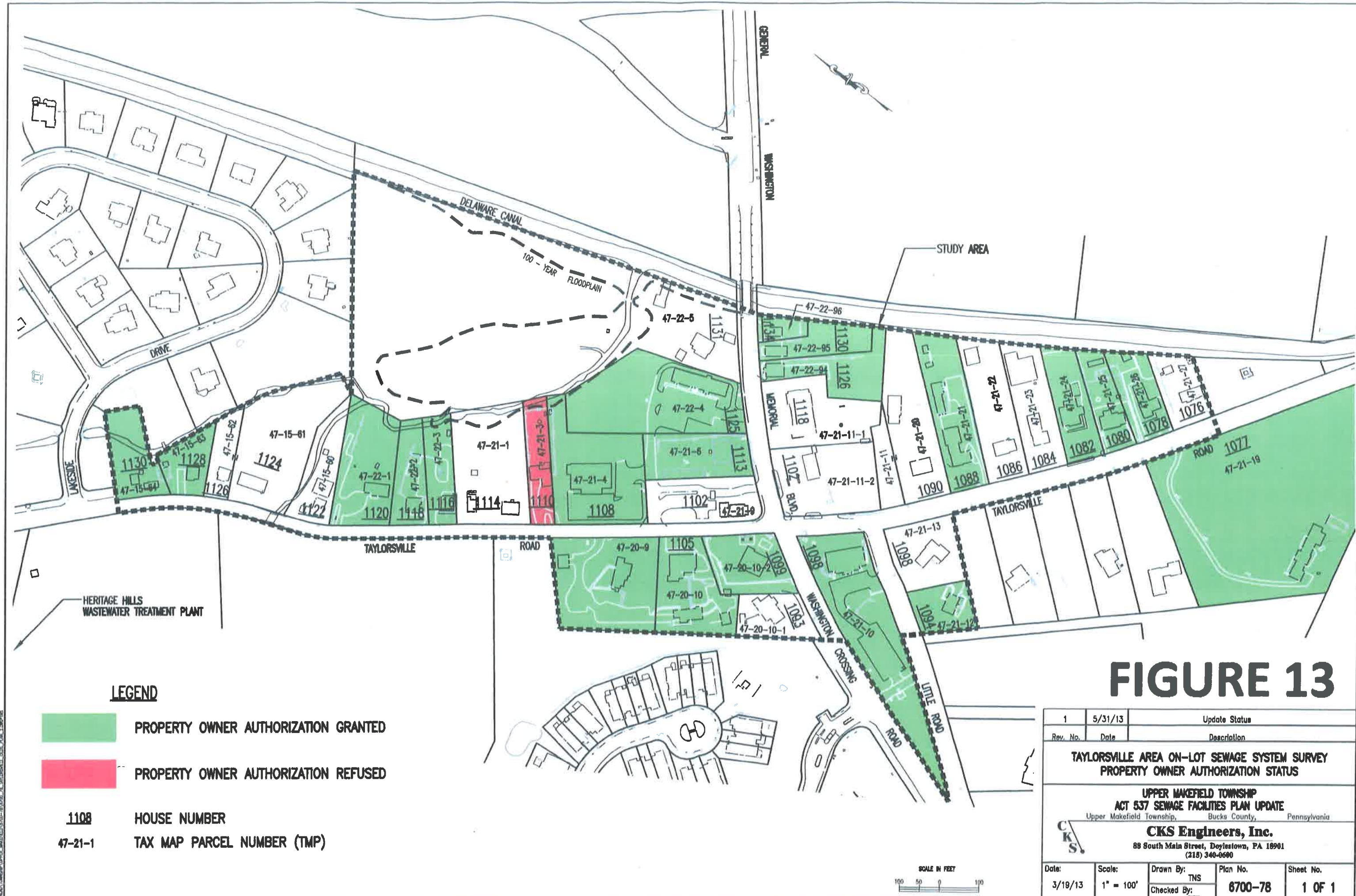
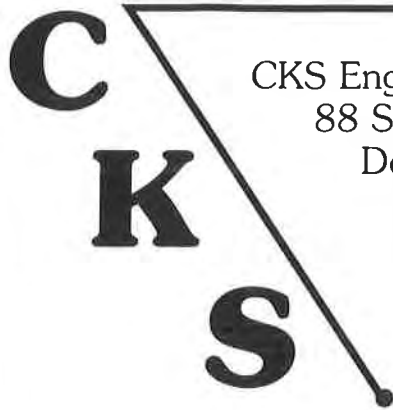


FIGURE 12
DOLINGTON AREA





CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

November 6, 2014
Ref: #6700-78

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Attention: Doug McLearen, Chief, Division of Archeology and Protection

Reference: Township of Upper Makefield, Bucks County
Act 537 Sewage Facilities Plan Update
Pennsylvania Historical and Museum Commission Notification

Dear Mr. McLearen:

On behalf of Upper Makefield Township, CKS Engineers, Inc. is pleased to submit this letter and the enclosed materials notifying the Pennsylvania Historical and Museum Commission of the above-referenced Act 537 Plan Update. The materials enclosed as part of this notification include a notification form and package of exhibits illustrating the Needs Areas that were evaluated in conjunction with the Act 537 Plan Update. The Needs Areas are identified as the Taylorsville and Dolington Areas.

The short-term sewage disposal needs of the identified Needs Areas will be addressed by improving performance of existing On-Lot Sewage Disposal Systems ("OLDS") through the promotion of water conservation, increased system oversight/maintenance, and public education concerning system operation and maintenance requirements. The same approach will be continued to address the long-term sewage disposal needs within the Taylorsville Area if current OLDS operating conditions do not change. The preferred alternative to address the long-term sewage disposal needs of the Dolington Area includes the installation of a Step System/Centralized Treatment System with Stream Discharge Effluent Disposal. Please note that no buildings over 40 years old will be disturbed, destroyed or modified by the implementation of any of the short-term or long-term sewage disposal alternatives proposed under this Act 537 Plan Update.

I trust this letter and the enclosed materials will enable you to determine if any action is required by the Commission. If you have any questions or require any additional information, please do not hesitate to contact our office. Thank you for your cooperation.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants



Charles E. Corey, P.E.

CEC/klk
Enclosures

cc: David Nyman, Township Manager
Thomas F. Zarko, CKS Engineers, Inc.
✓ File

7013 2630 0001 0166 8859

U.S. Postal Service™	
CERTIFIED MAIL™ RECEIPT	
<i>(Domestic Mail Only; No Insurance Coverage Provided)</i>	
For delivery information visit our website at www.usps.com	
OFFICIAL USE	
Postage	\$ 1.61
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.61
Postmark Here	
Sent To Doug McLearen, Chief	
PA Historical & Museum Commission	
Bureau for Historic Preservation	
Commonwealth Keystone Building	
City, State, ZIP+4 400 North Street	
Harrisburg, PA 17120	
PS Form 3800, August 2006	
See Reverse for Instructions	

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none">■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.■ Print your name and address on the reverse so that we can return the card to you.■ Attach this card to the back of the mailpiece, or on the front if space permits.		A. Signature <input checked="" type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee	
1. Article Addressed to:		B. Received by (Printed Name) C. Date of Delivery	
Doug McLearen, Chief		NOV 10 2014	
PA Historical & Museum Commission		D. Is delivery address different from item 1? <input type="checkbox"/> Yes	
Bureau for Historic Preservation		If YES, enter delivery address below: <input type="checkbox"/> No	
Commonwealth Keystone Building		3. Service Type	
400 North Street		<input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Priority Mail Express™	
Harrisburg, PA 17120		<input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise	
		<input type="checkbox"/> Insured Mail <input type="checkbox"/> Collect on Delivery	
2. Article Number		4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
(Transfer from service label)			
PS Form 3811, July 2013		Domestic Return Receipt	

1. PROJECT INFORMATION

Project Name: **Taylorsville Area - Upper Makefield TWP, Act 537**

Date of review: **10/29/2014 9:40:21 AM**

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

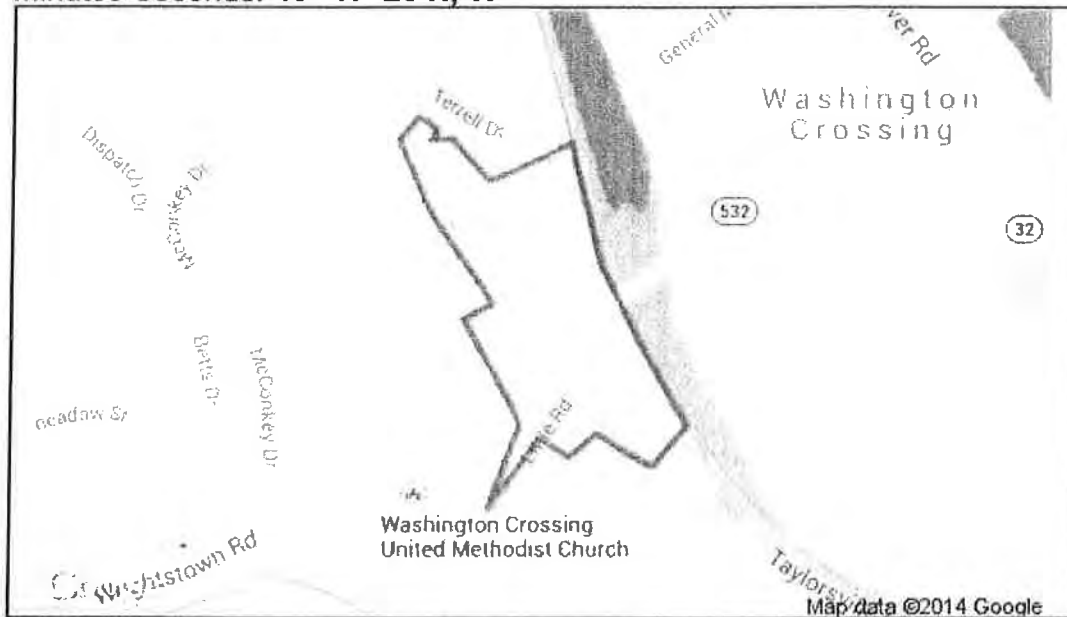
Project Area: **37.3 acres**

County: **Bucks Township/Municipality: Upper Makefield**

Quadrangle Name: **LAMBERTVILLE ~ ZIP Code: 18977**

Decimal Degrees: **40.290595 N, -74.879442 W**

Degrees Minutes Seconds: **40° 17' 26 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	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

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.

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .

Your answer is: **4. Someone qualified to identify and delineate wetlands has investigated the site, and determined that wetlands ARE located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)**

Q2: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats

Your answer is: **1. Yes**

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: Further review of this project is necessary to resolve the potential impacts(s). Please send

project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

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.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of *Minimum Materials to be submitted:*

- ☒ **SIGNED** copy of this Project Environmental Review Receipt
- ☒ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
- ☒ Project location information (name of USGS Quadrangle, Township/Municipality, and County)
- ☒ USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.

- ☒ A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
- ☒ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
- ☒ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing

the location of all project features, as well as wetlands and streams

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: CHARLES COREY
Company/Business Name: CKS ENGINEERS, INC
Address: 22 S. MAIN STREET
City, State, Zip: DOYLESTOWN, PA 18901
Phone: (215) 340-0800 Fax: ()
Email: CCOREY@CKSENGINEERS.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.

Charles Corey
applicant/project proponent signature

10/30/2014
date



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF 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 Township of Upper MakefieldStreet Address 1076 Eagle RoadCity Newtown State PA Zip 18940Telephone Number 215-968-3340Project Title Act 537 Sewage Facilities Plan, Taylorsville Area

SECTION B. LOCATION OF PROJECT

Municipality Upper Makefield County Name Bucks DEP County Code 09

SECTION C. PERMITS OR APPROVALS

Name of Specific DEP Permit or Approval Requested: Act 537, Planning approval

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) _____
☐ 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

Bucks County Conservation District 215-345-7577

SECTION G. CONSULTANT

Consultant, if applicable CKS Engineers, Inc.Street Address 88 South Main StreetCity Doylestown State PA Zip 18901Telephone Number 215-340-0600

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.


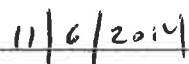
Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission.

REQUESTED

Attach photographs of any building over 40 years old.

Attach site map, if available.

SECTION I. SIGNATURE BLOCK

 Applicant's Signature	 Date of Submission of Notice to PHMC
--	--

1. PROJECT INFORMATION

Project Name: **Dolington Area - Upper makefield TWP, Act 537**

Date of review: **10/29/2014 10:16:36 AM**

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

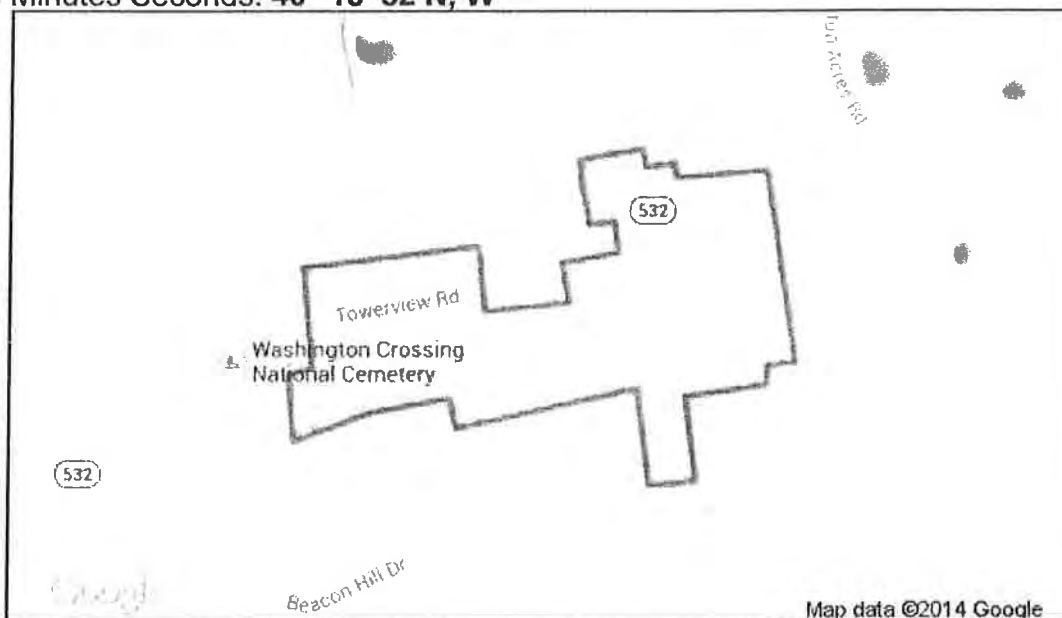
Project Area: **69.8 acres**

County: **Bucks Township/Municipality: Lower Makefield, Upper Makefield**

Quadrangle Name: **LAMBERTVILLE ~ ZIP Code: 18940**

Decimal Degrees: **40.264498 N, -74.898367 W**

Degrees Minutes Seconds: **40° 15' 52 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.

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PA Game Commission

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

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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>.

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17105-8552
Fax:(717) 772-0271

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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: CHARLES COREY
Company/Business Name: CKS ENGINEERS, INC
Address: 88 S. MAIN STREET
City, State, Zip: DMLESTOWN PA 18901
Phone: (215) 340-0600 Fax: ()
Email: CCOREY@CKSENGINEERS.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.

Ch C. Corey
applicant/project proponent signature

10/30/2014
date

**CULTURAL RESOURCE NOTICE****Read the instructions before completing this form.****SECTION A. APPLICANT IDENTIFIER**Applicant Name Township of Upper MakefieldStreet Address 1076 Eagle RoadCity Newtown State PA Zip 18940Telephone Number 215-968-3340Project Title Act 537 Sewage Facilities Plan, Dolington Area**SECTION B. LOCATION OF PROJECT**Municipality Upper Makefield County Name Bucks DEP County Code 09**SECTION C. PERMITS OR APPROVALS**Name of Specific DEP Permit or Approval Requested: Act 537, Planning approval

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) _____
☐ Federal: (Name) _____
 ☐ Other: (Name) _____

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- 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

Bucks County Conservation District 215-345-7577**SECTION G. CONSULTANT**Consultant, if applicable CKS Engineers, Inc.Street Address 88 South Main StreetCity Doylestown State PA Zip 18901Telephone Number 215-340-0600

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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.

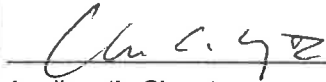
Attach a narrative description of the proposed activity.

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

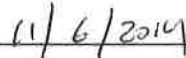
REQUESTED

Attach photographs of any building over 40 years old.

Attach site map, if available.

SECTION I. SIGNATURE BLOCK

Applicant's Signature



Date of Submission of Notice to PHMC



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

November 17, 2014

REV 11/20
CSC

Charles E. Corey, P.E.
CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901

TO EXPEDITE PERMIT USE
BHP REFERENCE NUMBER

Re: File No. ER 2015-0238-011-A
DEP Act 537, Planning Approval: Taylorsville &
Dolington Areas Short-Term Sewage Disposal Needs
Upper Makefield Twp., Berks Co.

Dear Mr. Corey:

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.

We are unable to proceed with our review until the additional information on the attached sheet is provided.

If you need further information regarding archaeological resources, please contact Mark Shaffer at (717) 783-9900. If you need further information concerning historic structures, please contact Emma Diehl at (717) 787-9121.

Sincerely,

Douglas C. McLearn, Chief
Division of Archaeology &
Protection

cc: Township of Upper Makefield, 1076 Eagle Road, Newtown, PA 18940
DEP, Southeast Regional Office

Attachment
DCM/tmw

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION
BUREAU FOR HISTORIC PRESERVATION
<http://phmc.info/historicpreservation>

ADDITIONAL INFORMATION REQUEST SHEET

(Revised May 2014)

Please submit checked items for PHMC-BHP to proceed with project review.

A. FUNDING/PERMITTING/LICENSING/APPROVAL PROGRAM

- ☐ 1. Identify the Federal/State Agency and funding program or permit/license

B. PROJECT DESCRIPTION

- ☒ 1. Narrative description of the project and related actions resulting from the project
☐ 2. Proposed boundary of the project's Area of Potential Effect (APE). Provide Justification of APE. Remember to consider visual impacts
☒ 3. Architectural plans of existing conditions (as-built or as-found)
☐ 4. Preliminary architectural drawings or plans (floor plans, elevations, specifications)
☐ 5. Work write-ups
☐ 6. Site plans of existing conditions
☒ 7. Site plans of proposed development
☒ 8. For linear project: highlight any portion of the alignment that is located outside of current road/railroad or buried utility Right-of-Way (ROW)

C. PROJECT LOCATION

- ☒ 1. U.S.G.S 7.5 min. series quadrangle with the **PROJECT LOCATION(S) AND LIMITS CLEARLY MARKED** using a colored pen. Please include the name of the quadrangle. Map must include nearest place name.
☐ 2. Street map (for properties in densely populated areas)
☐ 3. Street map showing location and historic district boundaries (if appropriate)
☐ 4. Street address of property
☐ 5. Municipality in which project is located (not mailing address location)

D. PROJECT SIZE (supply as appropriate for project)

- ☒ 1. Acreage of project area
☐ 2. Miles/feet of project area and Right-of-Way (ROW) width
☒ 3. Extent and nature of ground disturbing activities (i.e. grading, trenching, foundation excavation)

E. PHOTOGRAPHS (No photocopies. Clear, color, high resolution digital images preferred)

- ☒ 1. Exterior of all building(s)/structures in project area
☐ 2. Interior of building(s) in project area
☐ 3. Interior of building(s) illustrating the proposed work areas/features
☐ 4. Buildings, streetscape, setting of features in Area of Potential Effect (APE)
☐ 5. Views of project area

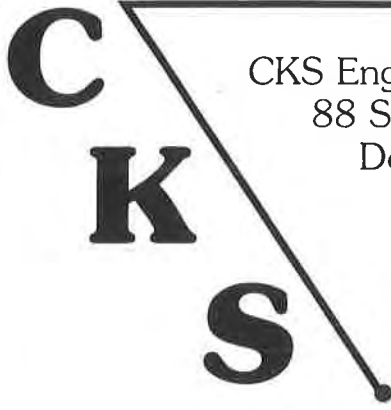
F. CULTURAL RESOURCE IDENTIFICATION

- ☐ 1. Pennsylvania Historic Resource Survey Form(s) for all properties 50 years or older within the Area of Potential Effect (APE) (see our website at: <http://phmc.info/historicpreservation>, Select "Forms and Guidance")
☐ 2. Historical background, context report, information for historic resources identified
Apply this context, available on our website: _____

G. EFFECTS

- ☐ 1. How will the project affect building(s) over 50 years old?
☐ 2. National Register listed/eligible property(s) exist in project area. How will the project affect this historic property(s)?

(OVER)



CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

December 15, 2014
Ref: #6700-78

Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd floor
400 North Street
Harrisburg, PA 17120-0093

Attention: Douglas C. McLearen, Chief
Division of Archaeology and Protection

Reference: File No. ER 2015-0238-011-A
Review for DEP Act 537 Planning Approval: Taylorsville & Dolington Areas
Short-term Sewage Disposal Needs
Upper Makefield Township, Bucks County

Dear Mr. McLearen:

On behalf of Upper Makefield Township, we are hereby responding to the Pennsylvania Historical and Museum Commission, Bureau for Historic Preservation ("PHMC") request for supplemental information concerning the Township's Draft Act 537 Sewage Facilities Plan Update dated November 6, 2014 ("Draft Plan Update"). Our responses to the PHMC's request for supplemental information are presented below in the same order as noted on the PHMC Additional Information Request Sheet (copy attached):

- B.1: A copy of the Executive Summary section of the Draft Plan Update, which provides a narrative description of the proposed actions to be taken during the short-term (5 year) and long-term (10 year) planning periods is attached.

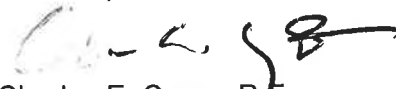
Relative to the above, as outlined within the attached Executive Summary, no public improvements construction is proposed within either the Taylorsville or Dolington Areas over the short-term planning period of the Plan Update. The short-term sewage disposal needs of the aforementioned Areas will be addressed by improved performance of existing On-Lot Sewage Disposal Systems ("OLDS") through the promotion of water conservation, increased system oversight/maintenance, and public education concerning system operation and maintenance requirements.

- B.7: Figure 12 from the Draft Plan Update, which illustrates the locations of the Taylorsville and Dolington Areas, is attached.

- B.8: As in the above, no public improvements construction is proposed to be performed within the Taylorsville and Dolington Areas during the short-term planning period of the Draft Plan Update. Additionally, it is not anticipated that any public improvements construction will be performed within the Taylorsville Area during the long-term planning period of the Draft Plan Update. However, it is expected that a STEP System/ Centralized Treatment System will potentially be installed within the Dolington Area during the long- term planning period of the Draft Plan Update. All of the public improvements construction associated with this project will be located within existing roadway rights-of-way as illustrated on Figure 28 taken from the Draft Plan Update (copy attached).
- C.1: Attached is a copy of a USGS map illustrating the locations of both the Taylorsville and Dolington Areas.
- D.1: The approximate acreage of the Taylorsville and Dolington Areas is 38.7 ac. and 63.9 ac., respectively.
- D.3: As noted under item B.8 above, no public improvements construction is proposed within either the Taylorsville or Dolington Areas within the short-term planning period of the Plan Update.
- E.1: As noted under item B.8 above, no public improvements construction is proposed within either the Taylorsville or Dolington Areas during the short-term planning period of the Draft Plan Update, and no buildings/structures in the project area will be affected by the public improvements construction that is to be performed within the public rights-of-way of the Dolington Area within the long-term planning period.

We trust that the information presented above and enclosed herein addresses the PHMC's request for supplemental information concerning the Draft Plan Update. However, if any additional information is needed for completion of the PHMC review, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants



Charles E. Corey, P.E.

CEC/klk
Enclosures

cc: David Nyman, Interim Township Manager
Thomas F. Zarko, CKS Engineers, Inc.
File



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

12 January 2015

Charles E. Corey
CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901

RE: ER No. 2015-0238-011-B
DEP Act 537 Planning Approval: Taylorsville &
Dolington Areas Short-Term Sewage Disposal
Upper Makefield Township, Bucks County

Dear Mr. Corey:

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.

Archaeological Resources

In our opinion, no archaeological resources will be affected by this project.

Historic Structures

Based on the information provided, in our opinion, no historic buildings, structures, districts, and/or objects will be affected by this project.

If you need further information regarding archaeological resources, please contact Mark Shaffer at (717) 783-9900.
If you need further information concerning historic structures, please contact Emma Diehl at (717) 787-9121.

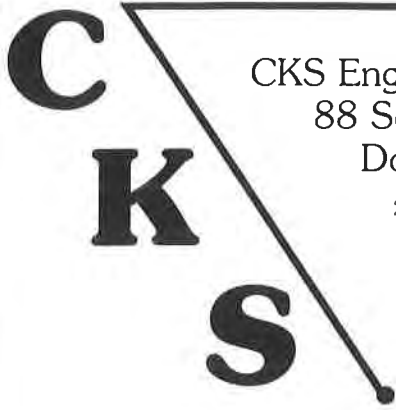
Sincerely,

Douglas C. McLearn, Chief
Division of Archaeology and Protection

DCM/ekd



Pennsylvania Historical & Museum Commission
Tom Corbett, Governor • Andrew E. Masich, Chairman • James M. Vaughan, Executive Director



CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

November 10, 2014
Ref: #6700-78

Upper Makefield Township
1076 Eagle Road
Newtown, PA 18940

Attention: David Kuhns, Director of Planning and Zoning

Reference: Upper Makefield Township
Act 537 Sewage Facilities Plan Update

Dear Dave:

As directed by the Board of Supervisors, we have initiated the distribution of the latest draft of the Township's Act 537 Sewage Facilities Plan Update to all applicable reviewing agencies for review/comment. One of the agencies required to review the Plan Update is the Township's Planning Commission. To that end, please distribute the enclosed Plan Update documents to the Planning Commission Members for their review/comment.

Please note that the Planning Commission must review and provide comments concerning the enclosed draft Plan Update document within 60 days from receipt of this letter in accordance with PA DEP requirements. We request that any comments made by the Planning Commission be sent to my office so that we can prepare an associated response, which will be incorporated into the final version of the Plan Update document.

If you have any questions, or if the Planning Commission would like a representative from my office to attend an upcoming meeting to present/discuss the enclosed Plan Update document, please let me know.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak
Enclosure

cc: David Nyman, Interim Township Manager
Mary Eberle, Esq., Township Solicitor (w/encl.)
✓ File

Upper Makefield Township

1076 Eagle Road | Newtown, PA 18940 | p 215.968.3340 | f 215.968.9228 | www.uppermakefield.org

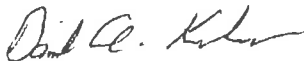
December 4, 2014

Upper Makefield Township Planning Commission Review and Recommendations for the Act 537 Sewage Facilities Plan Update Meeting Minutes

At its December 3, 2014 meeting, the Upper Makefield Township Planning Commission reviewed and recommended the approval of the Draft Act 537 Plan Update dated November 6, 2014 subject to the following conditions:

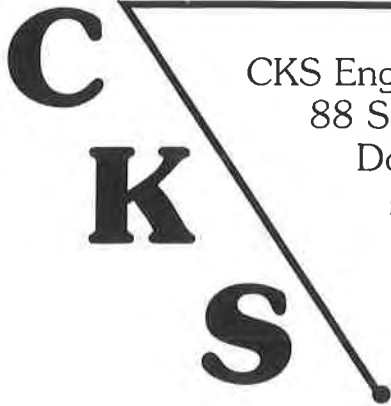
1. Alternative #2; LPSS to Gray Tract WWTP be the preferred long term sewage disposal alternative for the Dolington Area, and all affected properties be required to immediately connect to the sewer system. The Planning Commission was concerned about the impact that the current preferred alternative (Alternative #6: STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal) would have on the properties in the immediate vicinity of the proposed plant installation location.
2. The language used in Section VI. D. of the Draft Plan Update (page 112) be modified to specifically state that the costs associated with the implementation of the long term sewage disposal alternative that is ultimately selected for the Dolington Area be wholly borne by the affected property owners, unless offset by any available grant funding (at no cost to the Township.)
3. The Planning Commission recommended that a mechanism be developed to alert potential purchasers of homes within the Dolington Area of the long term sewage disposal alternative implementation/costs, subject to the approval of the Township solicitor.

Respectfully Submitted,



David A. Kuhns
Director of Planning and Zoning
Upper Makefield Township





CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

December 9, 2014
Ref: #6700-78

Upper Makefield Township Planning Commission
1076 Eagle Road
Newtown, PA 18940

Attention: David A. Kuhns, Director of Planning and Zoning

Reference: Upper Makefield Township
Draft Act 537 Sewage Facilities Plan Update
Upper Makefield Township Planning Commission Comments

Dear Mr. Kuhns:

On behalf of Upper Makefield Township, we are hereby responding to the Upper Makefield Township Planning Commission's comments regarding the Township's Draft Act 537 Sewage Facilities Plan Update dated November 6, 2014 ("Draft Plan Update"). Our responses to the Planning Commission's comments are presented below in the same order as outlined within the Upper Makefield Township Planning Commission Meeting Minutes, dated December 4, 2014 (copy attached):

1. It is acknowledged that the Township Planning Commission has recommended that Alternative #2; Low Pressure Sewer System to Gray Tract Wastewater Treatment Plant be the preferred alternative to address the long-term sewage disposal needs of the Dolington Area, and requirements for immediate connections to the associated sanitary sewer system be imposed on the affected property owners.

Relative to this matter, it should be noted that the Board of Supervisors considered a number of factors, including public and private implementation costs, ongoing operation and maintenance costs/responsibilities, anticipated reliability/performance and consistency with prior Township planning/policies prior to determining that Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal should be the preferred option to address the long-term sewage disposal needs of the Dolington Area. In an effort to minimize the impact of the implementation of this alternative on properties in the immediate vicinity of the proposed Centralized Treatment System installation location, substantial screening via a combination of fencing and buffer plantings will be installed around the perimeter of the treatment system site as graphically illustrated on Figure 28 of the Draft Plan Update. Additionally, as noted in the Draft Plan Update, over the short-term planning period, the Township has committed to continuing to work to further refine the preferred long-term sewage disposal alternative, which could potentially result in a modified treatment system design/layout, and could further reduce the impact on surrounding properties.

As to the issue of immediate connections, the Board of Supervisors noted that the potential for deferred connections that would be available under the preferred long-term sewage disposal alternative identified in the Draft Plan Update (Alternative #6) would be beneficial, as it would afford property owners with properly functioning on-lot sewage disposal systems flexibility in the timing of a connection and payment of the associated costs. However, a final policy decision concerning potential deferred connections will not be made until such time as the selected long-term sewage disposal alternative is implemented during the long-term planning period of the Draft Plan Update.

2. As requested by the Township Planning Commission, the second paragraph of Section VI.D of the Draft Plan Update will be revised prior to presentation to the Board of Supervisors for review/approval as follows: "The funding of the public components of the sanitary sewer facility infrastructure proposed in conjunction with the potential long-term sewage disposal alternatives developed as part of this Plan Update for the Dolington Area will be imposed on the affected property owners via assessments and/or tapping fees. However, the Township will continuously monitor the availability of potential Federal, State, or local grant programs to address all or portions of the aforementioned funding requirements in an effort to reduce the costs to the affected property owners, but will not require the expenditure of Township Funds."
3. As requested by the Planning Commission, the Township Solicitor will evaluate the legality of developing a mechanism to alert potential purchasers of homes within the Dolington Area of the long-term sewage disposal alternative implementation/costs. However, this will not impact any aspect of the Draft Plan Update.

We trust that the information presented above adequately responds to the comments contained within the Upper Makefield Township Planning Commission review comments concerning the Draft Plan Update as outlined within the December 4, 2014 Planning Commission Meeting Minutes.

Thank you for your input concerning the Draft Plan Update. If you have any questions or require any clarification of the responses detailed herein, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak

Enclosure

cc: David Nyman, Interim Township Manager
✓ File

Upper Makefield Township

1076 Eagle Road | Newtown, PA 18940 | p 215.968.3340 | f 215.968.9228 | www.uppermakefield.org

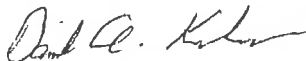
December 4, 2014

Upper Makefield Township Planning Commission Review and Recommendations for the Act 537 Sewage Facilities Plan Update Meeting Minutes

At its December 3, 2014 meeting, the Upper Makefield Township Planning Commission reviewed and recommended the approval of the Draft Act 537 Plan Update dated November 6, 2014 subject to the following conditions:

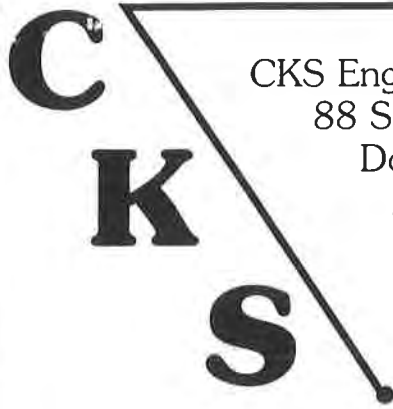
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2. The language used in Section VI. D. of the Draft Plan Update (page 112) be modified to specifically state that the costs associated with the implementation of the long term sewage disposal alternative that is ultimately selected for the Dolington Area be wholly borne by the affected property owners, unless offset by any available grant funding (at no cost to the Township.)
3. The Planning Commission recommended that a mechanism be developed to alert potential purchasers of homes within the Dolington Area of the long term sewage disposal alternative implementation/costs, subject to the approval of the Township solicitor.

Respectfully Submitted,



David A. Kuhns
Director of Planning and Zoning
Upper Makefield Township





CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

November 10, 2014
Ref: #6700-78

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Bucks County Planning Commission
Neshaminy Manor Center
1260 Almshouse Road
Doylestown, PA 18901

Attention: Lynn T. Bush, Executive Director

Reference: Township of Upper Makefield, Bucks County
Act 537 Sewerage Facilities Plan Update
Review Request

Dear Ms. Bush:

On behalf of the Township of Upper Makefield, we are enclosing herein a draft copy of the Upper Makefield Township Act 537 Sewerage Facilities Plan Update. In accordance with the requirements of the Pennsylvania Department of Environmental Protection, we request the Planning Commission's review of this Plan Update. Please provide your comments and/or approval, in writing, addressed to the Township of Upper Makefield, with a copy sent to our office.

If you or your staff have any questions during your review, please do not hesitate to contact me. Thank you for your cooperation.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak
Enclosure

cc: David Nyman, Interim Township Manager
✓File

7013 2630 0001 0166 8835

U.S. Postal Service™ CERTIFIED MAIL™ RECEIPT <i>(Domestic Mail Only; No Insurance Coverage Provided)</i>	
For delivery information visit our website at www.usps.com	
OFFICIAL USE	
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Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 11.49
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Sent To: Lynn T. Bush, Executive Director Bucks County Planning Commission Street, Apt. No., or PO Box No.: Neshaminy Manor Center 1260 Almshouse Road City, State, ZIP+4: Doylestown, PA 18901	
PS Form 3800, August 2006 See Reverse for Instructions	

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature X <div style="text-align: right;"> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee </div>
1. Article Addressed to: Lynn T. Bush, Executive Director Bucks County Planning Commission Neshaminy Manor Center 1260 Almshouse Road Doylestown, PA 18901	B. Received by (Printed Name) <div style="border: 1px solid black; padding: 5px; display: inline-block;"> MAILED County of Bucks 55 E. Court Street Doylestown, PA 18901 </div> C. Date of Delivery 7/10/13
2. Article Number <i>(Transfer from service label)</i>	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
3. Service Type <input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Priority Mail Express™ <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> Collect on Delivery	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
7013 2630 0001 0166 8835	



BUCKS COUNTY PLANNING COMMISSION

The Almshouse Neshaminy Manor Center 1260 Almshouse Road
Doylestown, Pennsylvania 18901 215.345.3400 FAX 215.345.3886
E-mail: bcpc@co.bucks.pa.us

COUNTY COMMISSIONERS:

Robert G. Loughery, *Chairman*
Charles H. Martin, *Vice Chairman*
Diane M. Ellis-Marseglia, *LCSW*

PLANNING COMMISSION:

Robert M. Pellegrino, *Chairman*
David R. Nyman, *Vice Chairman*
Walter S. Wydro, *Secretary*
Joseph A. Cullen, *Esq*
James J. Dowling
Raymond W. Goodnoc
Edward Kisselback
Carol A. Pierce
Evan J. Stone

Lynn T. Bush
Executive Director

December 3, 2014
BCPC #47-14-WS1

MEMORANDUM

TO: Upper Makefield Township Board of Supervisors
Upper Makefield Township Planning Commission

FROM: Bucks County Planning Commission

SUBJECT: Proposal for an Update to the Official Act 537 Sewage Facilities Plan
Applicant: Board of Supervisors
Received: November 12, 2014
Hearing Date: Not Set

In accordance with the provisions of the Pennsylvania Sewage Facilities Planning Act (Act 537) and Section 304 of the Pennsylvania Municipalities Planning Code, this proposal was sent to the Bucks County Planning Commission for review. The following review was prepared by the staff and endorsed by the Bucks County Planning Commission at its meeting held on December 3, 2014.

GENERAL INFORMATION

Proposed Action: Update the official Act 537 Sewage Facilities Plan of Upper Makefield Township. The purpose of the plan is to comply with Pennsylvania Department of Environmental Protection requirements under Act 537, the Pennsylvania Sewage Facilities Act, with respect to township-wide sewage facilities planning. The plan analyzes the existing sewage flow characteristics in the Township and uses information relative to known proposed development to determine the ability of existing sewage facilities to meet future collection, conveyance, treatment, and disposal needs. The plan is intended to be a tool for the Township to use in the land development process to determine the most effective and environmentally sound method of wastewater management throughout the Township, including both sewer and non-sewered areas.

The draft Act 537 plan includes, in Appendix D, the Upper Makefield Township Ordinance No. 295 regulating the management and maintenance of individual and community on-lot sanitary sewage disposal systems.

COMMENTS

We commend the Township officials for undertaking the update of the Township's official sewage facilities plan. The plan is comprehensive, well-prepared, and contains informative maps. It explains past Act 537 planning and describes the Township's sewage facilities planning issues in a clear and concise presentation. The plan also provides an analysis of proposed alternatives to address the short and long-term sewage disposal needs within the Taylorsville and Dolington areas of the Township, which are identified in the plan as being areas with histories of on-lot disposal systems functioning problems. We note the following issues for the Township's consideration:

1. **Wastewater facilities needs**—Upper Makefield Township relies primarily on individual, on-lot sewage disposal systems, supplemented by several relatively small private and/or community sewage treatment plants, to serve its wastewater needs. According to this plan, this will continue in the future. The plan identifies a total of 295 lots proposed over the next 10 years. Of these, 35 are proposed for individual on-lot disposal systems, and an additional 260 lots are proposed to be served by community on-lot systems.

Based on the information contained in the plan, the combination of individual systems and community systems should be adequate for handling the anticipated wastewater needs of the Township.

2. **Selected alternatives**—The plan identified and analyzed seven different alternatives for the Township as a whole based on anticipated growth, zoning regulations, soil suitability, and natural resources resource features. The plan recommends continued reliance on two of these alternatives, continued use of existing sewage facilities and individual on-lot disposal systems.

The plan also identifies the Taylorsville and Dolington areas of the Township as having problems with the functioning of existing on-lot sewage disposal systems (OLDS). For each of these areas, the plan identified and analyzed different alternatives and recommends short-term (5-year planning period) and Long-Term (10-year planning period) alternatives within these areas. Specifics for each planning area include:

Taylorsville

Short-term: Improve the performance of existing OLDS through water conservation, increased system oversight and maintenance, educational outreach to property owners, and amendment of the Township's OLDS ordinance to incorporate additional maintenance provisions specific to this area.

Long-term: If the short-term approach is found to be effective after 5-years of implementation, it will be continued to satisfy the long-term sewage disposal needs of the area.

Dolington

Short-term: Improve the performance of existing OLDS through water conservation, increased system oversight and maintenance, educational outreach to property owners, and amendment of the Township's OLDS ordinance to incorporate additional maintenance provisions specific to this area.

Long-term: Based on a review of Bucks County Health Department (BCHD) records, input received from BCHD representatives, and an overall evaluation of properties including soil

probe evaluations and isolation distances, the viability of using replacement OLDS to address the long-term sewage disposal needs within this area is doubtful. Based on this, the plan evaluated six (6) potential alternatives for the long-term needs within the Dolington area and recommends the utilization of STEP System/Centralized Treatment System on each property, which would discharge to a wastewater collection system within the Dolington Area and flow by gravity to a centralized secondary treatment system located within the unimproved portion of the existing Balderston Drive right-of-way. The centralized secondary treatment system would discharge treated effluent to the existing unnamed tributary of Houghs Creek located at the terminus of the right-of-way.

The recommended strategies appear to be sound approaches for addressing the Taylorsville and Dolington areas, and the Township-wide, anticipated future wastewater needs.

3. **Hierarchy of alternatives**—Although the plan provides a detailed description of both the existing types of systems in use in the Township, as well as those allowed by the Pennsylvania Department of Environmental Protection (Pa DEP), the plan does not include a hierarchy of recommended alternatives, but instead indicates that the Pa DEP provide a variety of options that could be used and that the selection of the most appropriate option would be based on site-specific testing performed in conjunction with the OLDS planning and permitting process. As the Township has objectives to protect surface and groundwater resources, we recommend that the Township incorporate a hierarchy of system types which shall be ranked based on their ability to best meet the environmental, financial, and administrative limitations present in the Township. The highest ranking would be given to those systems which provide the greatest potential for groundwater recharge, and which have a proven history of reliability and minimum required maintenance. Developers and/or property owners seeking new permits and/or replacing old malfunctioning systems would be required to submit documentation to confirm that higher ranked options are not feasible prior to choosing a lower ranked option. Language of this new section might include language similar to the following:

- A. All lots, existing or proposed, must employ individual or community sewage disposal. The highest priority method of sewage disposal set listed in Section B below that can be technically or administratively implemented on the subject property must be utilized. If disposal cannot be provided by a higher-ranked method than proposed, the applicant must submit a written explanation of the reasons why the given lot is not suitable for these higher-ranked methods, along with the appropriate supporting data. A decrease in the number of dwelling units, businesses, and/or establishments that could be served by a certain method of sewage disposal upon the subject property shall not constitute a valid reason why a higher-ranked method is not utilized in favor of a lower priority method. An applicant must show why the higher-ranked methods of sewage disposal will not function upon the subject property before proposing to employ a lower-ranked method.
- B. Sewage Management Priority Table (*Please note the following is provided as an example. The Township would need to identify and rank the alternatives they would want to include in this table based on consultation with the municipal engineer.*)

Sewage Management Priority Table (Ranked from High to Low)

1. Individual on-lot sub-surface sewage disposal.
2. Individual on-lot elevated or at-grade sandmound.
3. Individual on-lot residential spray irrigation system (TRSIS).
4. Individual on-lot alternate system.
5. Community on-lot sub-surface sewage disposal
6. Community on-lot elevated sandmound.
7. Community on-lot spray irrigation system.
8. Individual on-lot A/B soil system (repair only).
9. Experimental system or other system not listed above.
10. Holding tank (Only per Bucks County Department of Health and Pennsylvania Department of Environmental Protection requirements).

4. **On-lot Disposal System Management Ordinance**

We commend the Township for having adopted Ordinance No. 295 relative to the permitting, management, maintenance and repair of on-lot disposal systems. Although we recognize that the ordinance has been adopted, we would recommend that the ordinance be amended as follows:

- Include a requirement specifying that prior to the execution of an agreement of sale for any property or lot, that the Seller provide the Buyer with a copy of the Township maintenance requirements of system, and a copy of the Maintenance and Repair record, and provide in the Agreement of Sale the Buyer's acknowledgement of the receipt of the Sewage Maintenance Agreement.
- We suggest adding a new subsection, Permitting Requirements, under Section C – Program Requirement and Policies that specifies those activities relative to the installation, rehabilitation, or construction of on-lot disposal systems that require a permit, and who the permitting agencies are.
- We suggest adding a new sub-subsection “3” under subsection 122 – OLDS Planning Policies as follows:

The planning, design, siting, construction, maintenance, repair, and replacement of any On-Lot Sewage Disposal System shall be done in accordance with the requirements of PA Code Title 25, Chapter 73, Standards for On-Lot Sewage Disposal Facilities.

- Subsection 123 – Management of On-Lot Disposal Systems

We suggest this subsection be amended to include an additional point “7” as follows:

In accordance with the requirements of PA Code Title 25, Chapter 73, Standards for On-Lot Sewage Disposal Facilities, only normal domestic wastes including kitchen, bathroom, and laundry wastes and water softener backwash water shall be discharged to any On-Lot Sewage Disposal System. Sewage which contains any of the following shall not be discharged into any individual or community sanitary sewage disposal system:

- i. Industrial waste (without appropriate pretreatment).
- ii. Automobile oil and other non-domestic oil.

- iii. Toxic or hazardous substances or chemicals, including but not limited to pesticides, disinfectants (excluding household cleaners), acids, paints, paint thinners, herbicides, gasoline and other solvents.
- iv. Clean surface or ground water, including water from roof or cellar drains, springs, basement sump pumps, and French drains.
- v. Wastewater resulting from hair treatment at beauty salons.
- vi. Any non-biodegradable materials.
- vii. Following or during pumping backflow from the absorption area.
- viii. Surface discharge, ponding, or other signs of malfunction in the vicinity of the absorption area.

We suggest this subsection be amended to include an additional point “8” as follows:

The use of garbage grinders connected to On-Lot Disposal Systems is prohibited for new construction and is strongly discouraged for existing systems as they increase the solids in the treatment tank which may necessitate more frequent pumping or may cause improper functioning of the treatment unit.

We suggest this subsection be amended to include an additional point “9” as follows:

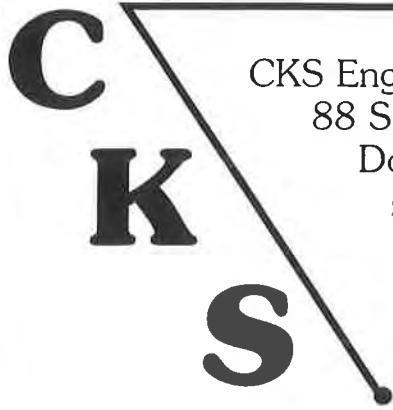
All new construction must comply with the Uniform Construction Code (UCC) requirements for water conserving plumbing fixtures and fittings. The Township may require the installation of water conservation devices, consistent with the UCC, and other operation and/or maintenance procedures to improve the performance of malfunctioning On-Lot Sewage Disposal Systems.

5. **Consistency with Comprehensive Plan**—The proposed Act 537 Plan with its selected alternatives appears to be consistent with the *Newtown Area Joint Comprehensive Plan* (2009) and as such will be a necessary complement to the comprehensive plan. The two tools used together should provide for adequate land use and sewage facilities planning in Upper Makefield Township for the foreseeable future.

Once the plan is approved by the Pennsylvania Department of Environmental Protection, we request that the Township send a final copy of the Act 537 plan to the Bucks County Planning Commission for future use in our Act 247 development review process.

PWG:kjp

cc: Mary Eberle, Esq., Grim, Biehn, Thatcher
Larry Young, P.E., Gilmore & Associates, Township Engineer (via email)
Scott Cressman, S.E.O., Sewage Program Coordinator, Bucks County Health Department
Phil Smith, S.E.O., District Supervisor, Bucks County Health Department
Elizabeth Mahoney, PA DEP
David Nyman, Interim Township Manager (via email)



CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

December 9, 2014
Ref: #6700-78

Bucks County Planning Commission
Neshaminy Manor Center
1260 Almshouse Road
Doylestown, PA 18901

Attention: Lynn T. Bush, Executive Director

Reference: Upper Makefield Township
Draft Act 537 Sewage Facilities Plan Update
Bucks County Planning Commission Review Comments

Dear Ms. Bush:

On behalf of Upper Makefield Township, we are hereby responding to the Bucks County Planning Commission ("BCPC") comments concerning the Township's Draft Act 537 Sewage Facilities Plan Update dated November 6, 2014 ("Draft Plan Update"). These comments are outlined within the BCPC Memorandum dated December 3, 2014 ("BCPC Memorandum") (copy attached). Our responses to the BCPC's comments are as follows:

1. Items #1, #2 and #5 within the BCPC Memorandum provide comments concerning Wastewater Facility Needs, Selected Alternatives and Consistency with Comprehensive Plan based on information contained within the Draft Plan Update and supports the associated conclusions presented therein. The BCPC's comments are duly noted and no additional response is required.
2. Item #3 within the BCPC Memorandum recommends that a hierarchy of OLDS alternatives be included within the Draft Plan Update based upon a system's ability to best meet the environmental, financial, and administrative limitations present within the Township.

While we understand the intent of this comment, we believe that current Pennsylvania Department of Environmental Protection ("PA DEP") regulations would dictate an OLDS alternative selection hierarchy based upon; permittable systems in accordance with PA Chapter 73: "Standards for On-Lot Sewage Treatment Facilities", experimental systems, small flow stream discharge systems

and holding tanks. All of the aforementioned systems, with the exception of holding tanks, consider renovation by soil and/or media and/or groundwater recharge. Site system applicability may also be a function of site/soil conditions (i.e. available area outside of isolation distances, slope and soil depth/permeability, etc.), cost factors and/or general preference regarding aesthetics. All of the aforementioned factors are considered when determining the best suited OLDS for a particular application consistent with current PA DEP or Bucks County Health Department ("BCHD") regulations.

3. Item #4 within the BCPC Memorandum provides recommendations for amendments to the Township's current OLDS Ordinance (Ordinance #295). Relative to this matter, we note that the Draft Plan Update proposes amendments be made to the Township's current OLDS Ordinance to incorporate additional maintenance provisions specific to the Taylorsville and Dolington Areas during the short-term planning period. The supplemental amendments that were recommended by the BCPC will be considered in conjunction with the short-term planning period amendments of the Township's OLDS Ordinance and incorporated therein as deemed appropriate by Township Officials.

We trust that the information presented above adequately responds to the comments contained within the BCPC Memorandum concerning the Township's Draft Plan Update.

Thank you for your input concerning the Draft Plan Update. If you should have any questions or require clarification of the responses detailed herein, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak

Enclosure

cc: ✓ David Nyman, Interim Township Manager
File



BUCKS COUNTY PLANNING COMMISSION

The Almshouse Neshaminy Manor Center 1260 Almshouse Road
Doylestown, Pennsylvania 18901 215.345.3400 FAX 215.345.3886
E-mail: bcpc@co.bucks.pa.us

COUNTY COMMISSIONERS:

Robert G. Loughery, *Chairman*
Charles H. Martin, *Vice Chairman*
Diane M. Ellis-Marseglia, *LCSW*

PLANNING COMMISSION:

Robert M. Pellegrino, *Chairman*
David R. Nyman, *Vice Chairman*
Walter S. Wydro, *Secretary*
Joseph A. Cullen, *ESQ*
James J. Dowling
Raymond W. Goodnoc
Edward Kisselback
Carol A. Pierce
Evan J. Stone

Lynn T. Bush
Executive Director

December 3, 2014
BCPC #47-14-WS1

MEMORANDUM

TO: Upper Makefield Township Board of Supervisors
Upper Makefield Township Planning Commission

FROM: Bucks County Planning Commission

SUBJECT: Proposal for an Update to the Official Act 537 Sewage Facilities Plan
Applicant: Board of Supervisors
Received: November 12, 2014
Hearing Date: Not Set

In accordance with the provisions of the Pennsylvania Sewage Facilities Planning Act (Act 537) and Section 304 of the Pennsylvania Municipalities Planning Code, this proposal was sent to the Bucks County Planning Commission for review. The following review was prepared by the staff and endorsed by the Bucks County Planning Commission at its meeting held on December 3, 2014.

GENERAL INFORMATION

Proposed Action: Update the official Act 537 Sewage Facilities Plan of Upper Makefield Township. The purpose of the plan is to comply with Pennsylvania Department of Environmental Protection requirements under Act 537, the Pennsylvania Sewage Facilities Act, with respect to township-wide sewage facilities planning. The plan analyzes the existing sewage flow characteristics in the Township and uses information relative to known proposed development to determine the ability of existing sewage facilities to meet future collection, conveyance, treatment, and disposal needs. The plan is intended to be a tool for the Township to use in the land development process to determine the most effective and environmentally sound method of wastewater management throughout the Township, including both sewer and non-sewer areas.

The draft Act 537 plan includes, in Appendix D, the Upper Makefield Township Ordinance No. 295 regulating the management and maintenance of individual and community on-lot sanitary sewage disposal systems.

COMMENTS

We commend the Township officials for undertaking the update of the Township's official sewage facilities plan. The plan is comprehensive, well-prepared, and contains informative maps. It explains past Act 537 planning and describes the Township's sewage facilities planning issues in a clear and concise presentation. The plan also provides an analysis of proposed alternatives to address the short and long-term sewage disposal needs within the Taylorsville and Dolington areas of the Township, which are identified in the plan as being areas with histories of on-lot disposal systems functioning problems. We note the following issues for the Township's consideration:

1. **Wastewater facilities needs**—Upper Makefield Township relies primarily on individual, on-lot sewage disposal systems, supplemented by several relatively small private and/or community sewage treatment plants, to serve its wastewater needs. According to this plan, this will continue in the future. The plan identifies a total of 295 lots proposed over the next 10 years. Of these, 35 are proposed for individual on-lot disposal systems, and an additional 260 lots are proposed to be served by community on-lot systems.

Based on the information contained in the plan, the combination of individual systems and community systems should be adequate for handling the anticipated wastewater needs of the Township.

2. **Selected alternatives**—The plan identified and analyzed seven different alternatives for the Township as a whole based on anticipated growth, zoning regulations, soil suitability, and natural resources resource features. The plan recommends continued reliance on two of these alternatives, continued use of existing sewage facilities and individual on-lot disposal systems.

The plan also identifies the Taylorsville and Dolington areas of the Township as having problems with the functioning of existing on-lot sewage disposal systems (OLDS). For each of these areas, the plan identified and analyzed different alternatives and recommends short-term (5-year planning period) and Long-Term (10-year planning period) alternatives within these areas. Specifics for each planning area include:

Taylorsville

Short-term: Improve the performance of existing OLDS through water conservation, increased system oversight and maintenance, educational outreach to property owners, and amendment of the Township's OLDS ordinance to incorporate additional maintenance provisions specific to this area.

Long-term: If the short-term approach is found to be effective after 5-years of implementation, it will be continued to satisfy the long-term sewage disposal needs of the area.

Dolington

Short-term: Improve the performance of existing OLDS through water conservation, increased system oversight and maintenance, educational outreach to property owners, and amendment of the Township's OLDS ordinance to incorporate additional maintenance provisions specific to this area.

Long-term: Based on a review of Bucks County Health Department (BCHD) records, input received from BCHD representatives, and an overall evaluation of properties including soil

probe evaluations and isolation distances, the viability of using replacement OLDS to address the long-term sewage disposal needs within this area is doubtful. Based on this, the plan evaluated six (6) potential alternatives for the long-term needs within the Dolington area and recommends the utilization of STEP System/Centralized Treatment System on each property, which would discharge to a wastewater collection system within the Dolington Area and flow by gravity to a centralized secondary treatment system located within the unimproved portion of the existing Balderston Drive right-of-way. The centralized secondary treatment system would discharge treated effluent to the existing unnamed tributary of Houghs Creek located at the terminus of the right-of-way.

The recommended strategies appear to be sound approaches for addressing the Taylorsville and Dolington areas, and the Township-wide, anticipated future wastewater needs.

3. **Hierarchy of alternatives**—Although the plan provides a detailed description of both the existing types of systems in use in the Township, as well as those allowed by the Pennsylvania Department of Environmental Protection (Pa DEP), the plan does not include a hierarchy of recommended alternatives, but instead indicates that the Pa DEP provide a variety of options that could be used and that the selection of the most appropriate option would be based on site-specific testing performed in conjunction with the OLDS planning and permitting process. As the Township has objectives to protect surface and groundwater resources, we recommend that the Township incorporate a hierarchy of system types which shall be ranked based on their ability to best meet the environmental, financial, and administrative limitations present in the Township. The highest ranking would be given to those systems which provide the greatest potential for groundwater recharge, and which have a proven history of reliability and minimum required maintenance. Developers and/or property owners seeking new permits and/or replacing old malfunctioning systems would be required to submit documentation to confirm that higher ranked options are not feasible prior to choosing a lower ranked option. Language of this new section might include language similar to the following:

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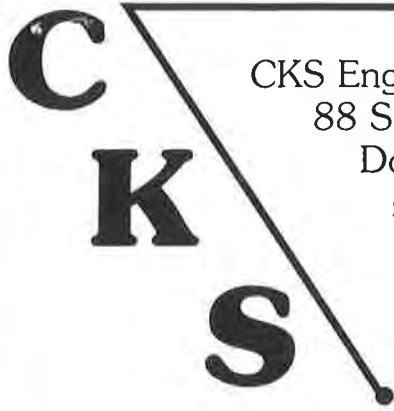
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Once the plan is approved by the Pennsylvania Department of Environmental Protection, we request that the Township send a final copy of the Act 537 plan to the Bucks County Planning Commission for future use in our Act 247 development review process.

PWG:kjp

cc: Mary Eberle, Esq., Grim, Biehn, Thatcher
Larry Young, P.E., Gilmore & Associates, Township Engineer (via email)
Scott Cressman, S.E.O., Sewage Program Coordinator, Bucks County Health Department
Phil Smith, S.E.O., District Supervisor, Bucks County Health Department
Elizabeth Mahoney, PA DEP
David Nyman, Interim Township Manager (via email)



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David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

November 10, 2014
Ref: #6700-78

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Bucks County Department of Health
Neshaminy Manor Center
Doylestown, PA 18901

Attention: Dr. David Damsker, M.D., M.P.H., Director

Reference: Township of Upper Makefield, Bucks County
Act 537 Sewerage Facilities Plan Update
Review Request


Dear Dr. Damsker:

On behalf of the Township of Upper Makefield, we are enclosing herein a draft copy of the Upper Makefield Township Act 537 Sewerage Facilities Plan Update. In accordance with the requirements of the Pennsylvania Department of Environmental Protection, we request the Health Department's review of this Plan Update. Please provide your comments and/or approval, in writing, addressed to the Township of Upper Makefield, with a copy sent to our office.

If you or your staff have any questions during your review, please do not hesitate to contact me. Thank you for your cooperation.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.



TFZ/mak
Enclosure

cc: David Nyman, Interim Township Manager
✓ File

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Sent To **Dr. David Damsker, M.D., M.P.H.**
Bucks County Dept. of Health
Neshaminy Manor Center
Doylestown, PA 18901

Street, Apt. No. or PO Box
City, State, ZIP

PS Form 3800, August 2006 See Reverse for Instructions

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

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Dr. David Damsker, M.D., M.P.H.
Bucks County Dept. of Health
Neshaminy Manor Center
Doylestown, PA 18901

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X

- ☐ Agent
☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

1/18/14

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If Yes, print delivery address below: ☐ No

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County of Bucks
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Doylestown, PA 18901

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☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label)

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COUNTY OF BUCKS

DEPARTMENT OF HEALTH

Neshaminy Manor Center, 1282 Almshouse Road, Doylestown, PA 18901 - 215-345-3318

FIELD OFFICES

Bucks County Government Services Center, 7321 New Falls Road, Levittown, PA 19055 - 267-580-3510

Bucks County Government Services Center, 261 California Road, Suite #2, Quakertown, PA 18951 - 215-529-7000

County Commissioners

ROBERT G. LOUGHERY, Chairman

CHARLES H. MARTIN, Vice-Chairman

DIANE M. ELLIS-MARSEGLIA, LCSW

Director

DAVID C. DAMSKER, M.D., M.P.H.

January 13, 2015

Mr. David Nyman,
Interim Township Manager
Upper Makefield Township
1076 Eagle Road
Newtown, PA 18940

Re: Act 537 Sewer Facilities Plan Update
Upper Makefield Township

Dear Mr. Nyman,

The Bucks County Department of Health (BCDH) has received and reviewed Upper Makefield Township's Act 537 proposed update. And has the following comment:

- While there are no current documented regulatory malfunctions, the reality of current real estate inspection procedures should be considered. Presently there are no state guidelines in Pennsylvania governing on lot septic certifications for real estate transactions. These inspections are performed by private companies who follow industry standards. Pennsylvania Septic Management Association (PSMA) is the most commonly cited guideline. When the older systems, especially in the Towerview section, fail a real estate transaction, the homeowner requests the BCDH to test and approve a new system. Due to the lot sizes and isolation distances from property lines and wells in this area, many times the only viable system is a holding tank.

If you have any questions feel free to contact me at 215-345-3859 or by email at dhmeadows@co.bucks.pa.us

Sincerely,

Don Meadows

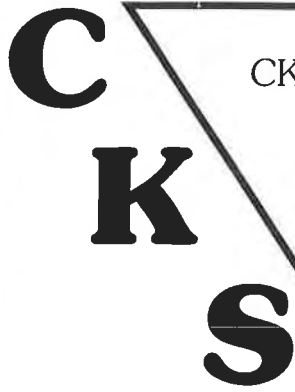
Sewer Enforcement Officer #02527

Cc:

Thomas Zarko, P.E., CKS Engineers, Inc

Elizabeth Mahoney, DEP

file



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88 South Main Street
Doylestown, PA 18901
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James F. Weiss
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Ruth Cunnane

January 28, 2015
Ref: #6700-78

Bucks County Department of Health
Neshaminy Manor Center
1282 Almshouse Road
Doylestown, PA 18901

Attention: Don Meadows, Sewage Enforcement Officer

Reference: Upper Makefield Township
Draft Act 537 Sewage Facilities Plan Update
Bucks County Health Department Review Comments

Dear Mr. Meadows:

On behalf of Upper Makefield Township, we are hereby responding to the Bucks County Health Department ("BCHD") comments concerning the Township's Draft Act 537 Sewage Facilities Plan Update, dated November 6, 2014 ("Draft Plan Update"), as outlined within the BCHD correspondence dated January 13, 2015 (copy attached).

We acknowledge the BCHD comments concerning issues that may arise in conjunction with a potential real estate transaction in regard to an identified On-Lot Sewage Disposal System ("OLDS") malfunction. Relative to this matter, we note that during the preparation of the Draft Plan Update, the Township commissioned an intensive OLDS Survey of all properties located within the Dolington Area, where authorization was obtained from the affected property owners. The conclusions reached by the OLDS Survey were that the functioning of existing OLDS were being properly managed at this time as no widespread indications of OLDS malfunctioning conditions were noted, and groundwater quality was not being adversely impacted. The findings of the aforementioned OLDS Survey are consistent with the statement contained within the BCHD January 13, 2015 correspondence, which indicates that there are no current documented regulatory malfunctions within the Dolington Area at this time.

Notwithstanding the above, it is recognized that there have been previously identified OLDS operational concerns within the Dolington Area, such as the use of several (seasonal) holding tanks, as well as inadequate setback/isolation distances and limiting zone restrictions with regard to potential future OLDS repairs and/or replacements that will

need to be resolved to ensure the long-term sewage disposal needs of all properties within the Dolington Area will be properly addressed. To that end, the Township has developed a number of potential alternatives to address the long-term sewage disposal needs of all properties within the Dolington Area which are included within the Draft Plan Update.

Based on the results of the recent OLDS Survey as summarized above, the Township believes that the short-term sewage disposal needs of the Dolington Area can be addressed through the continued use of existing OLDS, and will implement measures to; promote water conservation, increase system oversight/maintenance requirements, provide education concerning OLDS use/maintenance, and amend the Township's OLDS Ordinance to incorporate additional maintenance provisions specific to the Dolington Area in an effort to improve the performance of the existing OLDS until such time as the long-term sewage disposal alternative selected by the Township can be implemented.

We trust that the information presented above adequately responds to the comments contained within the BCHD review correspondence concerning the Township's Draft Plan Update.

Thank you for your input concerning the Draft Plan Update. If you should have any questions or require any clarification of the information provided above, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak

Enclosure

cc: David Nyman, Interim Township Manager
✓ File



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County Commissioners

ROBERT G. LOUGHERY, Chairman

CHARLES H. MARTIN, Vice-Chairman

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Director

DAVID C. DAMSKER, M.D., M.P.H.

January 13, 2015

Mr. David Nyman,
Interim Township Manager
Upper Makefield Township
1076 Eagle Road
Newtown, PA 18940

Re: Act 537 Sewer Facilities Plan Update
Upper Makefield Township

Dear Mr. Nyman,

The Bucks County Department of Health (BCDH) has received and reviewed Upper Makefield Township's Act 537 proposed update. And has the following comment:

- While there are no current documented regulatory malfunctions, the reality of current real estate inspection procedures should be considered. Presently there are no state guidelines in Pennsylvania governing on lot septic certifications for real estate transactions. These inspections are performed by private companies who follow industry standards. Pennsylvania Septic Management Association (PSMA) is the most commonly cited guideline. When the older systems, especially in the Towerview section, fail a real estate transaction, the homeowner requests the BCDH to test and approve a new system. Due to the lot sizes and isolation distances from property lines and wells in this area, many times the only viable system is a holding tank.

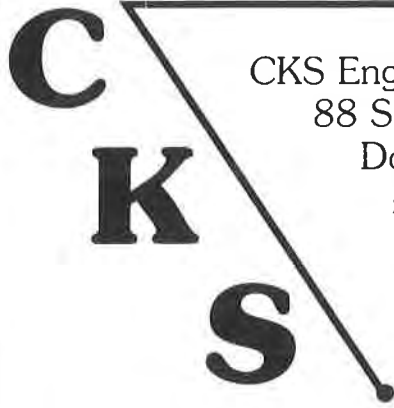
If you have any questions feel free to contact me at 215-345-3859 or by email at dhmeadows@co.bucks.pa.us

Sincerely,

Don Meadows

Sewage Enforcement Officer #02527

Cc:
Thomas Zarko, P.E., CKS Engineers, Inc
Elizabeth Mahoney, DEP
file



CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

November 10, 2014
Ref: #6700-78

Commonwealth of Pennsylvania
Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Attention: Elizabeth Mahoney, Sewage Planning Supervisor

Reference: Township of Upper Makefield, Bucks County, Pennsylvania
Act 537 Sewage Facilities Plan Update
Draft Plan Review Request

Dear Beth:

Enclosed for your review and comment is a draft of the above-referenced Act 537 Plan Update.

As you may recall, we had previously met on several occasions with PA DEP representatives to discuss various aspects of the proposed Plan Update and obtain preliminary feedback from the Department. I understand that the Department's review of this draft is not mandatory; however, any comments you can provide which would expedite your review of the final version of the Plan Update document would greatly be appreciated.

If you have any questions or wish to discuss your comments over the phone, please do not hesitate to call. Thank you for your cooperation.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak
Enclosure
cc: David Nyman, Interim Township Manager
✓ File

Questions, comments and concerns about the preferred option in the current draft of Act 537, put forward by Upper Makefield board.

- 1- Why was the lower Makefield option not considered since it is already in Dolington provide the most economical solution and it is a complete solution? As our township solicitor rightly stated our zoning can stand on its own and public sewers in Dolington would not compromise, so why not use this option ?
- 2- How does the township explain the vast differences between the report issued by Bruno Mercuri and Tom Zarko in terms of system failures or soon to be failing septic systems?
- 3- How can the township state in there document to the Act 537 that it is acceptable to wait until 2026 for any relief for the 5 residents that have holding tanks(only designed for a temporary solution) and the many residents that have systems that would not pass the vigor of inspection at the time of home sale?
- 4- Why is the Grey tract not the preferred option since it was designed to accept Dolington sewage and is less expensive. Only requires 40% connection and could be implemented immediately. It would settle the issue once and for all, it would allow the process to find funding and grants to begin now. It provides a complete solution for the residents taking the community out of the sewer treatment business once and for all.
- 5- Why apathy, the board has presented a position on sewers in Dolington that lent itself to a why be concerned about Act 537 recommendations, certain members of the board have made public statements that no one in Dolington would have to connect to the main! That the main would be paid for by township monies! That it will not be implemented till 2026!
- 6- Why was the bucks county health department not asked to join Mr Zarko company CKS engenierring for the on site inspections of Dolington properties in 2012? Why did his company not do any soil samples or probing but issued there finding with just a walk about on the properties. The Bucks County Health department in 2004 wrote Upper Makefield township with its opinion of septic systems in Dolington it stated " due to the number of malfunctions, lot size limitations and soil unsuitability, public sewers should be considered a high priority."signed Catherine Sorace, Environmental Protection Specialist
Also how does the board plan to address health related problems due to malfunctioning septic systems that have been clearly documented by the Bucks County Health department? Once again opening the township up to possible lawsuits.

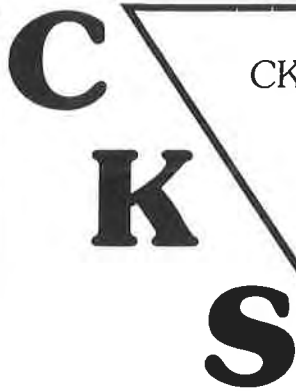
7- What flaws are in Dr Bruno Mercuri report that indicates significant system failings in Dolington? If the flaws are not major then why would the board discount his findings.

8- In 2004 the Bucks County health department recommended public sewers, why are we now talking about 2026 for effluents only system?

9- It is economically sound to begin the process sooner because cost historically go up the longer you wait, by 2026 the cost could be double today's cost.

10- Also the potential cost to the township from lawsuit filed because of proximity to a treatment facility or holding tank cost as a result of a 2026 start date.

Sincerely
Jim Barbera
817 Dolington rd.



CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901

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Ruth Cunnane

November 18, 2014
Ref: #6700-78

Mr. & Mrs. James Barbera
817 Dolington Road
Newtown, PA 18940

Reference: Upper Makefield Township
Act 537 Sewage Facilities Plan Update
Response to Public Comments

Dear Mr. & Mrs. Barbera:

On behalf of Upper Makefield Township, I am responding to the questions/comments you had raised during the discussions concerning the current draft of the Township's Act 537 Sewage Facilities Plan Update (Draft Plan Update) that occurred at the November 5, 2014 Board of Supervisors meeting. The sequence of the responses provided below correspond to the written summary you had provided (copy attached):

1. The potential servicing of any properties within the Dolington Area via a connection to Lower Makefield Township Sanitary Sewer Facilities would not result in groundwater recharge, which is a primary policy of Upper Makefield Township and is inconsistent with the goals of the Newtown Area Joint Comprehensive Plan. Further, the available capacity within sections of the Lower Makefield Township sanitary sewer collection/conveyance system, which could potentially service the Dolington Area, as well as the downstream conveyance/treatment facilities, would need to be assessed, and Intermunicipal Sewer Service Agreements would need to be developed, before a potential connection to Lower Makefield Township Sanitary Sewer Facilities could be considered as a viable option.
2. The primary basis of on-lot sewage disposal systems (OLDS) conditions within the Dolington Area that was used in the prior draft of the Township's Act 537 Plan Update that was prepared by Mercuri & Associates, Inc. was OLDS records maintained by the Bucks County Health Department (BCHD). In conjunction with the preparation of the current Draft Plan Update, during mid - late 2012, the Township performed an exhaustive review of BCHD records for the Dolington Area, found the available information to be incomplete and/or inconsistent, and, therefore, determined that the BCHD records did not conclusively document the severity of OLDS functioning problems within the Dolington Area.

In an effort to more accurately establish the current OLDS functioning conditions, the Township commissioned an intensive OLDS Survey of all properties located within the Dolington Area, where authorization was obtained from the affected property owners. The conclusions of the OLDS Survey conducted within the Dolington Area was that the functioning of existing OLDS was being properly managed at this time by affected property owners in that no widespread indications of OLDS malfunctioning conditions were noted, and the groundwater quality evaluation performed in conjunction with the OLDS Survey revealed no contamination concerns relative to potential OLDS malfunctions. To that end, the recent OLDS Survey that was performed within the Dolington Area is the basis of the OLDS Conditions Assessment that was used in the Draft Plan Update.

3. As noted within the current Draft Plan Update, based upon the independent OLDS Survey that was conducted by the Township within the Dolington Area, the functioning of existing OLDS is being properly managed at this time by the affected property owners with no widespread indications of OLDS malfunctioning or adverse groundwater quality impacts. Through the promotion of water conservation, increased system oversight/maintenance, providing education concerning OLDS use/maintenance and amending the Township's OLDS Ordinance to incorporate additional maintenance provisions specific to the Dolington Area, it is believed that the sewage disposal needs for the area can be addressed, until such time as the Township can complete the administrative, legal, engineering, and procedural efforts associated with the implementation of the selected long-term sewage disposal alternative for the Area.
4. Upon considering such factors as public and private implementation costs, ongoing operation and maintenance costs/responsibilities, anticipated reliability/performance, and consistency with prior Township planning/policies, the Board of Supervisors determined that Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal should be the preferred option to address the long-term sewage disposal needs of the Dolington Area.

As noted in the current Draft Plan Update, during the short-term (5 Year) planning period, the Township is committed to continue to work to refine the preferred long-term sewage disposal alternative in an effort to reduce currently projected costs that would be imposed on the affected property owners. Subsequently, during the initial stage of the long-term (10 Year) planning period, the Township will reassess the currently identified long-term sewage disposal alternatives, identify any new alternatives that may be available based upon changes in current conditions and/or technology that may potentially occur over the short-term planning period, and initiate the administrative, legal, engineering and procedural efforts associated with the implementation of the selected long-term sewage disposal alternative for the Dolington Area.

5. The preferred long-term sewage disposal alternative that has been identified within the current Draft Plan Update proposes the implementation of Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal within the 10 Year planning period of the Draft Plan Update. Potential requirements for mandatory connections to the facilities to be installed in conjunction with the preferred long-term sewage disposal alternative, or any other alternative that may be selected by the Board of Supervisors in the future, will be made during the alternative implementation process. The costs associated with the publicly owned/operated facilities that would be installed in conjunction with the selected long-term sewage disposal alternative would be borne by the affected property owners via an assessment procedure that would be developed by the Township in the future. The Township is committed to continue to investigate the availability of potential grant funding in an effort to reduce costs to the affected residents. It is currently projected that the implementation of the selected long-term sewage disposal alternative will occur at the end of the 10 year planning period of the Draft Plan Update, or by 2026.
6. Due to incomplete and/or inconsistent information contained within BCHD records concerning conditions of OLDS within the Dolington Area, the Township commissioned an independent environmental consulting firm, Penn's Trail Environmental, LLC, to perform an intensive OLDS Survey of properties located within the Area, where authorization was obtained from the affected property owners. The OLDS Survey included a physical property inspection, groundwater well sampling/analysis, soil probe evaluation, and review of BCHD records for each property that elected to participate. Based upon the results of the OLDS Survey, it was found that the functioning of existing OLDS within the Dolington Area was being properly managed at this time by affected property owners as no widespread indications of OLDS malfunctioning conditions were noted, and the groundwater quality evaluation performed in conjunction with the survey revealed no contamination concerns related to potential OLDS malfunctioning. To that end, it was determined that the sewage disposal needs of the Area could be effectively addressed through water conservation, increased system oversight/maintenance, educating property owners on OLDS use/maintenance and amending the Township's OLDS Ordinance to incorporate additional maintenance provisions specific to the Dolington Area until such time as the selected long-term sewage disposal alternative can be implemented.
7. Please refer to the response provided under Item 2 above.
8. Notwithstanding the recommendations provided by the BCHD in 2004, based upon the intensive evaluation performed by the Township in conjunction with the current Draft Plan Update, it was determined that Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal would be the preferred option to address the long-term sewage disposal needs of the Dolington Area.

9. Based upon the results of the OLDS Survey, the continued use of OLDS to meet the sewage disposal needs within the Dolington Area is a viable option until such time as the selected long-term sewage disposal alternative can be implemented. To ensure that the OLDS will continue to function properly, it is proposed that the Township promote water conservation, public education, and increased OLDS oversight/maintenance within the Dolington Area. During the short-term planning period of the Draft Plan Update, the Township has committed to continue to work to refine the preferred long-term sewage disposal alternative in an effort to reduce currently projected costs that would be imposed on the affected property owners.
10. The Township performed an intensive evaluation of all potential sewage disposal alternatives that would be available to address both the short-term and long-term sewage disposal needs of the Dolington Area in conjunction with the preparation of the Draft Plan Update consistent with Pennsylvania Department of Environmental Protection regulations/guidelines.

If you should have any questions concerning the information presented above or enclosed herein, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak

Enclosure

cc: David Nyman, Interim Township Manager
✓ File

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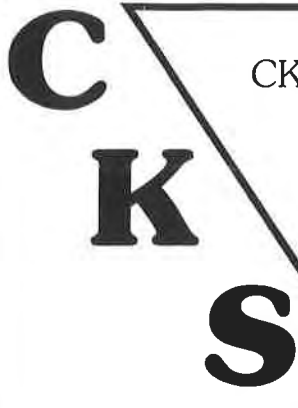
817 Dolington rd.

**Statement to the Upper Makefield Township Board of Supervisors
November 5, 2014 Re: 537 Plan**

I would like to raise the following questions and issues, all of which make it hard for me, as a resident of Dolington to support the current proposed 537 Plan.

1. I really wonder what the lot-by-lot situation is with regard to septic tank functioning in Dolington. I cannot wrap my head around the variety of opinion and supposed fact on this subject. It might be helpful to know the following about the 2013 survey:
 - a. How many homes were actually surveyed given the fact that participation was voluntary. Is it safe to assume anything at all about the on-lot conditions of the homes that were not surveyed.
 - b. Why was it that there were no soil samples or probes taken during this survey.
2. Exactly where are the communities where the proposed preferred system is in use?
3. Why are the less expensive systems not currently under consideration? When a unit of government makes a decision which they feel is in their interest for whatever reason, but that decision has a negative consequence for individual property owners, then those individual property owners are entitled to compensation. I think there are numerous legal precedents in this regard.
4. Why couldn't Toll Brothers extend their main now since they will need to do it at sometime anyway; that would make the Grey Tract proposal even more financially feasible.
5. Let's make a decision now to provide Dolington with a complete sewage solution so that tomorrow, we can immediately start the search for funding options. No more engineering studies, no more feasibility questions, no more worries about whether or not the plan will be accepted by the commonwealth, no more wasted time, effort and money. Put a stop to the pattern of destabilizing property values in Dolington, connect us to a complete sewage solution. Thank you.

Larry Wenger
821 Dolington Rd.
Newtown, Pa 18940



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88 South Main Street
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Ruth Cunnane

November 18, 2014
Ref: #6700-78

Larry Wenger
821 Dolington Road
Newtown, PA 18940

Reference: Upper Makefield Township
Act 537 Sewage Facilities Plan Update
Response to Public Comments

Dear Mr. Wenger:

On behalf of Upper Makefield Township, I am responding to the questions/comments you had raised during the discussions concerning the current draft of the Township's Act 537 Sewage Facilities Plan Update (Draft Plan Update) that occurred at the November 5, 2014 Board of Supervisors meeting. The sequence of the responses provided below correspond to the written summary you had submitted to the Township (copy attached):

- 1a. Thirty-one of the 58 properties included within the Dolington Study Area participated in the On-Lot Sewage Disposal System (OLDS) Survey that was conducted by the Township in the Spring/Summer of 2013. Although 100% participation was the ideal goal envisioned by the Township, it is believed that both the number and various locations of the properties that participated in the OLDS Survey provided a representative depiction of the current OLDS conditions within the Dolington Area.
- 1b. Twenty-seven of the 31 property owners that participated in the Dolington Area OLDS Survey authorized the performance of a soil probe evaluation on their properties. To that end, a soil probe evaluation was performed on these 27 properties, the results of which are summarized within Table 3 of the current Draft Plan Update (copy attached).
2. Pennsylvania Department of Environmental Protection (PA DEP) representatives have advised that Septic Tank Effluent Pumping (STEP) Systems are currently in service throughout Pennsylvania at the following locations:

- Bryn Athyn Borough, Montgomery County
 - East St. Clair Township, Bedford County
 - Oliver Township, Perry County (under construction)
 - Nelson Township, Tioga County
 - Abbott Township, Potter County
 - Madison Township, Lackawanna County
 - Liberty Township, Adams County
 - Sullivan Township, Tioga County
 - Blacksville Township, Greene County
3. Upon considering such factors as public and private implementation costs, ongoing operation and maintenance costs/responsibilities, anticipated reliability/performance, and consistency with prior Township planning/policies, the Board of Supervisors determined that Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal should be the preferred option to address the long-term sewage disposal needs of the Dolington Area.

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4. The sanitary sewer system improvements that are proposed in conjunction with the Gray Tract Development are currently being installed by the project developer, Toll Brothers, Inc. The availability of these improvements to address the needs of the Dolington Area under various long-term sewage disposal alternatives was considered in the Draft Plan Update.

An additional land development application pertaining to a 99.15 acre (±) parcel located between the Gray Tract Development and Dolington Area, which is commonly known as the "White Farm", has been filed with the Township by the parcel owner, Toll Brothers, Inc. As of the date of this correspondence, the aforementioned land development application has not been approved by the Township and, therefore, the potential timeline for the development of the White Farm parcel is uncertain. Should development plans for the White Farm parcel proceed through the planning/approval process during the short-term planning period of the Draft Plan Update, the Township can potentially assess the associated impact in conjunction with the overall reassessment of the currently identified long-

term sewage disposal alternatives for the Dolington Area that are included in the Draft Plan Update.

5. One of the initial steps that must be taken to implement a change in the present means of sewage disposal within a municipality is the adoption of an Official Act 537 Sewage Facilities Plan. This primary step must be completed before a municipality can proceed to any subsequent steps to make a change in the present means of sewage disposal, such as evaluation of funding options, submission of potential grant applications, permitting, engineering/design, construction, etc. Over the past several years, Township Officials have spent significant time/effort working through the initial planning process, ensuring all viable long-term sewage disposal alternatives have been evaluated to determine the best means of addressing the sewage disposal needs of the Dolington Area. The preferred long-term sewage disposal alternative that was identified by the Township would provide a complete solution to address the long-term sewage disposal needs of the Dolington Area should this alternative ultimately be implemented during the 10 Year planning period of the Draft Plan Update.

If you should have any questions concerning the information presented above or enclosed herein, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak

Enclosures

cc: David Nyman, Interim Township Manager
✓ File

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Larry Wenger
821 Dolington Rd.
Newtown, Pa 18940

Table 3
Dolington Area Needs Assessment 2013
Well Sampling and OLDS Survey Summary
Upper Makefield Township

Tax Parcel	Date Inspected	System Malfunction	Water Sample	Coliform Bacteria	Nitrate (mg/L)**	BCDH Record	Sewage System	Limiting Zone
#47-17-6	6/06/13	No	Yes ^{2,4,5}	<1*	4.19	YES	ESM	20"M
#47-17-7-1	5/29/13	No	Yes ⁰	<1*	2.14	No	ING	16-26" M
47-17-7	vacant	No	No	---	---	YES	---	21"M
#47-17-8	5/29/13	No	Yes ¹	<1*	4.90	No	ING	20"M
#47-17-11	6/06/13	No	Yes ⁰	<1*	<0.50	YES	ING/HT	10"M
#47-17-22	6/06/- 7/12/13	No	Yes ^{1,2}	12/0	3.24	YES	ING/HT	17"M
#47-17-25	5/29/13	No	Yes ¹	<1*	<0.50	No	ING	20"M
#47-17-26	6/03/13	No	Yes ^{4,5}	<1*	4.51	No	ING	23"M
#47-17-28	5/29/13	No	Yes ⁰	<1*	<0.50	YES	ESM	20" M
#47-18-1-1	5/28/13	No	Yes ⁰	<1*	6.89	YES	ING	26"M
#47-18-3	5/28/13	No	Yes ⁰	<1*	4.15	YES	ING	25"R
#47-18-4	5/28/13	No	Yes ⁰	<1*	7.12	No	ING	21"R
#47-18-5	6/06/13	No	Yes ⁰	<1*	6.82	No	ING	26"R
#47-18-6	5/28/13	Yes	No	---	---	No	ING	28"M
#47-18-8	5/29/13	No	Yes ^{1,2}	<1*	8.66	YES	ESM	23"M
#47-18-11	5/29/13	No	Yes ⁰	<1*	3.59	No	ESM	20"M
#47-18-14	5/29/13	No	Yes ⁵	<1*	6.34	YES	ALT	Insufficient area
#47-18-15	6/05/13	No	Yes ^{4,5}	<1*	6.80	YES	ESM	22"M
#47-18-16	6/06/13	No	Yes ⁵	<1*	5.42	YES	ING	26"M
#47-18-17	6/06/13	No	Yes ⁰	<1*	6.28	YES	ESM	(declined)
#47-18-19	6/06/13	No	No	---	---	YES	EXP	(declined)
#47-18-20	6/06/- 7/12/13	No	Yes ^{1,4,5}	4/0	3.61	No	ING	(declined)
#47-18-21	5/29/13	No	Yes ⁰	<1*	<0.50	YES	ING	16"M
#47-18-22	5/29/13	No	Yes ⁰	<1*	4.04	No	ING	12"M
#47-18-24	5/29/13	No	Yes ⁰	<1*	2.15	YES	ING	28"M
#47-18-25	6/06/13	No	Yes ⁵	<1*	<0.50	YES	ING	(declined)
#47-18-28	5/29/13	No	Yes ⁰	<1*	<0.50	YES	ING/HT	0"M
#47-18-30	5/29/- 6/06/- 7/12/13	No	Yes ^{1,2}	11/28/0	3.15	No	ING	27"M
#47-18-31	5/29/13	No	No	---	---	---	ING	21-25"M
#47-18-32	5/29/13	No	Yes ¹	<1*	<0.50	No	ING	10"M
#47-19-1	6/06/13	No	Yes ⁰	<1*	3.53	YES	ING	10"M

⁰ no treatment

¹ particulate filter

² UV treatment

³ chlorine treatment

⁴ carbon filter

⁵ water softener

*- <1 = not detected by test method

** - Nitrate MCL is 10 mg/L

ING – unspecified in-ground absorption area (cesspool, seepage pit, trenches or bed)

ESM – elevated sand mound

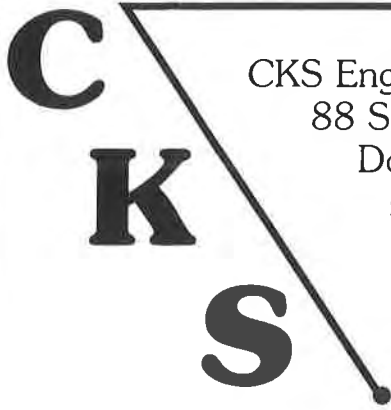
HT – holding tank

EXP – experimental system not meeting Chapter 73 standards

ALT – Alternate Technology, i.e. Peat Filter

M – soil mottling/redoximorphic features

R – Bedrock or rock with voids



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Response to Public Comments

Dear Ms. Larson:

On behalf of Upper Makefield Township, I am responding to the questions/comments you had raised during the discussions concerning the current draft of the Township's Act 537 Sewage Facilities Plan Update (Draft Plan Update) that occurred at the November 5, 2014 Board of Supervisors meeting. The questions/comments you had provided, with associated responses, are summarized below:

1. ***"Will there be a presentation of the proposed Act 537 Plan Update at tonight's meeting?"***

The Draft Plan Update was discussed in detail at numerous prior Board of Supervisors meetings prior to the Board authorizing the distribution for outside reviewing agency review and public comment. The Draft Plan Update will be further discussed at upcoming public meetings over the next several months as part of the formal review/approval process.

2. ***"I do not understand the basis of the completion date of 2026 that is proposed within the Draft Plan Update."***

As noted within the Draft Plan Update, short-term sewage disposal needs for the Dolington Area during the 5 year planning period can be effectively addressed through water conservation, increased system oversight/maintenance, educating property owners on OLDS use/maintenance and amendment of the Township's OLDS Ordinance to incorporate additional maintenance provisions specific to the Dolington Area.

During the short-term planning period, the Township has committed to continuing to work to refine the preferred long-term sewage disposal alternative in an effort to reduce currently projected costs that will be imposed on the affected property owners. Subsequently, during the initial stage of the long-term (10 Year) planning period, the Township will reassess the currently identified long-term sewage disposal alternatives, identify any new alternatives that may be available based upon changes in current conditions and/or technology that may occur over the short-term planning period, and initiate the administrative, legal, engineering, and procedural efforts associated with the implementation of the selected long-term sewage disposal alternative for the Dolington Area. It is expected that the time frame needed to accomplish the aforementioned tasks required to implement the selected long-term sewage disposal alternative for the Dolington Area will be by the end of the 10 year planning period, or January 2026.

If you should have any questions concerning the information presented above, please do not hesitate to contact me.

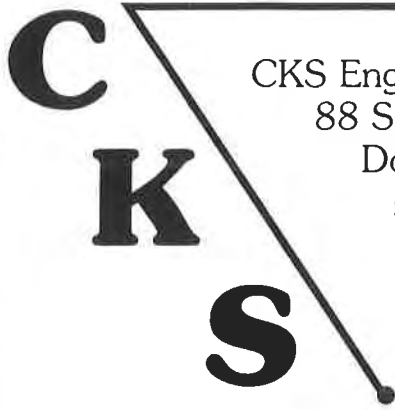
Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak

Enclosures

cc: David Nyman, Interim Township Manager
✓ File



CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

November 18, 2014
Ref: #6700-78

Justin Kloc
779 Washington Crossing Road
Newtown, PA 18940

Reference: Upper Makefield Township
Act 537 Sewage Facilities Plan Update
Response to Public Comments

Dear Mr. Kloc:

On behalf of Upper Makefield Township, I am responding to the comments you had provided during the discussions concerning the current draft of the Township's Act 537 Sewage Facilities Plan Update (Draft Plan Update) that occurred at the November 5, 2014 Board of Supervisors meeting. The comments you had provided, with associated responses, are summarized below:

1. ***"I'm concerned with the potential cost and financing of connecting to the proposed sanitary sewer system. I do not believe that the properties with properly functioning on-lot sewage disposal systems should be required to connect."***

Upon considering such factors as public and private implementation costs, ongoing operation and maintenance costs/responsibilities, anticipated reliability/performance, and consistency with prior Township planning/policies, the Board of Supervisors determined that Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal should be the preferred option to address the long-term sewage disposal needs of the Dolington Area.


As noted in the Draft Plan Update, during the short-term (5 Year) planning period, the Township is committed to continue to work to refine the preferred long-term sewage disposal alternative in an effort to reduce currently projected costs that would be imposed on the affected property owners. Subsequently, during the initial stage of the long-term (10 Year) planning period of the Plan Update, the Township will reassess the currently identified long-term sewage disposal alternatives, identify any new alternatives that may be available based upon changes in current conditions and/or technology that may potentially occur over the short-term planning

period, and initiate the administrative, legal, engineering and procedural efforts associated with the implementation of the selected long-term sewage disposal alternative for the Dolington Area. Part of the aforementioned administrative and procedural efforts to be performed during the long-term planning period would include developing potential requirements for mandatory connections to the facilities to be installed in conjunction with the preferred long-term sewage disposal alternative, or any other alternative that may be selected by the Board of Supervisors in the future. Your comment concerning potential deferred connections for properties with properly functioning OLDS will be considered by the Board of Supervisors at that time.

If you should have any questions concerning the information presented above, please do not hesitate to contact me.

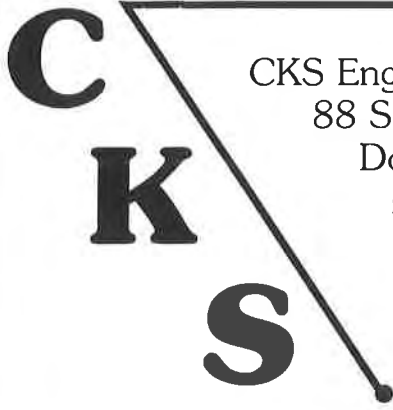
Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.



TFZ/mak

cc: ✓ David Nyman, Interim Township Manager
File



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Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

November 18, 2014
Ref: #6700-78

James Ansboro
713 Towerview Drive
Newtown, PA 18940

Reference: Upper Makefield Township
Act 537 Sewage Facilities Plan Update
Response to Public Comments

Dear Mr. Ansboro:

On behalf of Upper Makefield Township, I am responding to the comments you had provided during the discussions concerning the current draft of the Township's Act 537 Sewage Facilities Plan Update (Draft Plan Update) that occurred at the November 5, 2014 Board of Supervisors meeting. The comments you had provided, with associated responses, are summarized below:

1. ***"I'm not experiencing any problems with the functioning of my septic system."***

The Dolington Area has been identified as an area experiencing problems with the functioning of existing on-lot sewage disposal systems (OLDS) by the Bucks County Health Department (BCHD). In response to the input received from the BCHD, the Township had reviewed all Health Department records concerning OLDS within the Dolington Area to determine the severity of OLDS functioning problems. During this review, the Township found the available information to be incomplete and/or inconsistent and, therefore, determined that the BCHD records could not conclusively document the severity of OLDS functioning problems within the Dolington Area.

In an effort to more accurately establish current OLDS functioning conditions, the Township commissioned an intensive OLDS Survey of all properties located within the Dolington Area, where authorization was obtained from the affected property owners. The conclusions reached in conjunction with the OLDS Survey that was performed within the Dolington Area were that the functioning of existing OLDS were being properly managed at this time by the affected property owners as no widespread indications of OLDS malfunctioning conditions were noted, and groundwater quality was not being adversely affected. However, a relatively large

number of properties within the Dolington Area were noted as having periodic problems with the functioning of their primary OLDS and thereby relying on supplemental holding tanks to address seasonal conditions. Additionally, a number of properties are served by OLDS that were constructed in the 1950s and 1960s did not meet current PA DEP design and siting guidelines due to inadequate setback/isolation distances, limiting zone restrictions, etc., which would affect the viability of potential OLDS solutions in the event future problems develop. To that end, a number of potential alternatives to address the long-term sewage disposal needs of all properties within the Dolington Area were developed by the Township in conjunction with the Draft Plan Update.

2. ***"The preferred long-term sewage disposal alternative included within the Draft Plan Update will not recharge groundwater in the immediate area."***

It is acknowledged that the most effective means of recharging groundwater in the immediate vicinity of the Dolington Area would be by the continued use of OLDS. However, as noted under Item 1 above, it was determined that the continued use of OLDS to meet the long-term sewage disposal needs of the area is not a viable option due to various factors.

Notwithstanding the above, the preferred long-term sewage disposal alternative identified within the Draft Plan Update, namely Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal, will provide some degree of groundwater recharge within the Township, and therefore is consistent with Township policies and prior planning.

3. ***"The preferred long-term sewage disposal alternative identified in the Draft Plan Update is in conflict with current improvements planned for my property."***

Township Staff will contact you in the near future to discuss your proposed improvement plans as it relates to the preferred long-term sewage disposal alternative that has been identified within the Draft Plan Update.

If you should have any questions concerning the information presented above, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak
cc: David Nyman, Interim Township Manager
✓ File

From: Gerald LaNasa [mailto:grlanasa@gmail.com]
Sent: Sunday, January 18, 2015 5:14 PM
To: tfzarko@cksengineers.com
Cc: Dave Nyman; Judy Caporiccio; Dave Kuhns
Subject: Written Comments UMT Published 537 Plan

Thomas F. Zarko, P.E.
CKS Engineers, Inc and Upper Makefield Township

January 18, 2015

Dear Mr. Zarko,

Thank you for your patience and professional execution on our Upper Makefield 537, Sewage Plan.

Please consider these points as my own formal comments on the published Upper Makefield 537 Draft:

I am disappointed the plan does not provide a finite or clear path to bring the properties in the two areas of concern into line with our current Township, County, and Pennsylvania public sanitary codes. Upper Makefield has over 10,000 residents and visitors who depend on safe well water for our households, dining, and even our local healthcare. The current plan at least delays directly addressing the known public sanitary issues in Upper Makefield for at least five years and most likely for a decade or more. The plan to put off indefinitely known public sanitary issues in an area dependent on well water is not sound governance. I have the following more specific concerns:

- 1.) The current plan does not offer any resident on a holding tank or any resident who fails a future mandated inspection a reasonable path to remedy the problem.
- 2.) The current inspections for housing sales and mortgage financing are requiring property owners to replace any OLDS system that operate outside of the current permitting requirements prior to closing on any mortgages. The current plan does not provide a viable path for any property owner who is mandated to replace their existing OLDS in the two identified areas of concern. In the interim or "limbo" period we will be rendering some properties unsalable.
- 3.) The plan calls for mandatory invasive inspection and testing without providing a practical way to correct the issues discovered during these new requirements.
- 4.) The plan once adopted legally binds the township to passing an ordinance mandating invasive testing on private property that the impacted residents have not been provided any details on at this time.
- 5.) The plan once adopted legally binds the Township and future supervisors to design, engineer, build, and operator plus somehow fund a sewer system(STEP) for the properties in Dolington at significantly higher cost than other proven industry standards based solutions.
- 6.) There are some that hope for a future "magic" technology to relieve the issues and allow Upper Makefield to escape the legally binding plans currently in the process of adoption. The false hopes are dependent on somehow overcoming the long known laws of physics that do not provide for the compression of fluids. The issues in both areas of concern are related to the inability of the land to handle the volumes of fluids or liquid. Outside of miracles, technology is unlikely to ever allow the ground to safely handle the liquid wastes in Taylorsville and Dolington. Better public education may help to rectify these unproductive myths. A 537 once adopted is legally binding and technology is not likely to do much to broaden the options for Dolington and Taylorsville.
- 7.) The current plan does not in anyway provide for any reasonable corrective action for the known out of code public sanitary issues in Upper Makefield at the lowest total costs. The current plan simply provides for too little action, at far too great a cost, at dates that do no exist or are too far into the future.
- 8.) Upper Makefield, Bucks County, and Pennsylvania have changed the public sanitary laws and regulations on existing structures in Dolington and Taylorsville. Even with this proposed plan Upper Makefield does not provide for a decade or more its residents with any rational or viable options to bring their properties into line with the new laws enacted long after their structures were built. That is not good government.
- 9.) During the process I believe we have at least stretch the definition of the term "Status Quo". While the current plan may forgo the move away from on lot solutions for five years or more? The plan does require the township to enact ordinances mandating

the regular testing of some on lot solutions with a yet to be determined process and cost. I suspect some residents will see this as an unwelcome surprise and a change in the way things are now. I believe the reality that only half of the residents allowed the recent testing at the Townships expense will be telling of the reception and reaction to the new requirement that private property owners pay for more invasive testing and inspection at their own costs.

I hope and pray we can invest some additional time coupled with more effective public education to allow the plan to be tightened with more finite solutions, at lower total cost for everyone. The importance of our well water is too great to allow these issues to slide another decade unresolved. I do not believe any non standards based plan costing far more than proven industry wastewater solution is good practice or likely to be funded by third parties or our residents. To have an incomplete "placeholder option/plan" that legally binds future boards and the Township to build an inferior solution at twice the reasonable costs is reckless.

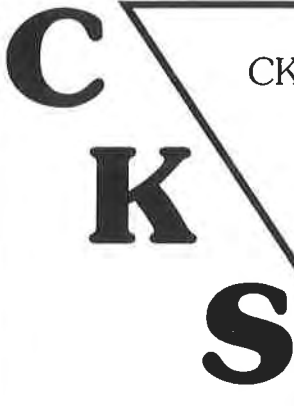
Thank You! for everything you do for us and I apologize that we have not given you a stronger and more rational set of elected leaders to work with on this difficult project and the need for change that must go along with it.

Warmest regards,

--

Gerald R. La Nasa
Washington Crossing

215 292-6758
grianasa@gmail.com



CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

February 4, 2015
Ref: #6700-78

Mr. Gerald R. LaNasa
17 Davis Drive
Washington Crossing, PA 18977

Reference: Upper Makefield Township
Draft Act 537 Sewage Facilities Plan Update
Response to Public Comments

Dear Mr. LaNasa:

On behalf of Upper Makefield Township, we are hereby responding to the comments concerning the Township's Draft Act 537 Sewage Facilities Plan Update dated November 6, 2014 ("Draft Plan Update") as outlined in your email correspondence dated January 18, 2015 (copy attached). The sequence of the responses provided below correspond to the questions/comments contained within the aforementioned email correspondence.

1. It is proposed that the short-term sewage disposal needs of the Dolington Area be addressed through the continued use of existing On-Lot Sewage Disposal Systems ("OLDS") based upon the conclusions of the OLDS Survey that was performed in conjunction with the preparation of the Draft Plan Update. The Township also intends to implement measures to; promote water conservation, increase system oversight/maintenance requirements, provide education concerning OLDS use/maintenance, and amend the Township's OLDS Ordinance to incorporate additional maintenance provisions specific to the Dolington Area in an effort to improve the performance of existing OLDS during the short-term planning period.

The long-term sewage disposal needs of the properties within the Dolington Area with previously identified OLDS operational concerns will be addressed during the long-term planning period of the Draft Plan Update. By virtue of the supplemental measures that are to be implemented by the Township that are summarized above, a decline in OLDS operational conditions within the Dolington Area is not expected to occur during the short-term planning period. However, if isolated OLDS operational problems should arise, it is anticipated that they will be

addressed by the implementation of Best Technological Guidance under the supervision of the Bucks County Health Department ("BCHD") until such time as the long-term sewage disposal alternative as detailed within the Draft Plan Update can be implemented by the Township.

2. The conclusions reached in conjunction with the recent OLDS Survey that was performed in the Taylorsville Area were that the majority of existing OLDS appear to be functioning properly, with no indications of widespread problems, and that there were viable OLDS solutions to address the specific OLDS operational problems identified during the survey.

With regard to the conclusions of the Dolington Area OLDS Study, it was found that the functioning of existing OLDS was being properly managed by the affected property owners, in that no widespread indication of OLDS malfunctioning conditions were noted, and no contamination concerns related to potential OLDS malfunctions were noted in the associated groundwater quality evaluation. As noted in the response to Item #1 above, a decline in OLDS operational conditions within the Dolington Area is not expected to occur during the short-term planning period. However, if isolated OLDS operational problems should arise, it is anticipated that they will be addressed by the implementation of Best Technological Guidance under the supervision of the BCHD until such time as the long-term sewage disposal alternative can be implemented by the Township.

3. & 4. The Draft Plan Update proposes that the Township implement measures to; promote water conservation, increase system oversight/maintenance requirements, provide education concerning OLDS use/maintenance, and amend the Township's OLDS Ordinance to incorporate additional maintenance provisions specific to the Taylorsville and Dolington Areas in an effort to improve the performance of existing OLDS during the short-term planning period. These supplemental measures could include; increased frequency of septic tank pumping, increased frequency of septic hauler inspections, annual property owner OLDS inspections and reporting, etc. Specific details of the envisioned supplemental OLDS operation and maintenance measures will be further refined through a public participation process during the initial stages of the short-term planning period of the Draft Plan Update. There is no indication of mandatory invasive inspection and testing requirements being implemented in either the Taylorsville or Dolington Areas within the Draft Plan Update, nor is this intended.
5. The preferred long-term sewage disposal alternative for the Dolington Area that has been identified within the Draft Plan Update is Alternative #6: Step System/ Centralized Treatment System with Stream Discharge Effluent Disposal. The selection of the aforementioned alternative was based upon careful consideration of a number of factors including public and private implementation costs, ongoing operation and maintenance costs/responsibilities, anticipated reliability/ performance and consistency with prior Township planning/policies.

As noted in the Draft Plan Update, during the short-term planning period, the Township is committed to continue to work to refine the preferred long-term sewage disposal alternative in an effort to reduce currently projected costs that will be imposed on the affected property owners. Subsequently, during the initial stage of the long-term planning period, the Township will reassess the currently identified long-term sewage disposal alternatives, identify any new alternatives that may be available based upon changes in current conditions and/or technology that may potentially occur, and initiate the administrative, legal, engineering and procedural efforts associated with the implementation of the selected long-term sewage disposal alternative for the Dolington Area. To that end, the Draft Plan Update affords the Township flexibility in the selection of a long-term sewage disposal alternative that is to be ultimately implemented in the Dolington Area to consider any changes in technology or conditions that may occur during the short-term planning period.

6. As noted in the Draft Plan Update, based upon the OLDS Surveys conducted by the Township, it was determined that the short-term sewage disposal needs of the Taylorsville and Dolington Areas can continue to be met by use of existing OLDS. It is also expected that the long-term sewage disposal needs of the Taylorsville Area can be met by the continuing use of OLDS, which will be confirmed by monitoring OLDS conditions during the short-term planning period of the Plan Update.

It is recognized that there have been previously identified OLDS operational concerns within the Dolington Area, such as the use of several (seasonal) holding tanks, as well as inadequate setback/isolation distances and limiting zone restrictions with regard to the potential future OLDS repairs and/or replacements that will need to be resolved to ensure the long-term sewage disposal needs of all properties within the Dolington Area will be properly addressed. To that end, the Township has developed a number of potential alternatives to address the long-term sewage disposal needs of all properties within the Dolington Area which are detailed within the Draft Plan Update. These long-term sewage disposal alternatives will be further refined or supplemented based upon changes in current conditions and/or technology that could occur over the short-term planning period of the Draft Plan Update.

7. Please refer to the responses provided under Items 1 through 6 above.
8. The design/construction of the majority of OLDS that currently service properties within the Taylorsville and Dolington Areas predate current State regulatory standards. Nevertheless, the majority of the OLDS in these Areas were determined to be satisfactorily functioning by the OLDS Surveys conducted in conjunction with the Draft Plan Update. Based upon the findings of the OLDS Surveys, viable alternatives to meet both the short and long-term sewage disposal needs of these areas were developed and included within the Draft Plan Update.

9. The references to "Status Quo" when used in prior discussions/presentations of the Draft Plan Update to the Board of Supervisors pertained to the continued use of OLDS within the Taylorsville and Dolington Areas during the short-term planning period. In an effort to improve the performance of existing OLDS in these areas, the Township intends to implement measures to; promote water conservation, increase system oversight/maintenance requirements, provide education concerning OLDS use/maintenance and amend the Township's OLDS Ordinance to incorporate additional maintenance provisions specific to these areas. Additional information concerning the supplemental operation and maintenance measures can be found in the response to Items 3 & 4 above.

Thank you for your input concerning the Draft Plan Update. If you should have any questions or require any clarification of the information provided above, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak

Enclosure

cc: David Nyman, Interim Township Manager
✓ File

From: Gerald LaNasa [mailto:grianasa@gmail.com]
Sent: Sunday, January 18, 2015 5:14 PM
To: tfzarko@cksengineers.com
Cc: Dave Nyman; Judy Caporiccio; Dave Kuhns
Subject: Written Comments UMT Published 537 Plan

Thomas F. Zarko, P.E.
CKS Engineers, Inc and Upper Makefield Township

January 18, 2015

Dear Mr. Zarko,

Thank you for your patience and professional execution on our Upper Makefield 537, Sewage Plan.

Please consider these points as my own formal comments on the published Upper Makefield 537 Draft:

I am disappointed the plan does not provide a finite or clear path to bring the properties in the two areas of concern into line with our current Township, County, and Pennsylvania public sanitary codes. Upper Makefield has over 10,000 residents and visitors who depend on safe well water for our households, dining, and even our local healthcare. The current plan at least delays directly addressing the known public sanitary issues in Upper Makefield for at least five years and most likely for a decade or more. The plan to put off indefinitely known public sanitary issues in an area dependent on well water is not sound governance. I have the following more specific concerns:

- 1.) The current plan does not offer any resident on a holding tank or any resident who fails a future mandated inspection a reasonable path to remedy the problem.
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- 3.) The plan calls for mandatory invasive inspection and testing without providing a practical way to correct the issues discovered during these new requirements.
- 4.) The plan once adopted legally binds the township to passing an ordinance mandating invasive testing on private property that the impacted residents have not been provided any details on at this time.
- 5.) The plan once adopted legally binds the Township and future supervisors to design, engineer, build, and operator plus somehow fund a sewer system(STEP) for the properties in Dolington at significantly higher cost than other proven industry standards based solutions.
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- 9.) During the process I believe we have at least stretch the definition of the term "Status Quo". While the current plan may forgo the move away from on lot solutions for five years or more? The plan does require the township to enact ordinances mandating

the regular testing of some on lot solutions with a yet to be determined process and cost. I suspect some residents will see this as an unwelcome surprise and a change in the way things are now. I believe the reality that only half of the residents allowed the recent testing at the Townships expense will be telling of the reception and reaction to the new requirement that private property owners pay for more invasive testing and inspection at their own costs.

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Thank You! for everything you do for us and I apologize that we have not given you a stronger and more rational set of elected leaders to work with on this difficult project and the need for change that must go along with it.

Warmest regards,

--

Gerald R. La Nasa
Washington Crossing

215 292-6758
grlanasa@gmail.com

From: irish4pirates@comcast.net [mailto:irish4pirates@comcast.net]
Sent: Sunday, January 18, 2015 1:44 PM
To: z
Cc: nyman, david; Caporiccio, Judy; kuhns, dave
Subject: 537 comments

Tom Zarko
CKS Engineers

January 18, 2015

Dear Mr. Zarko,

Thank you for your dedicated and professional work on the Upper Makefield 537 Sewage Plan. I have a few comments for the record concerning the draft that is now being considered:

Dolington Area

The preferred Plan #6 STEP is not the least expensive plan. The benefit of Plan #6, as some of my fellow Board of Supervisors opine, is that landowners within the project area will not have to hook-up to the main lines until absolutely necessary. However, I see this as a negative for three reasons:

1. Monitoring of the Dolington Area will need to continue in perpetuity. This is the least appealing to the township taxpayers not in the project area. There is no finite cost to the general taxpayer for this project.
2. Further, I am concerned that this "as needed" approach will inhibit our ability to fully assist the property owners with financing. I expect that only the initial cost will be considered as part of a grant or bond and that the cost at time of connection, (1/3 of the total cost) will be borne solely by the homeowners. I do not foresee a situation where township financing is secured for an unknown period of time and for an unknown number of households.

3. All property owners in the project area will pay an initial cost of approximately \$28,000 per EDU. This cost will be borne by everyone in the area regardless of whether they ever connect to the system. While you have expressed to me that you feel those homeowners benefit by having the ability to hook-up, I remain of the opinion that those homeowners are paying for something they will not benefit from.

I have other concerns about Option #6: The location of the centralized system will have a severe negative impact on properties at 713 and 721 Towerview Drive. Many other homeowners on Towerview and Balderston Drives will also experience negative impact. The centralized system does not have sufficient screening and buffering. There is virtually no set back from the abutting properties. I do not feel this is an equitable situation when there are less costly options that would not have a negative impact on particular property values.

Overall I consider Table 14 to be incomplete. This is not a critique of your document but a criticism of the Board of Supervisors policy. I remain concerned that options, which are available and perhaps less expensive and more efficient are not listed. The rationale for this is an unreasonable fear and lack of understanding of the land development process. In particular the White Tract has preliminary approval. The likelihood that more units would result from considering the extension of the sewer line from White to Dolington is naught. Having served on the Planning Commission for the years when this innovative option was carefully planned, I remain convinced that an extension of the line from Gray WWTP to White to Dolington is a strong contender as the best option and I am disappointed it is not among the list.

I do not feel that Option #5 is a viable option. There are too many variables and margins for error.

Overall, I do not believe the latest preferred options for the Dolington area have been sufficiently vetted for the public. In fact the preferred options in the current draft have not been presented in any detail to the public. In speaking with residents, there is virtually no understanding of what the preferred options consist of. I feel this is a major mistake especially given the previous efforts to educate the public.

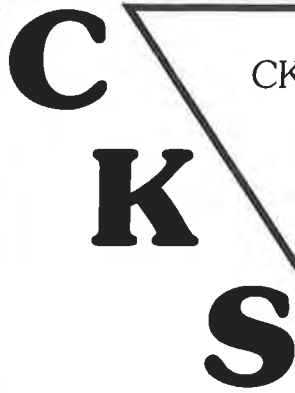
In addition to the options, there is no understanding of the term "EDU." Most residents do not grasp the concept that property owners may be faced with costs for multiple EDU's. Given the fact that a property owner may be faced with costs of two or three times the single EDU estimate, this needs to be better explained and detailed on a parcel by parcel level.

I noticed the BCPC has provided comments regarding an update to our OLDS ordinance. I would like to include our township Planning Commission in creating that ordinance revision.

Lastly, I would like to offer my support for efforts to educate the public in both the Taylorsville and Dolington areas regarding best management practices for sewage and water. I would like to be involved in the development, planning and implementation of the education process as detailed in the plan.

Please do include me on continuing communications from the regulating agencies concerning our plan.

Sincerely,
Mary Ryan
Upper Makefield Township Supervisor



CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901

215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

February 4, 2015
Ref: #6700-78

Upper Makefield Township
1076 Eagle Road
Newtown, PA 18940

Attention: Mary Ryan, Upper Makefield Township Supervisor

Reference: Upper Makefield Township
Draft Act 537 Sewage Facilities Plan Update
Response to Public Comments

Dear Supervisor Ryan:

We are hereby responding to the comments concerning the Township's Draft Act 537 Sewage Facilities Plan Update dated November 6, 2014 ("Draft Plan Update") as outlined within your email correspondence dated January 18, 2015 (copy attached). The sequence of the responses provided below correspond to the questions/comments contained within the aforementioned email correspondence.

**ALTERNATIVE #6; STEP SYSTEM/CENTRALIZED TREATMENT SYSTEM WITH
STREAM DISCHARGE EFFLUENT DISPOSAL: POTENTIAL DEFERRED CONNECTION
CONSIDERATIONS**

A policy decision concerning potential deferred connections to any public/community sewage disposal system that would be implemented to address the long-term sewage disposal needs of the Dolington Area will need to be made by the Board of Supervisors as part of the future implementation process that is projected to occur during the long-term planning period of the Draft Plan Update. The issues raised within your email including; requirements for continued monitoring of On-Lot Sewage Disposal System ("OLDS") conditions within the Dolington Area and associated costs, financing/funding assistance, and any potential benefits associated with the availability to connect to a potential public/community sewage disposal system will need to be considered by Township Officials in deciding if deferred connections will be permitted.

**ALTERNATIVE #6: STEP SYSTEM/CENTRALIZED TREATMENT SYSTEM WITH
STREAM DISCHARGE EFFLUENT DISPOSAL: IMPACTS TO ABUTTING PROPERTIES**

The conceptual screening design illustrated on Figure 28 of the Draft Plan Update can be further refined during the future implementation process to include supplemental landscaping/plantings, ornamental fencing, etc. in an effort to minimize the impact of the centralized treatment system installation that is proposed in conjunction with the above-referenced long-term sewage disposal alternative.

**CONSIDERATION OF ALTERNATIVES INCORPORATING INFRASTRUCTURE
PROPOSED AS PART OF THE POTENTIAL DEVELOPMENT OF THE WHITE FARM
PARCEL**

During the discussions that had occurred over the past year regarding the Draft Plan Update, several Township Officials raised concerns regarding the potential time line for the potential development of the White Farm Parcel. Therefore, it was requested that any long-term sewage disposal alternatives that would rely on the development of the White Farm Parcel and installation of the associated public sewer system infrastructure be eliminated from consideration in the Draft Plan Update. However, should development plans for the White Farm Parcel proceed through the planning/approval process during the short-term planning period of the Draft Plan Update, the Township can potentially include an assessment of the associated impacts, in conjunction with an overall assessment of the currently identified long-term sewage disposal alternatives for the Dolington Area that are included in the Draft Plan Update.

**VIABILITY OF ALTERNATIVE #5: ON-LOT TREATMENT SYSTEMS/EFFLUENT
COLLECTION AND CONVEYANCE SYSTEM WITH STREAM DISCHARGE EFFLUENT
DISPOSAL**

Based upon input provided by the Pennsylvania Department of Environmental Protection ("PA DEP") during the preparation of the Draft Plan Update, the above-referenced alternative would be considered as a viable long-term sewage disposal alternative for the Dolington Area contingent upon confirmation that the potential on-lot treatment systems are capable of meeting the effluent quality requirements established by the Department, and provisions being implemented addressing operation and maintenance of both the public and private facilities that would be constructed in conjunction with this alternative. The aforementioned PA DEP issues are addressed within the Draft Plan Update.

Although Alternative #5 is a viable alternative, the Township has selected Alternative #6: Step System/Centralized Treatment System with Stream Discharge Effluent Disposal as the preferred long-term sewage disposal alternative for the Dolington Area within the Draft Plan Update.

PUBLIC PRESENTATION OF DOLINGTON AREA LONG-TERM SEWAGE DISPOSAL ALTERNATIVES CONTAINED WITHIN THE DRAFT PLAN UPDATE

The long-term sewage disposal alternatives contained within the Draft Plan Update were discussed during several Board of Supervisors meetings conducted in late 2014. The Draft Plan Update must still be presented to the Board of Supervisors for final review/approval once all outside agency reviews have been completed. The Board of Supervisors may conduct as many presentations as deemed necessary to fully vet the Draft Act 537 Plan before taking any action on the Plan Update.

DEFINITION OF “EQUIVALENT DWELLING UNIT” OR “EDU”

The following definition of an “Equivalent Dwelling Unit” or “EDU” will be added to the notes presented in Table 14 of the Draft Plan Update prior to presenting to the Board of Supervisors for review/approval:

“Equivalent Dwelling Unit (EDU) - The estimated amount of capacity utilized by a single-family residential dwelling. A “residential dwelling” shall be a single-family dwelling and each family unit of a multi-family dwelling (apartment, condominium, twin, townhouse, etc.).”

OLDS ORDINANCE UPDATE

It is expected that the Township Planning Commission will be integrally involved in the update of the Township’s existing OLDS Ordinance that is proposed in conjunction with the Draft Plan Update.

FUTURE OLDS EDUCATIONAL EFFORTS FOR DOLINGTON AND TAYLORSVILLE AREAS

Comment acknowledged. We believe your assistance would be beneficial to the proposed OLDS educational efforts.

Thank you for your input concerning the Draft Plan Update. If you should have any questions or require any clarification of the responses detailed herein, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak

Enclosure

cc: David Nyman, Interim Township Manager
✓ File

From: irish4pirates@comcast.net [mailto:irish4pirates@comcast.net]

Sent: Sunday, January 18, 2015 1:44 PM

To: z

Cc: nyman, david; Caporiccio, Judy; kuhns, dave

Subject: 537 comments

Tom Zarko
CKS Engineers

January 18, 2015

Dear Mr. Zarko,

Thank you for your dedicated and professional work on the Upper Makefield 537 Sewage Plan. I have a few comments for the record concerning the draft that is now being considered:

Dolington Area

The preferred Plan #6 STEP is not the least expensive plan. The benefit of Plan #6, as some of my fellow Board of Supervisors opine, is that landowners within the project area will not have to hook-up to the main lines until absolutely necessary. However, I see this as a negative for three reasons:

1. Monitoring of the Dolington Area will need to continue in perpetuity. This is the least appealing to the township taxpayers not in the project area. There is no finite cost to the general taxpayer for this project.
2. Further, I am concerned that this "as needed" approach will inhibit our ability to fully assist the property owners with financing. I expect that only the initial cost will be considered as part of a grant or bond and that the cost at time of connection, (1/3 of the total cost) will be borne solely by the homeowners. I do not foresee a situation where township financing is secured for an unknown period of time and for an unknown number of households.

3. All property owners in the project area will pay an initial cost of approximately \$28,000 per EDU. This cost will be borne by everyone in the area regardless of whether they ever connect to the system. While you have expressed to me that you feel those homeowners benefit by having the ability to hook-up, I remain of the opinion that those homeowners are paying for something they will not benefit from.

I have other concerns about Option #6: The location of the centralized system will have a severe negative impact on properties at 713 and 721 Towerview Drive. Many other homeowners on Towerview and Balderston Drives will also experience negative impact. The centralized system does not have sufficient screening and buffering. There is virtually no set back from the abutting properties. I do not feel this is an equitable situation when there are less costly options that would not have a negative impact on particular property values.

Overall I consider Table 14 to be incomplete. This is not a critique of your document but a criticism of the Board of Supervisors policy. I remain concerned that options, which are available and perhaps less expensive and more efficient are not listed. The rationale for this is an unreasonable fear and lack of understanding of the land development process. In particular the White Tract has preliminary approval. The likelihood that more units would result from considering the extension of the sewer line from White to Dolington is naught. Having served on the Planning Commission for the years when this innovative option was carefully planned, I remain convinced that an extension of the line from Gray WWTP to White to Dolington is a strong contender as the best option and I am disappointed it is not among the list.

I do not feel that Option #5 is a viable option. There are too many variables and margins for error.

Overall, I do not believe the latest preferred options for the Dolington area have been sufficiently vetted for the public. In fact the preferred options in the current draft have not been presented in any detail to the public. In speaking with residents, there is virtually no understanding of what the preferred options consist of. I feel this is a major mistake especially given the previous efforts to educate the public.

In addition to the options, there is no understanding of the term "EDU." Most residents do not grasp the concept that property owners may be faced with costs for multiple EDU's. Given the fact that a property owner may be faced with costs of two or three times the single EDU estimate, this needs to be better explained and detailed on a parcel by parcel level.

I noticed the BCPC has provided comments regarding an update to our OLDS ordinance. I would like to include our township Planning Commission in creating that ordinance revision.

Lastly, I would like to offer my support for efforts to educate the public in both the Taylorsville and Dolington areas regarding best management practices for sewage and water. I would like to be involved in the development, planning and implementation of the education process as detailed in the plan.

Please do include me on continuing communications from the regulating agencies concerning our plan.

Sincerely,
Mary Ryan
Upper Makefield Township Supervisor

Comments on the Update to Upper Makefield Township's Act 537 Plan

Catherine L. Magliocchetti
6 Spring Court
Washington Crossing, PA, 18977
19 January 2015

Thank you for the opportunity to comment on the Upper Makefield Township Act 537 Plan Update. As a resident of Upper Makefield, I request that these comments be officially entered into the record.

Procedure:

- Please confirm that the plan update was properly approved by the Upper Makefield Township Board of Supervisors. When was official public notice provided on the extended 60-day comment period, and were all elements of the public notice requirement met by the township, including publication and proper notice of all required elements?
- Contained in the April 10, 2014 version of the plan update, Table 16, which was previously presented to residents of Upper Makefield during public discussion, and posted on the township's website, contained eight potential sewer service alternatives. Notably those eight alternatives then included the cost-effective alternative Option #8, Lower Pressure Sewer System to Lower Makefield Township, and the cost-effective Option #4, Lower Pressure Sewer System to GTWWTP via White Farm Development. In the most recent version of the plan update presented and commented upon here, both of those alternatives have been removed from consideration without explanation. Why were these two cost-effective options removed from consideration by the township?

Scheduling:

- The plan update states that the township will "...work to refine the preferred long-term sewage disposal alternative in an effort to reduce the currently projected costs that would be imposed on the affected property owners" (page 4).
 - Please clarify the expected level of effort that will be on-going during the first five year period following adoption of the plan update.
- The plan update notes that "It is projected that a long-term sewage disposal alternative for the Dolington Area will be accomplishedby January 2026."
 - Please clarify that this means that the alternative plan will physically be installed and operational by January 2026, and households in the impacted area in Dolington will be hooking up to the alternative system by that date.

Environmental Concerns:

- As noted in the plan update, (page 10), Houghs Creek drains directly to the Delaware River. Based upon the preferred alternative as described in this plan update, effluent from the Dolington units that are connected to the preferred system will flow to the Delaware River via the intermittent stream discharge that will flow through the Veterans' Cemetery.
 - Does the township currently project that only a handful of units will initially hook up to the system in January 2026, and will only those households be responsible for all the fees associated with monitoring for pollutant standards that are necessary to ensure that the water quality of the effluent being discharged into the Hough's Creek tributary is protective of our local water quality as required by PADEP? Are those fees projected in the overall cost of each system, or are those cost to be paid for by the township, not the individual users of the system?
 - What is the frequency of the monitoring that is required by all applicable regulations for this type of system, and does the township anticipate that increased frequency may be necessary should extenuating circumstances arise (i.e., if the system effluent is not meeting discharge standards)?
 - If the monitoring of the effluent reveals that the water quality discharge standards are in violation, what is the process by which compliance will be re-established? Will individual homeowners be singled out for violations and what measures will be taken to assure compliance and compensation for violations (e.g., what if a homeowner unknowingly or unlawfully disposes of chemicals into the system, that will violate discharge standards?)
 - If the effluent discharge fails to meet water quality standards for multiple test cycles and the source of the failure(s) cannot be isolated, what are the potential remedies that might need to be implemented by the township? For example, if the individual on-lot systems fail to meet effluent quality standards, what actions might the township need to take at the site of the effluent collection to remedy high readings of any of the regulated pollutants?
- As generally noted in the plan update, currently there are several homes that are serviced by holding tanks in the study area. However, given the nature of the soils in the Dolington area, along with the small lot sizes and inhospitable water table/bedrock structure in the area, there are potentially more homes in the area that could benefit from connection to an alternative system, rather than use an on-lot system that is likely "legging along," as has been quoted by the township's sewer engineer. It should be noted that not all households in the Dolington Study area agreed to have their properties surveyed and assessed for system failures.
 - Once the township implements an alternative solution in January 2026, will all the homes in the Dolington Area be required to be individually assessed by the township to determine suitability of the existing on-lot system? Will homeowners then be required to hook up to the new alternative system if their current system fails for performance? By what mechanism will residents be compelled to hook up to the township's alternative system?

- As noted in the study, "In Upper Makefield, ground water is the only source of water supply...(and)....in order to maintain its availability, it must be used properly and protected from any source of pollution. Although streams are not used as source of drinking water, they should also be protected from any source of pollution" (page 25). When reviewing the alternative sewer solutions presented in this plan update, it does not appear that the township's "preferred" solution is the most protective of our ground water resources. The Gray Tract waste water treatment plant (WWTP) would likely provide superior effluent treatment, monitoring and control options for the wastewater needs of the Dolington area, over the preferred option listed in this plan.
 - The township should respond to the efficacy of each alternative plan as relating to the water quality protection afforded by each alternative. There appears to be opportunity for variability of effluent discharge quality with the preferred plan, which necessarily relies on good practices by multiple households over the life of the system. The Gray Tract treatment solution, by comparison, offers systematic, routine and standardized operational controls and will allow for a higher degree of confidence with respect to effluent discharge standards. The key concern with the preferred alternative is that multiple households need to be responsible for the overall output of the system -- as noted, "...properly designed, installed, and operated wastewater disposal systems should not be the source of contamination of the water resources." However, one needs to consider in the preferred alternative scenario that the township will be relying upon multiple homeowners ensuring proper operation of their individual systems, which then contribute their effluent to the overall alternative collection system. There are multiple scenarios that one can conceive of where one household acting improperly, whether intentionally or unintentionally, could foul the output of the entire discharge stream. The type of situation that is being created by the preferred alternative solution fundamentally differs from the personal responsibility normally found with the operation of on-lot systems. When a homeowner with a self-contained on-lot disposal system has a malfunction or failure due to improper use, ordinarily the consequences of those actions negatively impact that homeowner and that homeowner is responsible for any consequence that may result from his or her own actions. In this case however, because the effluent is ultimately transported off each homeowner's individual property, there could be a decreased level of care and concern for potential contaminants entering the wastewater stream. That potential, coupled with the lower level of effluent monitoring oversight and correction potential that exists with the type of operation at the alternative Gray Tract system, makes the preferred option less attractive when one considers the potential level of harm that could come from malfunction or misuse of the preferred alternative system.
 - Please compare the effectiveness of effluent treatment from the preferred alternative and the membrane bioreactor plant that is permitted for the Gray Tract WWTP. What specifically are the output parameters of the discharged effluent that can be expected from the preferred system versus those levels expected

from treatment of effluent at the Gray Tract WWTP?

- With respect to the Small Flow Treatment Facility (SFTF) referenced on page 69, please provide real-world, analagous examples of situations where PADEP has approved of these systems in similar circumstances, that is to say where daily, routine treatment of multiple households are using SFTF in a collection system where multiple households are contributing effluent to the system. What size communities are employing this method as an option to treat residential waste from multiple households? How many homes are hooked up to SFTF systems that are PADEP approved and what, if any, issues have been encountered from operation of those systems on the scale that is contemplated for the Dolington area? Based upon current analysis, how many households could potentially be serviced by the SFTF system in the Dolington area? Is the design of the SFTF constrained by a minimum and a maximum number of households that need to, or can potentially hook up to the system?
- The PADEP criteria for use of SFTF requires, "An evaluation of the alternatives available to provide sewage facilities which documents that the use of a SFTF is a technically, environmentally, and administratively acceptable alternative." When compared to the availability of treatment services through the Gray Tract WWTP, as well as connection to the Lower Makefield sewage system, how can the township demonstrate compliance with these three requirements? (page 69).
- Effluent testing for the SFTF systems is reportedly required annually. Given the nature of this system, and its introduction to the township, would not more frequent testing be more protective of our water quality concerns? (page 69). What process is initiated if the effluent discharge does not meet the required standards? If testing is required annually, when is the first date after the system becomes operational that testing is required? Is there a period of acceptance testing for the system, to confirm that discharge water quality standards are being met?
- What expense is anticipated and who will bear the expense for ensuring that, "...compliance with anti-degradation surface water requirements of the PA Clean Streams Law will...be sufficiently documented"?
- On page 70 of the document, Community On-Lot Disposal Systems (CSDS) are referenced as a potential alternative. The plan states that, "Any new community systems installed within Upper Makefield Township must be offered for dedication to the township or would be owned and maintained by a homeowners' association or other entity as may be approved by the township consistent with the township's OLDS Ordinance. Maintenance Agreements, as well as financial and other institutional mechanisms, must be provided in conjunction with any CSDS proposal to ensure long-term viability. Additionally, CSDS must provide for bonding and agreements to ensure future maintenance, or if required, the repair or replacement of the system." By what mechanism have residents been informed of these specific costs and how they will be

assessed if this system is implemented? Does the township intend to pursue a course of action where the CSDS is dedicated to the township, or does the township intend to require the Dolington area residents to form a homeowners' association or other entity to provide for financial and operational agreements?

- On page 91, Alternative No. 5: On-Lot Treatment Systems/Effluent Collection & Conveyance System with Stream Discharge Effluent Disposal, is described, and on Page 100, Alternative No. 6: STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal is described. For each of these alternatives, which essentially require on-lot pretreatment, followed by collection to a community conveyance system for stream effluent discharge, please respond to the following concerns:
 - How many initial hookups are anticipated for this system, based upon the current conditions found in Dolington? Will the expense for setting up the infrastructure necessary to implement this system be borne by all the households in the Dolington Study area, or will the expense only be borne by those who hook up to the system?
 - PADEP has provided PTRs for the effluent quality requirements, and the plan states that "Upper Makefield Township has received confirmation from manufacturers of potential on-lot treatment system equipment that would be used in conjunction with the alternative indicating that the PADEP PTR effluent quality criteria can be satisfied which would make this a viable long-term sewage disposal alternative." Please clarify that individual homeowners in the impacted Dolington Study area will be required to purchase secondary treatment equipment from only the two noted vendors listed in Appendix G of this plan, or will homeowners be at liberty to choose their own contractors for the purpose of sending secondary treated effluent to the community collection system?
 - What happens if one or both of those vendors goes out of business and the homeowner's system subsequently malfunctions? Please clarify that the onus for repairs and replacement rests completely with the homeowner of each individual property, and no township support or compensation will be provided.
 - Will the township commit to updating the list of approved vendors found in Appendix G and assist homeowners with selection of vendors for this equipment in the future?
 - Please provide real-world examples where this equipment is currently being used in the same manner and scale as is contemplated by this alternative.
 - Regarding the installation of the sanitary sewage facilities that would be constructed within the public rights-of-way and/or easements in the Dolington area, can the township confirm that all relevant and applicable set-backs are to be observed for construction of this system, and will proper buffering, shielding and protection of the on site facilities be provided for the community?
 - Will the township need to seek zoning relief in order to pursue the plan's preferred option?
 - Has any special consideration been given to contemplate compensation for those

- homeowners whose properties would now directly abut or face a sewage collection and treatment facility, and the negative impact that will have on their respective property values?
- Do our township experts anticipate that there is a greater potential for litigation given the land use circumstances presented by the preferred option (i.e., siting of waste water treatment facilities in close proximity to a residential area) and if so, has thought been given to the negative impact that a drawn out legal battle would have on the township's ability to implement the preferred option in a timely manner?
 - Can the township provide an estimate for the annual water quality testing required for this system? Who will bear the cost of that testing, only those homeowners who are hooked into the system, all of the households within the Dolington Study area, or will those costs be paid for by the township at-large?
- Given that all the costs in this plan update are presented on an EDU (Equivalent Dwelling Unit) basis, have homeowners in the Dolington area been properly notified as to how many EDUs they would be responsible for under any of the given scenarios?
 - Is there potential for homeowners in this area to deed restrict their properties prior to implementation of this plan update and thus decrease their assigned EDUs, so as to lower their individual cost burden from any selected plan?
 - Table 14 of the plan update provides a breakdown of the total cost that could potentially be incurred by the owner of a property containing a typical single-family dwelling within the Needs Area under each alternative. However, those reading this document and especially those who will be impacted by the outcome of this plan update should recognize that the numbers presented here are directly impacted by the construct of using Equivalent Dwelling Units (EDUs) as the divisor for the costs of each system. Has the township notified property owners who hold two or three EDUs per parcel that they will be responsible for paying two or three times what their neighbors are paying for these systems when the community elements are installed?
 - To be completely transparent, the township should notify each property owner as to how many EDUs he or she will be responsible for under each plan. Given the known conditions present in the Dolington area, property owners should be given every opportunity to restrict the EDUs for their properties, before the township requires these property owners to buy into any sewage treatment plan proposal.
 - Why was the connection to the Lower Makefield Sewage line dropped from this plan update? The original draft presented to the township in April 2014 contained an economically feasible plan to connect to Lower Makefield, as an alternative way to treat sewage from the Dolington area. To remove that option without explanation does a disservice to the residents of Dolington and Upper Makefield, who need to consider all viable alternatives and the costs, environmental and administrative burdens that each alternative presents. Recharge to the watershed should not be the primary concern in this case, but rather how effectively can the resultant effluent be treated? Do we want to

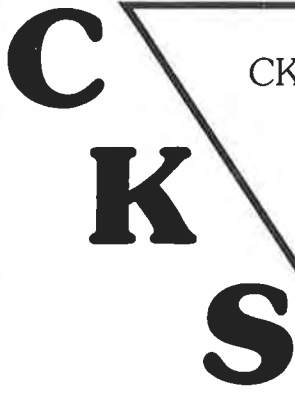
keep effluent in the watershed, even if it is inferior in terms of water quality standards? Would not the better solution be to service waste water needs through an established system where water standards can be assessed and more quickly addressed if needed? Why does Upper Makefield want to keep potentially inferior effluent on site, when an off site treatment option exists that is a rationale engineering solution, more cost-effective, and more protective of the required environmental standards?

- As discussed on page 112 of the plan update, "The proposed wastewater treatment plant that will serve the Gray Tract, White Farm, and Melsky Tract developments, has planning approval for a 55,550 gpd discharge to Houghs Creek. However, the treatment plant is designed to treat up to 80,000 gpd, and the facility could be re-rated to this capacity to accommodate the needs of the Dolington Area if required in conjunction with two of the potential long-term sewage disposal alternatives that are discussed in subsequent sections of this plan update." Was the design criteria of 80,000 gpd in anticipation of receiving wastewater from the Dolington Needs area? Is there potential that the availability of the design capacity may impact future development potential on the Gray Tract or other nearby undeveloped land? If so, would Upper Makefield consider that potential for future development as less favorable than using the capacity to treat the needs of the Dolington area?
- Page 112 - the plan update states that, "the township will continuously monitor the availability of potential Federal, State or local grant programs to address all or portions of the funding requirements in an effort to reduce the costs to the affected property owners." Please clarify, for the preferred alternative described in this plan update, would only the "common" area piping and equipment be subject to grant funding, or would the required equipment on individual private property also be subject to benefit from grant funds? If so, how does the township anticipate that those grant funds would be dispersed to private property owners for installation of equipment on their land, as opposed to in the public right of way?
- Regarding the vendor letters provided in Appendix G, please respond to the following:
 - Please clarify, Appendix G contains only two recommended vendors that can provide the necessary equipment needed for the proposed alternative system in this plan update. Are there no other known vendors that could be identified by our consultants to meet the effluent specifications for this proposed system, and is that not a long term concern from an operational perspective?
 - What level of confidence do our township professional experts have in the ability of these two vendors to meet the needs of our community, both from a performance perspective and a service perspective (e.g., do our experts believe that these vendors can assure that water quality standards will be met, and what is the basis for that belief based upon existing in-use data and do our experts believe that these vendors will be able to provide our residents with timely and efficient servicing of equipment, particularly noting that a failed system will shut down a resident's sewage capabilities until remedied by the vendor).

- Particular to the question of reviewing in-use data from each of the vendors provided in Appendix G, there is a difference between reviewing a company's specifications sheet, which are provided in the plan update appendix, and reviewing real-world data with respect to performance of this required equipment. Is the township relying only on the promises given in the two letters provided in Appendix G, and if so, can the township request further data from these vendors to assure our impacted residents that the expense associated with these required costs are validated? If the township is to require impacted residents in Dolington to buy equipment to install on their property at their own expense, are these residents not owed a higher level of confirmation that this equipment will perform as promised? What assurances do the Dolington area residents have that these companies will meet the effluent standards and provide long term service?
- As noted in their own statement, the Norweco system does not meet the phosphorus limit provided by the PADEP and notes that a chemical feeder unit will be required to meet the 0.5 mg/l phosphorus limit. The company states that, "The combination of chemical and biological treatment **should be adequate** to meet the desired effluent quality, **as long as the systems are operated properly and have the required periodic maintenance**" [emphasis added]. The vendors use of the term "should" versus "will" is concerning. How confident are our township's experts that the treatment combination proposed here will comply with the PADEP's requirements for the effluent discharge? Also, what authority will the township have on homeowners to ensure that, "systems are operated properly and have the required periodic maintenance?"
- Please detail the ultraviolet (UV) requirements that would be required for this system. Will the design parameters of the UV equipment change as more households potentially hook up to the system? Will increased discharges lead to higher operational or replacement costs of UV equipment over the long term?
- Regarding the Orenco system described in Appendix G, impacted homeowners in the Dolington Needs Area should note the language provided by the vendor: "With the aforementioned system requirements **the operator of a two stage AX20 system will need to be vigilant to ensure the two treatment states and the alkalinity and carbon feed units are operated in a way to account for the wider range of waste strength fluctuations that are more easily seen on a per residence basis**" [emphasis added]. Please confirm that the vigilant operation of these units will be totally the responsibility of each impacted homeowner, without any technical or material support from the township. Compare this scenario to one where all waste water, solids and liquids, could potentially be transported off site to the Gray Tract WWTP. Would not that scenario provide a higher level of confidence with respect to meeting effluent discharge requirements, and less burden on homeowners who may ultimately be required to hook into a required system?

Respectfully Submitted,





CKS Engineers, Inc.
88 South Main Street
Doylestown, PA 18901
215-340-0600 • FAX 215-340-1655

David W. Connell, P.E.
Joseph J. Nolan, P.E.
Thomas F. Zarko, P.E.
James F. Weiss
Patrick P. DiGangi, P.E.
Ruth Cunnane

February 11, 2015
Ref: #6700-78

Catherine L. Magliocchetti
6 Spring Court
Washington Crossing, PA 18977

Reference: Upper Makefield Township
Draft Act 537 Sewage Facilities Plan Update
Response to Public Comments

Dear Ms. Magliocchetti:

On behalf of Upper Makefield Township, we are hereby responding to the comments concerning the Township's Draft Act 537 Sewage Facilities Plan Update dated November 6, 2014 ("Draft Plan Update") as outlined within your correspondence dated January 19, 2015 (copy attached). The sequence of the responses provided below correspond to the questions and comments contained within the aforementioned correspondence.

PROCEDURE

Bullet Point #1

The Draft Plan Update has not been approved by the Upper Makefield Township Board of Supervisors ("BOS") as of the date of this letter. The BOS had authorized the release of the Draft Plan Update for outside regulatory agency reviews and public comment at their meeting conducted on October 21, 2014.

The Public Notice pertaining to the Draft Plan Update was advertized in the November 18, 2014 and December 8, 2014 editions of the Bucks County Courier Times. The content of the official Public Notice concerning the Draft Plan Update that was placed within the Courier Times on December 8, 2014 was approved by the Pennsylvania Department of Environmental Protection (PA DEP).

Bullet Point #2

As noted under Section V.A.2 (Pages 60 - 61) of the Draft Plan Update, the potential servicing of any properties within Upper Makefield Township via

connection to Lower Makefield Township sewer facilities would not result in groundwater recharge which is a primary policy of Upper Makefield Township, and is inconsistent with the goals of the Newtown Area Joint Comprehensive Plan. Further, the available capacity within the sections of Lower Makefield Township collection/conveyance system, which could potentially service portions of Upper Makefield Township, as well as the downstream conveyance/treatment facilities, would need to be assessed, and Intermunicipal Sewer Service Agreements would need to be developed, before this alternative could be considered as a viable option. To that end, potential sewage disposal alternatives involving a connection to Lower Makefield Township sewer facilities were eliminated from consideration in the Draft Plan Update.

With regard to the White Farm Parcel, during the discussions that had occurred over the past year regarding the Draft Plan Update, several Township Officials raised concerns regarding the potential timeline for the potential development of the aforementioned property. Therefore, it was requested that any long-term sewage disposal alternatives that would rely on the development of the White Farm Parcel and installation of the associated public sewer system infrastructure be eliminated from consideration in the Draft Plan Update. However, should development plans for the White Farm Parcel proceed through the planning/approval process during the short-term planning period of the Draft Plan Update, the Township can potentially include an assessment of the associated impacts, in conjunction with an overall assessment of the currently identified long-term sewage disposal alternatives for the Dolington Area that are included in the Draft Plan Update.

SCHEDULING

Bullet Point #1

It is anticipated that during the short-term planning period, the Township will keep abreast of any changes or updates in wastewater treatment/disposal technologies that could beneficially affect the design, functioning, layout and/or cost of the facilities currently proposed for the Dolington Area as part of the Draft Plan Update, and also consider any new alternatives that may result therefrom, and incorporate same into the ultimately selected long-term sewage disposal alternative during the future implementation process.

Bullet Point #2

It is projected within the Implementation Schedule contained within the Draft Plan Update related to the Dolington Area that the sanitary sewer facilities associated with the preferred long-term sewage disposal alternative will be completed and available for connections by January 2026.

With regard to requirements for immediate connections to the proposed sanitary sewer facilities when available, this would be a policy decision that would have to be made by the BOS as part of the future implementation process which is projected to occur during the long-term planning period of the Draft Plan Update.

ENVIRONMENTAL CONCERNS

Bullet Point #1

As noted above, a policy decision concerning requirements for immediate connections to the proposed sanitary sewer facilities will be made by the BOS during the future long-term sewage disposal alternative implementation process. It is expected that a separate Sewer Service District encompassing the affected properties within the Dolington Area would be established as part of the aforementioned implementation process and all costs associated with the operation and maintenance of the sanitary sewer facilities will be distributed to the affected users via sewer rental fees.

Based upon the projected capacity of the sanitary sewer facilities proposed in conjunction with the preferred long-term sewage disposal alternative, the PA DEP has advised that monthly effluent quality monitoring will be required.

The Township would be wholly responsible for ensuring that the wastewater treatment facilities proposed in conjunction with the preferred long-term sewage disposal alternative of the Draft Plan Update meet the effluent quality criteria established by the PA DEP. As is the case with any PA DEP permitted treatment facility, any exceedance of established effluent quality parameters would require investigation and resolution by the permittee (in this instance, the Township). The Township will establish regulations concerning allowable wastes that would be permitted to be discharged to the sanitary sewer facilities in conjunction with the establishment of the Sewer Service District mentioned above.

It is fully expected that the wastewater treatment facilities mentioned above would be capable of meeting the effluent quality criteria established by the PA DEP. As a means of ensuring this, as part of the future design/bidding documents related to the construction of the proposed wastewater treatment facilities, the system manufacturer will be contractually required to meet detailed performance criteria based upon the PA DEP effluent quality requirements.

The "on-lot" facilities that are proposed in conjunction with the preferred long-term sewage disposal alternative identified within the Draft Plan Update consists of a septic tank and effluent pumping system which will accommodate domestic wastewater discharged from residential dwellings. The wastewater treatment facility design will be based on the characteristics of such wastewater discharge.

Bullet Point #2

As noted above, a policy decision concerning requirements for immediate connections to the sanitary sewer facilities proposed in conjunction with the Draft Plan Update will be made by the BOS during the future long-term sewage disposal alternative implementation process. The condition of existing on-lot sewage disposal systems ("OLDS") within the Dolington Area will be an important consideration in the decision concerning potential deferred connections. Requirements for connections to sanitary sewer facilities are established by Ordinance, consistent with the procedures outlined within the Pennsylvania Second Class Township Code.

Bullet Point #3

The preferred long-term sewage disposal alternative for the Dolington Area that has been identified within the Draft Plan Update is Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal. With the exception of the on-lot septic tanks and effluent pumping (STEP) systems, the wastewater treatment facilities proposed in conjunction with this alternative would be operated and maintained by the Township, similar to that proposed for the Gray Tract Wastewater Treatment Plant ("WWTP"). Since the effluent from both of these treatment facilities would discharge to a tributary of Houghs Creek, the effluent quality requirements established by the PA DEP to protect water quality would essentially be the same.

Bullet Point #4 - #7

As noted above, the preferred long-term sewage disposal alternative for the Dolington Area as identified in the Draft Plan Update is Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal. This alternative includes the construction of a centralized treatment system which will accommodate wastewater flows from all properties within the Dolington Area and will be operated and maintained by the Township. As such, the aforementioned treatment system would not be considered as a "Small Flow Treatment Facility" in accordance with PA DEP regulations and, therefore, the comments provided would not be applicable to the preferred long-term sewage disposal alternative identified within the Draft Plan Update.

Bullet Point #8

A potential Community Sewage Disposal System ("CSDS") was included as a potential alternative (Alternative #3) to address long-term sewage disposal needs of the Dolington Area within the Draft Plan Update. However, this alternative was not selected as the preferred long-term sewage disposal alternative for the Dolington Area and, therefore, the associated operation and maintenance issues related to the CSDS Alternative would not apply.

Bullet Point #9

Please refer to the response provided under Environmental Concerns; Bullet Point #1 above for information concerning immediate connection requirements. It is expected that the funding of the public components of the sanitary sewer facility infrastructure proposed in conjunction with the preferred long-term sewage disposal alternative proposed as part of the Draft Plan Update for the Dolington Area will be imposed on the affected property owners via Special Purpose Tapping Tees. However, the Township will continuously monitor the availability of potential Federal, State or Local grant programs to address all or portions of the aforementioned funding requirements in an effort to reduce the cost to the affected property owners.

Alternative #5; On-Lot Treatment System/Effluent Collection & Conveyance System with Stream Discharge Effluent Disposal was included as a potential alternative to address the long-term sewage disposal needs of the Dolington Area within the Draft Plan Update. However, this alternative was not selected as the preferred long-term sewage disposal alternative for the Dolington Area and, therefore, the comments concerning vendor selection for the associated on-lot treatment systems would not apply.

PA DEP representatives have advised that Septic Tank Effluent Pumping (STEP) Systems similar to that proposed in conjunction with the preferred long-term sewage disposal alternative for the Dolington Area as identified within the Draft Plan Update are currently in service throughout Pennsylvania at the following locations:

- Bryn Athyn Borough, Montgomery County
- East St. Clair Township, Bedford County
- Oliver Township, Perry County (under construction)
- Nelson Township, Tioga County
- Abbott Township, Potter County
- Madison Township, Lackawanna County
- Liberty Township, Adams County
- Sullivan Township, Tioga County
- Blacksville Township, Greene County

The centralized treatment system proposed in conjunction with the preferred long-term sewage disposal alternative identified in the Draft Plan Update would be considered a public utility which would be installed within the existing Township-owned Balderston Drive right-of-way. The Township would be required to obtain any/all Federal, State, and local approvals needed to install the proposed sanitary sewer facilities at the future time of implementation of the proposed long-term sewage disposal alternative for the Dolington Area. As indicated within the Draft Plan Update (Refer to Figure 28 and Table 13), perimeter fencing and buffer screening/plantings are proposed in conjunction with the construction of the centralized treatment system to minimize the impact of the installation on abutting properties within the Dolington Area neighborhood.

The estimated cost associated with the monthly centralized treatment system effluent monitoring required by the PA DEP would be approximately \$4,500. This cost would be part of the overall operation and maintenance expense of the treatment facility and will be included as part of the sewer rental rates charged to the system users.

Bullet Points #10 and #11

An Equivalent Dwelling Unit ("EDU") basis was used for the purpose of calculating a Special Purpose Tapping Fee related to the various long-term sewage disposal alternatives for the Dolington Area that were included within the Draft Plan Update. However, there are a number of methods that can be used by a municipality to determine Special Purpose Tapping Fees (i.e. front foot assessment, benefit assessment, etc.). As noted within Section V.H (Page 104) of the Draft Plan Update, the actual basis used to determine the Special Purpose Tapping Fee that will be assessed to the property owners within the Dolington Area would need to be determined by the Township (BOS Policy Decision) prior to the implementation of the selected long-term sewage disposal alternative. Information concerning the various assessment methods and resulting costs to the affected property owners would be presented and discussed in the future at the time of implementation of the selected long-term sewage disposal alternative.

Bullet Point #12

Please refer to the response provided under Procedure; Bullet Point #2 for information concerning consideration of the potential servicing of properties within Upper Makefield Township via a connection to Lower Makefield Township sewer facilities.

Bullet Point #13

The original basis of design of the Gray Tract WWTP was based on 55,550 gallons per day to accommodate wastewater flows from all connections associated with the Gray Tract Subdivision, White Farm Parcel, Melsky Tract Subdivision and future connection of 14 existing dwellings located along Creamery Road. However, the actual capacity of the treatment plant will exceed the original design basis, as this is dictated by the equipment sizing standards developed by the treatment plant manufacturer. The difference in actual capacity vs. the original design capacity is sufficient to accommodate the projected wastewater flows from the Dolington Area. There are no other developments in the vicinity of the Gray Tract WWTP that have received Township authorization to connect.

Bullet Point #14

It is anticipated that potential grant funds for sanitary sewer facilities improvement projects similar to those identified in the Draft Plan Update would be restricted to public components, rather than improvements that would need to be installed on private properties. However, the Township is committed to investigating all potential grant opportunities that may be available during the short-term planning period of the Draft Plan Update in an effort to reduce all costs that would be borne by the affected property owners.

Bullet Point #15

As noted above, Alternative #5; On-Lot Treatment Systems/Effluent Collection and Conveyance System with Stream Discharge Effluent Disposal was included as a potential alternative to address the long-term sewage disposal needs of the Dolington Area within the Draft Plan Update. However, this alternative was not selected as the preferred long-term sewage disposal alternative for the Dolington Area and, therefore, the comments concerning on-lot treatment system performance would not apply.

Thank you for your input concerning the Draft Plan Update. If you should have any questions or require any clarification of the information provided above, please do not hesitate to contact me.

Very truly yours,
CKS ENGINEERS, INC.
Township Water/Sewer Consultants

Thomas F. Zarko, P.E.

TFZ/mak

Enclosure

cc: David Nyman, Interim Township Manager
File

Comments on the Update to Upper Makefield Township's Act 537 Plan

Catherine L. Magliocchetti
6 Spring Court
Washington Crossing, PA, 18977
19 January 2015

Thank you for the opportunity to comment on the Upper Makefield Township Act 537 Plan Update. As a resident of Upper Makefield, I request that these comments be officially entered into the record.

Procedure:

- Please confirm that the plan update was properly approved by the Upper Makefield Township Board of Supervisors. When was official public notice provided on the extended 60-day comment period, and were all elements of the public notice requirement met by the township, including publication and proper notice of all required elements?
- Contained in the April 10, 2014 version of the plan update, Table 16, which was previously presented to residents of Upper Makefield during public discussion, and posted on the township's website, contained eight potential sewer service alternatives. Notably those eight alternatives then included the cost-effective alternative Option #8, Lower Pressure Sewer System to Lower Makefield Township, and the cost-effective Option #4, Lower Pressure Sewer System to GTWWTP via White Farm Development. In the most recent version of the plan update presented and commented upon here, both of those alternatives have been removed from consideration without explanation. Why were these two cost-effective options removed from consideration by the township?

Scheduling:

- The plan update states that the township will "...work to refine the preferred long-term sewage disposal alternative in an effort to reduce the currently projected costs that would be imposed on the affected property owners" (page 4).
 - Please clarify the expected level of effort that will be on-going during the first five year period following adoption of the plan update.
- The plan update notes that "It is projected that a long-term sewage disposal alternative for the Dolington Area will be accomplishedby January 2026."
 - Please clarify that this means that the alternative plan will physically be installed and operational by January 2026, and households in the impacted area in Dolington will be hooking up to the alternative system by that date.

Environmental Concerns:

- As noted in the plan update, (page 10), Houghs Creek drains directly to the Delaware River. Based upon the preferred alternative as described in this plan update, effluent from the Dolington units that are connected to the preferred system will flow to the Delaware River via the intermittent stream discharge that will flow through the Veterans' Cemetery.
 - Does the township currently project that only a handful of units will initially hook up to the system in January 2026, and will only those households be responsible for all the fees associated with monitoring for pollutant standards that are necessary to ensure that the water quality of the effluent being discharged into the Hough's Creek tributary is protective of our local water quality as required by PADEP? Are those fees projected in the overall cost of each system, or are those cost to be paid for by the township, not the individual users of the system?
 - What is the frequency of the monitoring that is required by all applicable regulations for this type of system, and does the township anticipate that increased frequency may be necessary should extenuating circumstances arise (i.e., if the system effluent is not meeting discharge standards)?
 - If the monitoring of the effluent reveals that the water quality discharge standards are in violation, what is the process by which compliance will be re-established? Will individual homeowners be singled out for violations and what measures will be taken to assure compliance and compensation for violations (e.g., what if a homeowner unknowingly or unlawfully disposes of chemicals into the system, that will violate discharge standards?)
 - If the effluent discharge fails to meet water quality standards for multiple test cycles and the source of the failure(s) cannot be isolated, what are the potential remedies that might need to be implemented by the township? For example, if the individual on-lot systems fail to meet effluent quality standards, what actions might the township need to take at the site of the effluent collection to remedy high readings of any of the regulated pollutants?
- As generally noted in the plan update, currently there are several homes that are serviced by holding tanks in the study area. However, given the nature of the soils in the Dolington area, along with the small lot sizes and inhospitable water table/bedrock structure in the area, there are potentially more homes in the area that could benefit from connection to an alternative system, rather than use an on-lot system that is likely "legging along," as has been quoted by the township's sewer engineer. It should be noted that not all households in the Dolington Study area agreed to have their properties surveyed and assessed for system failures.
 - Once the township implements an alternative solution in January 2026, will all the homes in the Dolington Area be required to be individually assessed by the township to determine suitability of the existing on-lot system? Will homeowners then be required to hook up to the new alternative system if their current system fails for performance? By what mechanism will residents be compelled to hook up to the township's alternative system?

- As noted in the study, "In Upper Makefield, ground water is the only source of water supply...(and)....in order to maintain its availability, it must be used properly and protected from any source of pollution. Although streams are not used as source of drinking water, they should also be protected from any source of pollution" (page 25). When reviewing the alternative sewer solutions presented in this plan update, it does not appear that the township's "preferred" solution is the most protective of our ground water resources. The Gray Tract waste water treatment plant (WWTP) would likely provide superior effluent treatment, monitoring and control options for the wastewater needs of the Dolington area, over the preferred option listed in this plan.
 - The township should respond to the efficacy of each alternative plan as relating to the water quality protection afforded by each alternative. There appears to be opportunity for variability of effluent discharge quality with the preferred plan, which necessarily relies on good practices by multiple households over the life of the system. The Gray Tract treatment solution, by comparison, offers systematic, routine and standardized operational controls and will allow for a higher degree of confidence with respect to effluent discharge standards. The key concern with the preferred alternative is that multiple households need to be responsible for the overall output of the system -- as noted, "...properly designed, installed, and operated wastewater disposal systems should not be the source of contamination of the water resources." However, one needs to consider in the preferred alternative scenario that the township will be relying upon multiple homeowners ensuring proper operation of their individual systems, which then contribute their effluent to the overall alternative collection system. There are multiple scenarios that one can conceive of where one household acting improperly, whether intentionally or unintentionally, could foul the output of the entire discharge stream. The type of situation that is being created by the preferred alternative solution fundamentally differs from the personal responsibility normally found with the operation of on-lot systems. When a homeowner with a self-contained on-lot disposal system has a malfunction or failure due to improper use, ordinarily the consequences of those actions negatively impact that homeowner and that homeowner is responsible for any consequence that may result from his or her own actions. In this case however, because the effluent is ultimately transported off each homeowner's individual property, there could be a decreased level of care and concern for potential contaminants entering the wastewater stream. That potential, coupled with the lower level of effluent monitoring oversight and correction potential that exists with the type of operation at the alternative Gray Tract system, makes the preferred option less attractive when one considers the potential level of harm that could come from malfunction or misuse of the preferred alternative system.
 - Please compare the effectiveness of effluent treatment from the preferred alternative and the membrane bioreactor plant that is permitted for the Gray Tract WWTP. What specifically are the output parameters of the discharged effluent that can be expected from the preferred system versus those levels expected

from treatment of effluent at the Gray Tract WWTP?

- With respect to the Small Flow Treatment Facility (SFTF) referenced on page 69, please provide real-world, analogous examples of situations where PADEP has approved of these systems in similar circumstances, that is to say where daily, routine treatment of multiple households are using SFTF in a collection system where multiple households are contributing effluent to the system. What size communities are employing this method as an option to treat residential waste from multiple households? How many homes are hooked up to SFTF systems that are PADEP approved and what, if any, issues have been encountered from operation of those systems on the scale that is contemplated for the Dolington area? Based upon current analysis, how many households could potentially be serviced by the SFTF system in the Dolington area? Is the design of the SFTF constrained by a minimum and a maximum number of households that need to, or can potentially hook up to the system?
- The PADEP criteria for use of SFTF requires, "An evaluation of the alternatives available to provide sewage facilities which documents that the use of a SFTF is a technically, environmentally, and administratively acceptable alternative." When compared to the availability of treatment services through the Gray Tract WWTP, as well as connection to the Lower Makefield sewage system, how can the township demonstrate compliance with these three requirements? (page 69).
- Effluent testing for the SFTF systems is reportedly required annually. Given the nature of this system, and its introduction to the township, would not more frequent testing be more protective of our water quality concerns? (page 69). What process is initiated if the effluent discharge does not meet the required standards? If testing is required annually, when is the first date after the system becomes operational that testing is required? Is there a period of acceptance testing for the system, to confirm that discharge water quality standards are being met?
- What expense is anticipated and who will bear the expense for ensuring that, "...compliance with anti-degradation surface water requirements of the PA Clean Streams Law will...be sufficiently documented"?
- On page 70 of the document, Community On-Lot Disposal Systems (CSDS) are referenced as a potential alternative. The plan states that, "Any new community systems installed within Upper Makefield Township must be offered for dedication to the township or would be owned and maintained by a homeowners' association or other entity as may be approved by the township consistent with the township's OLDS Ordinance. Maintenance Agreements, as well as financial and other institutional mechanisms, must be provided in conjunction with any CSDS proposal to ensure long-term viability. Additionally, CSDS must provide for bonding and agreements to ensure future maintenance, or if required, the repair or replacement of the system." By what mechanism have residents been informed of these specific costs and how they will be

assessed if this system is implemented? Does the township intend to pursue a course of action where the CSDS is dedicated to the township, or does the township intend to require the Dolington area residents to form a homeowners' association or other entity to provide for financial and operational agreements?

- On page 91, Alternative No. 5: On-Lot Treatment Systems/Effluent Collection & Conveyance System with Stream Discharge Effluent Disposal, is described, and on Page 100, Alternative No. 6: STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal is described. For each of these alternatives, which essentially require on-lot pretreatment, followed by collection to a community conveyance system for stream effluent discharge, please respond to the following concerns:
 - How many initial hookups are anticipated for this system, based upon the current conditions found in Dolington? Will the expense for setting up the infrastructure necessary to implement this system be borne by all the households in the Dolington Study area, or will the expense only be borne by those who hook up to the system?
 - PADEP has provided PTRs for the effluent quality requirements, and the plan states that "Upper Makefield Township has received confirmation from manufacturers of potential on-lot treatment system equipment that would be used in conjunction with the alternative indicating that the PADEP PTR effluent quality criteria can be satisfied which would make this a viable long-term sewage disposal alternative." Please clarify that individual homeowners in the impacted Dolington Study area will be required to purchase secondary treatment equipment from only the two noted vendors listed in Appendix G of this plan, or will homeowners be at liberty to choose their own contractors for the purpose of sending secondary treated effluent to the community collection system?
 - What happens if one or both of those vendors goes out of business and the homeowner's system subsequently malfunctions? Please clarify that the onus for repairs and replacement rests completely with the homeowner of each individual property, and no township support or compensation will be provided.
 - Will the township commit to updating the list of approved vendors found in Appendix G and assist homeowners with selection of vendors for this equipment in the future?
 - Please provide real-world examples where this equipment is currently being used in the same manner and scale as is contemplated by this alternative.
 - Regarding the installation of the sanitary sewage facilities that would be constructed within the public rights-of-way and/or easements in the Dolington area, can the township confirm that all relevant and applicable set-backs are to be observed for construction of this system, and will proper buffering, shielding and protection of the on site facilities be provided for the community?
 - Will the township need to seek zoning relief in order to pursue the plan's preferred option?
 - Has any special consideration been given to contemplate compensation for those

- homeowners whose properties would now directly abut or face a sewage collection and treatment facility, and the negative impact that will have on their respective property values?
- Do our township experts anticipate that there is a greater potential for litigation given the land use circumstances presented by the preferred option (i.e., siting of waste water treatment facilities in close proximity to a residential area) and if so, has thought been given to the negative impact that a drawn out legal battle would have on the township's ability to implement the preferred option in a timely manner?
 - Can the township provide an estimate for the annual water quality testing required for this system? Who will bear the cost of that testing, only those homeowners who are hooked into the system, all of the households within the Dolington Study area, or will those costs be paid for by the township at-large?
- Given that all the costs in this plan update are presented on an EDU (Equivalent Dwelling Unit) basis, have homeowners in the Dolington area been properly notified as to how many EDUs they would be responsible for under any of the given scenarios?
 - Is there potential for homeowners in this area to deed restrict their properties prior to implementation of this plan update and thus decrease their assigned EDUs, so as to lower their individual cost burden from any selected plan?
 - Table 14 of the plan update provides a breakdown of the total cost that could potentially be incurred by the owner of a property containing a typical single-family dwelling within the Needs Area under each alternative. However, those reading this document and especially those who will be impacted by the outcome of this plan update should recognize that the numbers presented here are directly impacted by the construct of using Equivalent Dwelling Units (EDUs) as the divisor for the costs of each system. Has the township notified property owners who hold two or three EDUs per parcel that they will be responsible for paying two or three times what their neighbors are paying for these systems when the community elements are installed?
 - To be completely transparent, the township should notify each property owner as to how many EDUs he or she will be responsible for under each plan. Given the known conditions present in the Dolington area, property owners should be given every opportunity to restrict the EDUs for their properties, before the township requires these property owners to buy into any sewage treatment plan proposal.
 - Why was the connection to the Lower Makefield Sewage line dropped from this plan update? The original draft presented to the township in April 2014 contained an economically feasible plan to connect to Lower Makefield, as an alternative way to treat sewage from the Dolington area. To remove that option without explanation does a disservice to the residents of Dolington and Upper Makefield, who need to consider all viable alternatives and the costs, environmental and administrative burdens that each alternative presents. Recharge to the watershed should not be the primary concern in this case, but rather how effectively can the resultant effluent be treated? Do we want to

keep effluent in the watershed, even if it is inferior in terms of water quality standards? Would not the better solution be to service waste water needs through an established system where water standards can be assessed and more quickly addressed if needed? Why does Upper Makefield want to keep potentially inferior effluent on site, when an off site treatment option exists that is a rationale engineering solution, more cost-effective, and more protective of the required environmental standards?

- As discussed on page 112 of the plan update, "The proposed wastewater treatment plant that will serve the Gray Tract, White Farm, and Melsky Tract developments, has planning approval for a 55,550 gpd discharge to Houghs Creek. However, the treatment plant is designed to treat up to 80,000 gpd, and the facility could be re-rated to this capacity to accommodate the needs of the Dolington Area if required in conjunction with two of the potential long-term sewage disposal alternatives that are discussed in subsequent sections of this plan update." Was the design criteria of 80,000 gpd in anticipation of receiving wastewater from the Dolington Needs area? Is there potential that the availability of the design capacity may impact future development potential on the Gray Tract or other nearby undeveloped land? If so, would Upper Makefield consider that potential for future development as less favorable than using the capacity to treat the needs of the Dolington area?
- Page 112 - the plan update states that, "the township will continuously monitor the availability of potential Federal, State or local grant programs to address all or portions of the funding requirements in an effort to reduce the costs to the affected property owners." Please clarify, for the preferred alternative described in this plan update, would only the "common" area piping and equipment be subject to grant funding, or would the required equipment on individual private property also be subject to benefit from grant funds? If so, how does the township anticipate that those grant funds would be dispersed to private property owners for installation of equipment on their land, as opposed to in the public right of way?
- Regarding the vendor letters provided in Appendix G, please respond to the following:
 - Please clarify, Appendix G contains only two recommended vendors that can provide the necessary equipment needed for the proposed alternative system in this plan update. Are there no other known vendors that could be identified by our consultants to meet the effluent specifications for this proposed system, and is that not a long term concern from an operational perspective?
 - What level of confidence do our township professional experts have in the ability of these two vendors to meet the needs of our community, both from a performance perspective and a service perspective (e.g., do our experts believe that these vendors can assure that water quality standards will be met, and what is the basis for that belief based upon existing in-use data and do our experts believe that these vendors will be able to provide our residents with timely and efficient servicing of equipment, particularly noting that a failed system will shut down a resident's sewage capabilities until remedied by the vendor).

- o Particular to the question of reviewing in-use data from each of the vendors provided in Appendix G, there is a difference between reviewing a company's specifications sheet, which are provided in the plan update appendix, and reviewing real-world data with respect to performance of this required equipment. Is the township relying only on the promises given in the two letters provided in Appendix G, and if so, can the township request further data from these vendors to assure our impacted residents that the expense associated with these required costs are validated? If the township is to require impacted residents in Dolington to buy equipment to install on their property at their own expense, are these residents not owed a higher level of confirmation that this equipment will perform as promised? What assurances do the Dolington area residents have that these companies will meet the effluent standards and provide long term service?
- o As noted in their own statement, the Norweco system does not meet the phosphorus limit provided by the PADEP and notes that a chemical feeder unit will be required to meet the 0.5 mg/l phosphorus limit. The company states that, "The combination of chemical and biological treatment **should be adequate** to meet the desired effluent quality, **as long as the systems are operated properly and have the required periodic maintenance**" [emphasis added]. The vendors use of the term "should" versus "will" is concerning. How confident are our township's experts that the treatment combination proposed here will comply with the PADEP's requirements for the effluent discharge? Also, what authority will the township have on homeowners to ensure that, "systems are operated properly and have the required periodic maintenance?"
- o Please detail the ultraviolet (UV) requirements that would be required for this system. Will the design parameters of the UV equipment change as more households potentially hook up to the system? Will increased discharges lead to higher operational or replacement costs of UV equipment over the long term?
- o Regarding the Orenco system described in Appendix G, impacted homeowners in the Dolington Needs Area should note the language provided by the vendor: "With the aforementioned system requirements **the operator of a two stage AX20 system will need to be vigilant to ensure the two treatment states and the alkalinity and carbon feed units are operated in a way to account for the wider range of waste strength fluctuations that are more easily seen on a per residence basis**" [emphasis added]. Please confirm that the vigilant operation of these units will be totally the responsibility of each impacted homeowner, without any technical or material support from the township. Compare this scenario to one where all waste water, solids and liquids, could potentially be transported off site to the Gray Tract WWTP. Would not that scenario provide a higher level of confidence with respect to meeting effluent discharge requirements, and less burden on homeowners who may ultimately be required to hook into a required system?

Respectfully Submitted,



APPENDIX J

MUNICIPAL ADOPTING RESOLUTION

Upper Makefield *Township*

Bucks County, Pennsylvania
COMMONWEALTH OF PENNSYLVANIA

RESOLUTION NO. 2015-03-17-01

ADOPTING AND SUBMITTING OFFICIAL SEWAGE FACILITIES PLAN (ACT 537) TO PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR APPROVAL AS AN UPDATE AND REVISION TO THE OFFICIAL PLAN OF THE TOWNSHIP OF UPPER MAKEFIELD.

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

WHEREAS, CKS Engineers, Inc. has prepared a Sewage Facilities Plan Update, dated February 18, 2015 ("Plan Update"), which addresses the sewage disposal needs of Upper Makefield Township, and

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

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

The primary findings and course of action to be implemented in conjunction with the above-referenced Plan Update are as follows:

- The majority of properties within Upper Makefield Township ("Township") are served by On-Lot Sewage Disposal Systems ("OLDS"). With the exception of isolated instances, based upon the evaluation performed in conjunction with the Plan Update, the continued use of OLDS will address the long-term sewage disposal needs of the majority of properties within the Township.
- In conjunction with the continuing use of OLDS within the Township, the Township will continue to implement its Sewage Management Program, which includes enforcement of its OLDS Ordinance.



- The existing sewage facilities consisting of private and/or community treatment plants or public sewage treatment facilities that currently serve specific properties or areas within the Township were evaluated and determined to be adequate to satisfy current/future sewage disposal needs of the properties and/or areas served. Current operation and maintenance requirements for these facilities will be continued.
- Two “Needs Areas” were identified in the Township with limited histories of malfunctioning OLDS. The aforementioned Needs Areas include the Taylorsville Area, which is located in the vicinity of the Taylorsville Road (S.R. 2071)/Washington Crossing Road (S.R. 0532) intersection, and the Dolington Area, which is located in the vicinity of the Washington Crossing Road (S.R. 0532)/Lindenhurst Road (S.R. 2069) intersection.
- It was determined that the short-term sewage disposal needs of the Taylorsville and Dolington Areas for the Five-Year Planning Period of the Plan Update can be effectively addressed through water conservation, increased system oversight/maintenance, educating property owners on OLDS use/maintenance and amendment of the Township’s OLDS Ordinance to incorporate additional maintenance provisions specific to these Areas. The Township will also provide input to the property owners where the OLDS Surveys identified operational problems, with regard to potential OLDS solutions with input/assistance from the Bucks County Health Department. With regard to the Taylorsville Area, if this short-term approach is found to be effective after five years of implementation, it will be considered to also satisfy the long-term sewage disposal needs of the Area for the Ten-Year Planning Period of the Plan Update.
- It was determined that Alternative #6; STEP System/Centralized Treatment System with Stream Discharge Effluent Disposal would be the preferred option to address the long-term sewage disposal needs of the Dolington Area.
- Activities associated with the implementation of the selected alternative to address the short-term sewage disposal needs for the Taylorsville Area during the Five-Year Planning Period are scheduled to commence immediately after approval of the Plan Update by the Department. If this short-term approach is found to be effective after five years of implementation, it will continue and will be considered to also satisfy the long-term sewage disposal needs of the area for the Ten-Year Planning Period.
- Activities associated with the implementation of the selected alternative to address the short-term sewage disposal needs for the Dolington Area during the Five-Year Planning Period is scheduled to commence immediately after approval of the Plan Update by the Department.
- During the short-term (5 Year) planning period of the Plan Update, the Township is committed to continuing to work to refine the preferred long-term sewage disposal alternative pertaining to the Dolington Area in an effort to reduce currently projected costs that would be imposed on the affected property owners. Subsequently, during the initial stage of the long-term (10 Year) planning period of the Plan Update, the Township will re-assess the currently identified long-term sewage disposal alternatives, identify any new alternatives that may be available based upon changes in current conditions and/or technology that may potentially occur over the short-term planning period, and initiate the



administrative, legal, engineering, and procedural efforts associated with the implementation of the selected long-term sewage disposal alternative for the Dolington Area. It is projected that a long-term sewage disposal alternative for the Dolington Area will be accomplished within the Ten-Year Planning Period, by January 2026.

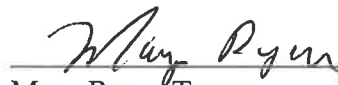
This resolution was passed at a regular meeting of the Board of Supervisors, Upper Makefield Township on March 17, 2015.

BOARD OF SUPERVISORS
UPPER MAKEFIELD TOWNSHIP



Thomas F. Cino, Chair

Larry S. Breeden, Vice Chair



Mary Ryan, Treasurer



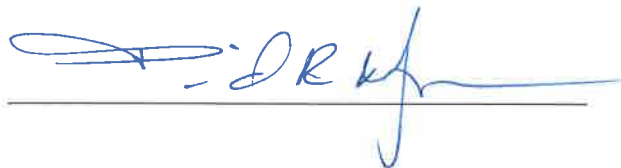
Daniel Rattigan

Mike Tierney

I, David R. Nyma, Secretary,
Upper Makefield Township Board of Supervisors, hereby certify that the foregoing is a true copy
of the Township's Resolution No. 2015-03-17-01, adopted March 17, 2015.

AUTHORIZED SIGNATURE

TOWNSHIP SEAL



APPENDIX K

ACT 537 PLAN CONTENT AND ENVIRONMENTAL ASSESSMENT CHECKLIST



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

Act 537 Plan Content and Environmental Assessment Checklist

PART 1 GENERAL INFORMATION

A. Project Information

1. Project Name Township of Upper Makefield, Bucks County, Pennsylvania, Act 537 Sewage Facilities Plan Update

2. Brief Project Description An Act 537 Sewage Facilities Plan Update has been prepared to address the present and future sewage disposal needs of Upper Makefield Township, Bucks County, Pennsylvania. The existing Upper Makefield Township Act 537 Plan has not been revised since its completion in 1979. This Plan Update has been prepared in accordance with 25 PA Code, Chapter 71, "Administration of Sewage Facilities Planning Program."

B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
Upper Makefield Township	Bucks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Nyman	David	R		Interim Township Mgr.
Additional Individual Last Name	First Name	MI	Suffix	Title
Municipality Mailing Address Line 1		Mailing Address Line 2		
1076 Eagle Road				
Address Last Line -- City		State	ZIP+4	
Newtown		PA	18940	
Phone + Ext.	FAX (optional)	Email (optional)		
215-968-3340	215-968-9228	manager@uppermakefield.org		

C. Site Information

Site (or Project) Name	(Municipal Name) Act 537 Plan
See Above	
Site Location Line 1	Site Location Line 2

D. Project Consultant Information

Last Name	First Name	MI	Suffix
Zarko	Thomas	F	PE
Title	Consulting Firm Name		
Upper Makefield Twp. Water/Sewer Consultant	CKS Engineers, Inc.		
Mailing Address Line 1	Mailing Address Line 2		
88 South Main Street			
Address Last Line -- City	State	ZIP+4	Country
Doylestown	PA	18901	USA
Email	Phone + Ext.	FAX	
tfzarko@cksengineers.com	215-340-0600	215-340-1655	

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-iv</u>	1. Table of Contents
_____	<u>1-4</u>	2. Plan Summary
_____	<u>1-4</u>	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - Title 25, §71.21.a.7.i).
_____	<u>1-4</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>1-4,</u> <u>105-106,</u> <u>112-113</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>1-4</u>	D. Identify the municipal commitments necessary to implement the Plan. (Reference Title 25, §71.21.a.7.iii).
_____	<u>4, 118-119</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>Appendix</u> <u>J</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>Appendix I</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>Appendix</u> <u>H</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>Appendix I</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>118-119</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>Appendix 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>5</u>	I. Previous Wastewater Planning
<u> </u>	<u>5-9</u>	A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
<u> </u>	<u>5-9</u>	1. Previously undertaken under the Sewage Facilities Act (Act 537). (Reference-Act 537, Section 5 §d.1).
<u> </u>	<u>5-9</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>5-9</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>9</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>10</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>6 & 10</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>10-11</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>12-20</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>20-24</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>24 & 26-27</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>24-25, 28-31</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>31-32</u>	G. Wetlands-Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per USDA, SCS mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference-Title 25, §71.21.a.1.v). Appendix B, Section II.I of the Planning Guide.

_____	<u>33</u>	III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs
		A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:
_____	<u>33-34</u>	1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference-Title 25, §71.21a.2.i.A).
_____	<u>33-36</u>	2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's NPDES permitted capacity, and the Clean Streams Law permit number. (Reference-Title 25, §71.21.a.2.i.A).
_____	<u>36</u>	3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under Title 25, Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference-Title 25, §71.21.a.2.i.B).
_____	<u>33-36,</u> <u>Appendix</u> <u>A</u>	4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.i & ii).
_____	<u>36,</u> <u>Appendix</u> <u>D</u>	5. A detailed description of the municipality's operation and maintenance requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).
_____	<u>33</u>	6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference-Title 25, §71.21.a.4.i & ii).
_____	<u>37-38</u>	B. Using DEP's publication titled <i>Sewage Disposal Needs Identification</i> , identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:
_____	<u>37-38</u>	1. The types of onlot systems in use. (Reference-Title 25, §71.21.a.2.ii.A).
_____	<u>38-48,</u> <u>Appendi-</u> <u>ces B & C</u>	2. A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Sewage Facilities Act, the Clean Stream Law or regulations promulgated thereunder. (Reference-Title 25, §71.21.a.2.ii.B).
_____	<u>38-48,</u> <u>Appendi-</u> <u>ces B & C</u>	3. A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and Title 25 Chapter 73 (relating to standards for sewage disposal facilities). (Reference-Title 25, §71.21.a.2.ii.C).
_____	<u>38-48,</u> <u>Appendi-</u> <u>ces B & C</u>	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).
_____	<u>50-52,</u> <u>Appendix</u> <u>D</u>	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).

_____	<u>52</u>	C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:
_____	<u>52</u>	1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference-Title 25 §71.71).
_____	<u>52</u>	2. Quantities of the types of sludges or septage generated. (Reference-Title 25 §71.71).
_____	<u>52</u>	3. Present disposal methods, locations, capacities and transportation methods. (Reference-Title 25 §71.71).
_____	<u>53</u>	IV. Future Growth and Land Development
_____		A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
_____	<u>53-55</u>	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).
_____	<u>53-55</u>	2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference – Title 25§71.21.a.3.iv).
_____	<u>53-55,</u> <u>Appendix</u> <u>E</u>	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.
_____	<u>56</u>	B. Delineate and describe the following through map, text and analysis.
_____	<u>56-59</u>	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).
_____	<u>53-59</u>	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).
_____	<u>56-59</u>	3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference-Title 25, §71.21.a.1.iv). (Reference-Title 25, §71.21.a.3.iii).
_____	<u>53-59</u>	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
_____	<u>57</u>	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).

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

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

- 60 1. The potential for regional wastewater treatment. (Reference-Title 25, §71.21.a.4).
- 60-61,
76-106 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).
- 61 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).
- 61 a. Repair. (Reference-Title 25, §71.21.a.4.ii.A).
- 61 b. Upgrading. (Reference-Title 25, §71.21.a.4.ii.B).
- 61 c. Reduction of hydraulic or organic loading to existing facilities. (Reference-Title 25, §71.71).
- 61 d. Improved operation and maintenance. Reference-Title 25, §71.21.a.4.ii.C).
- 61 e. Other applicable actions that will resolve or abate the identified problems. (Reference-Title 25, §71.21.a.4.ii.D).
- 61 4. Repair or replacement of existing collection and conveyance system components. (Reference-Title 25, §71.21.a.4.ii.A).
- 61-62,
76-106 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).
- 62,
76-106 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).

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

- 62-69 1. Soil and slope suitability. (Reference-Title 25, §71.21.a.2.ii.C).
- 62-69 2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
- 62-69 3. The establishment of a sewage management program. (Reference-Title 25, §71.21.a.4.iv). See also Part "F" below.
- 62-69 4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference-Title 25, §71.21.a.4).
- 62-69 a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference-Title 25, §73.31-73.72).
- 62-69 b. Use of expanded absorption areas or alternating absorption areas. (Reference-Title 25, §73.16).
- 62-69 c. Use of water conservation devices. (Reference-Title 25, §71.73.b.2.iii).

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

- 69-70,
76-106 1. Treatment and discharge requirements. (Reference-Title 25, §71.64.d).
- 69-70,
76-106 2. Soil suitability. (Reference-Title 25, §71.64.c.i).

_____	<u>69-70,</u>	
_____	<u>76-106</u>	3. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.64.c.2).
_____	<u>69-70,</u>	
_____	<u>76-106</u>	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.
_____	<u>70</u>	D. The use of community land disposal alternatives including:
_____	<u>70</u>	1. Soil and site suitability. (Reference-Title 25, §71.21.a.2.ii.C).
_____	<u>70</u>	2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
_____	<u>70</u>	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.
_____	<u>70</u>	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.
_____	<u>71</u>	E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference- Title 25, §71.21.a.4).
_____	<u>71</u>	1. Commercial, residential and industrial use. (Reference-Title 25, §71.63.e).
_____	<u>71</u>	2. Designated conveyance facilities (pumper trucks). (Reference-Title 25, §71.63.b.2).
_____	<u>71</u>	3. Designated treatment facilities or disposal site. (Reference-Title 25, §71.63.b.2).
_____	<u>71</u>	4. Implementation of a retaining tank ordinance by the municipality. (Reference-Title 25, §71.63.c.3). See Part "F" below.
_____	<u>71</u>	5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference-Title 25, §71.63.c.2).
_____	<u>72-74,</u>	
_____	<u>Appendix</u>	F. Sewage Management Programs to assure the future operation and maintenance of existing and proposed sewage facilities through:
_____	<u>D</u>	
_____	<u>72-74,</u>	
_____	<u>Appendix</u>	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).
_____	<u>D</u>	
_____	<u>72-74,</u>	
_____	<u>Appendix</u>	2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference-Title 25, §71.73.b.1.).
_____	<u>D</u>	
_____	<u>72-74,</u>	
_____	<u>Appendix</u>	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).
_____	<u>D</u>	
_____	<u>72-74,</u>	
_____	<u>Appendix</u>	4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference-Title 25, §71.21.a.4.iv) and §71.73.b.5 through:
_____	<u>D</u>	
_____	<u>72-74,</u>	a. Aggressive pro-active enforcement of ordinances that require operation and maintenance and prohibit malfunctioning systems. (Reference-Title 25, §71.73.b.5).
_____	<u>Appendix</u>	
_____	<u>D</u>	
_____	<u>72-74,</u>	b. Public education programs to encourage proper operation and maintenance and repair of sewage disposal systems.
_____	<u>Appendix</u>	
_____	<u>D</u>	
_____	<u>72-74,</u>	
_____	<u>Appendix</u>	5. Establishment of joint municipal sewage management programs. (Reference-Title 25, §71.73.b.8).
_____	<u>D</u>	

_____	<u>72-74,</u> <u>Appendix</u> <u>D</u>	6. Requirements for bonding, escrow accounts, management agencies or associations to assure operation and maintenance for non-municipal facilities. (Reference-Title 25, §71.71).
_____	<u>74</u>	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).
_____	<u>74-76</u>	1. Modification of existing comprehensive plans involving:
_____	<u>74-76</u>	a. Land use designations. (Reference-Title 25, §71.21.a.4).
_____	<u>74-76</u>	b. Densities. (Reference-Title 25, §71.21.a.4).
_____	<u>74-76</u>	c. Municipal ordinances and regulations. (Reference-Title 25, §71.21.a.4).
_____	<u>74-76</u>	d. Improved enforcement. (Reference-Title 25, §71.21.a.4).
_____	<u>74-76</u>	e. Protection of drinking water sources. (Reference-Title 25, §71.21.a.4).
_____	<u>74-76</u>	2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference-Title 25, §71.21.a.4).
_____	<u>74-76</u>	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).
_____	<u>74-76</u>	4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference-Title 25, §71.21.a.4).
_____	<u>107</u>	H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference-Title 25, §71.21.a.4).
_____	<u>107</u>	1. Water Quality/Public Health. (Reference-Title 25, §71.21.a.4).
_____	<u>107</u>	2. Growth potential (residential, commercial, industrial). (Reference-Title 25, §71.21.a.4).
_____	<u>107</u>	3. Community economic conditions. (Reference-Title 25, §71.21.a.4).
_____	<u>107</u>	4. Recreational opportunities. (Reference-Title 25, §71.21.a.4).
_____	<u>107</u>	5. Drinking water sources. (Reference-Title 25, §71.21.a.4).
_____	<u>107</u>	6. Other environmental concerns. (Reference-Title 25, §71.21.a.4).
_____	<u>108</u>	VI. Evaluation of Alternatives
_____	<u>108</u>	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.).
_____	<u>108</u>	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.
_____	<u>108-109,</u> <u>Appendix</u> <u>A</u>	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.
_____	<u>109</u>	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.

_____	<u>109</u>	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.
_____	<u>110</u>	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.
_____	<u>110</u>	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.
_____	<u>110</u>	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.
_____	<u>111</u>	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.
_____	<u>111</u>	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.
_____	<u>111</u>	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.
_____	<u>112</u>	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.
_____	<u>112</u>	B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference-Title 25, §71.21.a.5.ii). Appendix B of the Planning Guide.
_____	<u>112</u>	C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference-Title 25, §71.21.a.5.iii).

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| <p>_____ <u>112-113</u></p> <p>_____ <u>113-1114</u></p> <p>_____ <u>114</u></p> <p>_____ <u>114</u></p> <p>_____ <u>114</u></p> <p>_____ <u>114</u></p> <p>_____ <u>115</u></p> <p>_____ <u>115</u></p> <p>_____ <u>115</u></p> <p>_____ <u>115-116</u></p> <p>_____ <u>115-116</u></p> <p>_____ <u>115-116</u></p> <p>_____ <u>115-116</u></p> <p>_____ <u>115-116</u></p> <p>_____ <u>115-116</u></p> <p>_____ <u>115-116</u></p> <p>_____ <u>116</u></p> <p>_____ <u>116</u></p> <p>_____ <u>116</u></p> <p>_____ <u>116</u></p> | <p>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).</p> <p>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).</p> <p>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).</p> <p style="padding-left: 20px;">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).</p> <p style="padding-left: 20px;">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).</p> <p>G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - Title 25, §71.21.a.5.vi.D.).</p> <p>VII. Institutional Evaluation</p> <p>A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:</p> <p style="padding-left: 20px;">1. Financial and debt status. (Reference-Title 25, §71.61.d.2).</p> <p style="padding-left: 20px;">2. Available staff and administrative resources. (Reference-Title 25, §71.61.d.2)</p> <p style="padding-left: 20px;">3. Existing legal authority to:</p> <p style="padding-left: 40px;">a. Implement wastewater planning recommendations. (Reference-Title 25, §71.61.d.2).</p> <p style="padding-left: 40px;">b. Implement system-wide operation and maintenance activities. (Reference-Title 25, §71.61.d.2).</p> <p style="padding-left: 40px;">c. Set user fees and take purchasing actions. (Reference-Title 25, §71.61.d.2).</p> <p style="padding-left: 40px;">d. Take enforcement actions against ordinance violators. (Reference-Title 25, §71.61.d.2).</p> <p style="padding-left: 40px;">e. Negotiate agreements with other parties. (Reference-Title 25, §71.61.d.2).</p> <p style="padding-left: 40px;">f. Raise capital for construction and operation and maintenance of facilities. (Reference-Title 25, §71.61.d.2).</p> <p>B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:</p> <p style="padding-left: 20px;">1. Need for new municipal departments or municipal authorities. (Reference-Title 25, §71.61.d.2).</p> <p style="padding-left: 20px;">2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference-Title 25, §71.61.d.2).</p> <p style="padding-left: 20px;">3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference-Title 25, §71.61.d.2).</p> |
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_____	<u>116</u>	C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
_____	<u>116</u>	1. Incorporation of authorities or agencies. (Reference-Title 25, §71.61.d.2).
_____	<u>116</u>	2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference-Title 25, §71.61.d.2).
_____	<u>116</u>	3. Description of activities to provide rights-of-way, easements and land transfers. (Reference-Title 25, §71.61.d.2).
_____	<u>116</u>	4. Adoption of other municipal sewage facilities plans. (Reference-Title 25, §71.61.d.2).
_____	<u>116</u>	5. Any other legal documents. (Reference-Title 25, §71.61.d.2).
_____	<u>116</u>	6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
_____	<u>116</u>	D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference-Title 25, §71.61.d.2).
_____	<u>117</u>	VIII. Implementation Schedule and Justification for Selected Technical & Institutional Alternatives
_____		A. Identify the technical wastewater disposal alternative which best meets the wastewater treatment needs of each study area of the municipality. Justify the choice by providing documentation which shows that it is the best alternative based on:
_____	<u>117-118</u>	1. Existing wastewater disposal needs. (Reference-Title 25, §71.21.a.6).
_____	<u>117-118</u>	2. Future wastewater disposal needs. (five and ten years growth areas). (Reference-Title 25, §71.21.a.6).
_____	<u>117-118</u>	3. Operation and maintenance considerations. (Reference-Title 25, §71.21.a.6).
_____	<u>117-118</u>	4. Cost-effectiveness. (Reference-Title 25, §71.21.a.6).
_____	<u>117-118</u>	5. Available management and administrative systems. (Reference-Title 25, §71.21.a.6).
_____	<u>117-118</u>	6. Available financing methods. (Reference-Title 25, §71.21.a.6).
_____	<u>117-118</u>	7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference-Title 25, §71.21.a.6).
_____	<u>118</u>	B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference-Title 25, §71.21.a.6)
_____	<u>118-119</u>	C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a Sewage Management Program. (Reference – Title 25 §71.31d)
_____	<u>N/A</u>	IX. Environmental Report (ER) generated from the Uniform Environmental Review Process (UER)
_____	_____	A. Complete an ER as required by the UER process and as described in the DEP Technical Guidance 381-5511-111. Include this document as "Appendix A" to the Act 537 Plan Update Revision. Note: <i>An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.</i>

ADDITIONAL REQUIREMENTS FOR PENNVEST PROJECTS

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

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

I/A TECHNOLOGIES

PARTIAL LISTING OF INNOVATIVE AND ALTERNATIVE TECHNOLOGIES

TREATMENT TECHNOLOGIES

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

SLUDGE TREATMENT TECHNOLOGIES

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

ENERGY RECOVERY TECHNOLOGIES

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

INDIVIDUAL & SYSTEM-WIDE COLLECTION TECHNOLOGIES

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