

WESTTOWN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA

ON-LOT SEWAGE MANAGEMENT PROGRAM GUIDANCE



**Westtown Township
1039 Wilmington Pike
West Chester, PA 19382**

December 2013

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INTRODUCTION

On December 2, 2013, Westtown Township adopted an ordinance to implement an On-lot Sewage Management Program (SMP). The general intent is to require everyone who owns a building served by an on-lot sewage system to maintain that system properly and have repairs made as needed to keep the system functioning correctly, thereby minimizing groundwater pollution and environmental health hazards that result from a malfunctioning sewage system.

Westtown's SMP requirements apply to all property owners with an on-lot sewage system – the SMP is not applicable to owners of vacant land or property served by public sewer.

This document was prepared to help residents understand the nature of on-lot sewage systems, the need for regular maintenance, ways to address sewage system malfunctions, and the specific requirements of the on-lot SMP. Please take the time to read all information; an understanding of how on-lot sewage systems work, for example, will be very helpful with understanding why system maintenance and repair are so important.

Over 1600 properties in Westtown Township are served by on-lot sewage systems. An on-lot sewage system is defined as any infrastructure (pipes, tanks, pumps, drainfields, etc.) located outside of a building which is intended to convey, treat and dispose of wastewater. While most properties have their own exclusive system, there are some locations where a single system serves two or more properties. The specific nature of on-lot sewage system components can range widely depending upon the age of the system, soil conditions, and size of the home or building in question. While there may be varying types of systems and components, they all have one thing in common – regular maintenance is essential to protect both the natural environment and human health, and to avoid unnecessary and expensive repairs.

Many property owners take their on-lot sewage system for granted – as long as wastewater goes down the drain without an apparent problem, there isn't much thought of sewage system maintenance. Unfortunately, failing to properly maintain on-lot sewage systems can result in polluted groundwater, polluted streams, health hazards, and very expensive repairs that could have otherwise been avoided. Quite simply, on-lot sewage systems aren't designed to work properly without regular maintenance.

While these systems mostly serve individual residences and are privately owned, Pennsylvania law dictates that all municipalities are ultimately responsible for assuring that the sewage systems within their borders are properly maintained. In order to address this responsibility, the Pennsylvania Department of Environmental Protection (DEP) strongly encourages municipalities to adopt ordinances that provide for on-lot sewage management programs.

Westtown's SMP was the direct result of considerable DEP concerns with the conditions of on-lot sewage systems throughout the Township. Under an August 16, 2011 DEP Consent Order, Westtown was required to undertake an Official Sewage Facilities Plan (Act 537 Plan) to address all areas of the Township not served by public sewer. The Westtown Act 537 Plan, submitted to

DEP in 2012, determined that for all lots not currently served by public sewers, existing on-lot sewage systems may continue in use, subject to a SMP administered by Westtown Township.

DEP approved Westtown's SMP on June 7, 2013. It is important to note that this approval was contingent upon Westtown Township's regular reporting to DEP and the preparation of additional Act 537 planning based upon the information collected about the on-lot sewage systems through the SMP. The Township must annually report the SMP data to DEP. If DEP determines that the conditions of on-lot sewage systems in certain neighborhoods do not warrant continued use of the systems, DEP may, at any time, require Westtown to complete additional Act 537 planning – this may require consideration of public sewers to serve these areas. Regardless of any such DEP determination for specific areas, Westtown is still obligated to complete additional Act 537 planning for all areas of the Township once the SMP information is gathered and evaluated.

As discussed in detail in Section IV, the SMP property owner responsibilities include inspection of each on-lot sewage system by a qualified contractor, regular sewage system pumping by a Chester County Health Department licensed pumper, additional maintenance and/or repair activities as needed to correct any problems, and payment of an annual fee to cover Township costs of administering the SMP. For the purpose of initial sewage system inspections, the Township has been divided into 4 phases, with phase 1 area inspections to be completed in the first 9 months and phases 2 through 4 inspections completed in successive 9 month periods. Maps showing each of these phases can be found in Section V.

Although these responsibilities are not optional, it is hoped that once residents understand that the SMP consists of activities that will benefit each homeowner as well as our shared environment, there will be little or no need to enforce the requirements. The Township SMP responsibilities do, however, require enforcement of the penalty provisions in the SMP Ordinance to assure a successful program. The enforcement and penalty processes are discussed in Section VI.

Thank you for properly maintaining your on-lot sewage system and helping to keep a healthy Westtown Township community. If you still have questions after reading this document, please refer to the contact information for Westtown Township and other resources in Section VII.

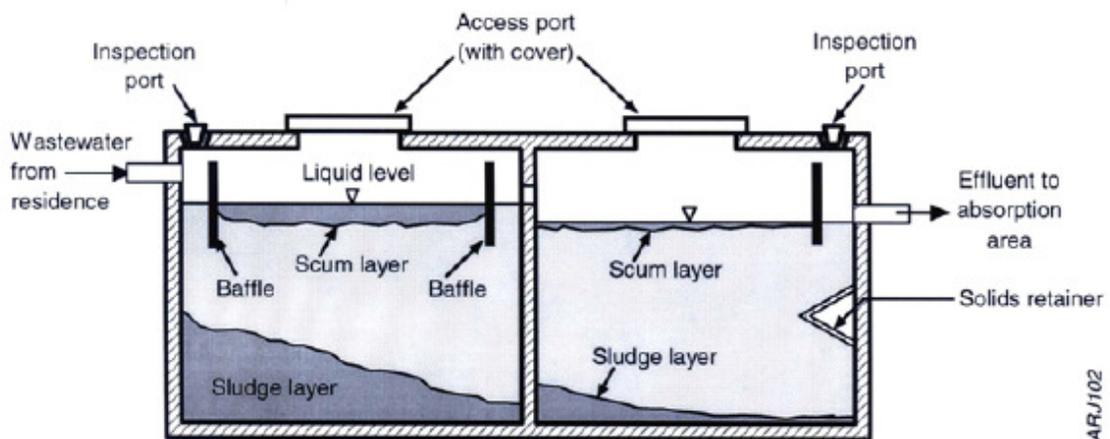
I. TYPES OF ON-LOT SEWAGE SYSTEMS

On-lot sewage systems are designed to treat and dispose of domestic household sewage through natural processes. In its most basic form, an on-lot sewage system consists of a treatment tank (i.e., septic tank) and a disposal area (i.e. drainfield). Both of these components play important roles in cleaning up the wastewater and disposing it into the soil in an environmentally friendly manner. It is important to note that there are various types of on-lot systems. The information below describes a basic system (septic tank/drain field) as well as older systems (cesspool and seepage pits) and newer “alternative” systems which can sometimes be found on properties with more challenging soil, slope, and/or area restrictions.

Septic Tank/Drainfield

The septic tank/drainfield system involves a treatment tank which is a large watertight “box”, usually made of concrete, with an inlet and outlet pipe. Wastewater flows from the home to the treatment tank through the sewer pipe. The treatment tank treats the wastewater naturally by holding it in the tank long enough for solids and liquids to separate. The wastewater forms three layers inside the tank. Solids lighter than water (such as fats, oils, and greases) float to the top forming a layer of scum. Solids heavier than water settle at the bottom of the tank, forming a layer of sludge. This leaves a middle layer of partially clarified wastewater. The layers of sludge and scum remain in the septic tank where bacteria found naturally in the wastewater continue to break the solids down. The sludge and scum that cannot be broken down are retained in the tank and build up until it is pumped.

Baffles in the tank serve a very important role in preventing accumulated solids from traveling out of the tank. Any solids which escape the tank can clog up the drainfield and cause premature (and expensive) failure. The illustration below shows how sludge and scum layers separate and how baffles serve to keep these layers from leaving the tank.



Cross Section of a typical Two Compartment Septic Tank

This illustration shows a tank constructed with 2 compartments in series, which has been required in Pennsylvania for homes built since 1997 so that an additional level of protection is in place to prevent solids or scum from flowing out of the tank. Sometimes two separate single compartment septic tanks are installed in series to achieve the same purpose.

The layer of clarified liquid, also known as effluent, flows from the septic tank to the disposal area. A drainfield (also known as a leachfield, disposal field, or a soil absorption area) represents the most common disposal component of a septic system. This is the place where the effluent from the septic tank trickles through the soil for final treatment and disposal. There are many different kinds of drainfields, but most involve an excavation in the ground with perforated pipe set in crushed stone. The diagram below shows one of the more common layouts in Westtown Township, with several long and narrow excavations, or trenches.

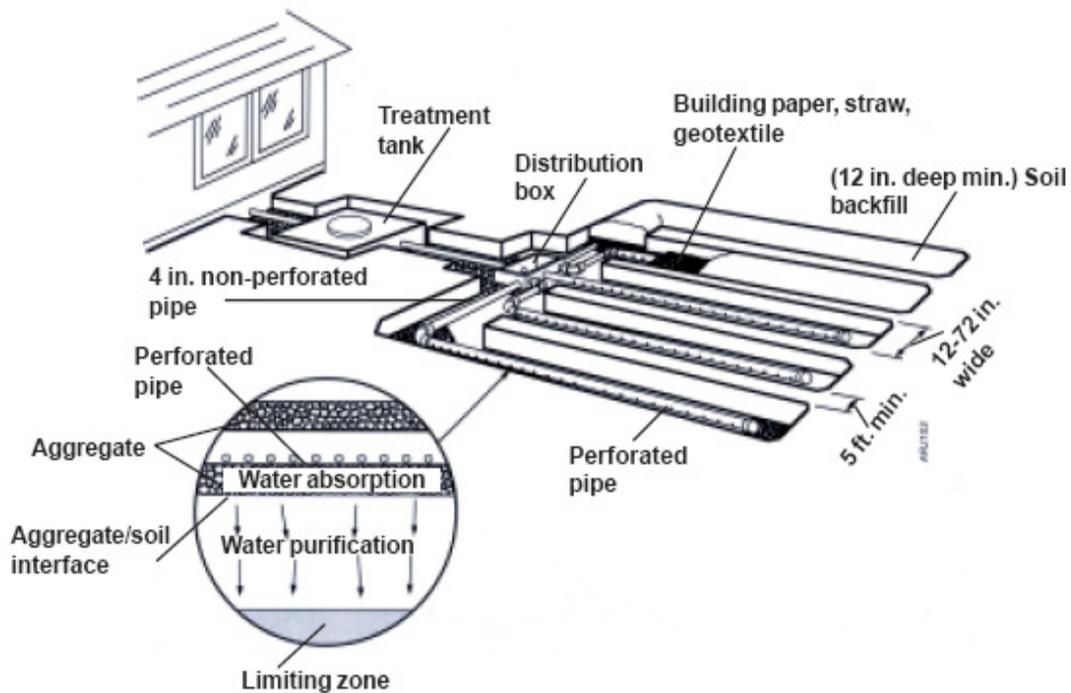


Diagram of Typical Drainfield Showing Underground Trenches

The most common types of drainfields are:

➤ **Subsurface Beds and Trenches**

Subsurface beds and trenches are the most conventional on-lot sewage system absorption area configuration. In both cases, perforated pipe is placed in a layer of stone within an excavation in the ground. Wastewater from a treatment tank flows into the perforated pipe and seeps through the stone to the underlying soil. The technology is essentially the same for both beds (single large rectangular excavation) and trenches

(multiple narrower rectangular excavations), and the type used is largely a function of site slope; at slopes of greater than 8%, trenches are required in Pennsylvania.

These designs may also include a pump and associated pump tank to convey wastewater from the septic tank to the bed or trenches in cases where gravity flow is not possible, or in cases where a poor percolation rate requires the piping in the bed or trenches to be pressurized. This type of design is typically called “pressure dosing”.

A variation of subsurface beds and trenches is often used called a subsurface sand filter. Subsurface sand filters include sand placement over the entire excavated area to bypass soils with unacceptable permeability prior to placement of stone and pipe. Minimum sand depth is 12 inches and all such designs require pressure dosed distribution.

➤ **Elevated Sand Mounds**

An elevated sand mound is typically used when rock or a water table is too close to the ground surface to allow for an in-ground system. Sand is placed on top of the ground to make up for the lack of soil depth, and the stone and pipe are placed on top of the sand. All of this is covered and surrounded by a soil berm. As with subsurface sand filters, DEP regulations require that all elevated sand mounds be pressure dosed.

Cesspools and Seepage Pits

Given the age of many of the residences in Westtown Township, there are numerous cesspools or seepage pits that provide on-lot sewage disposal. A typical cesspool is a cylindrical excavation with an open bottom and walls lined with unmortared stone or concrete block. Raw sewage is discharged into the cesspool from a sewer pipe connected the building drain. Most solids accumulate in the cesspool, and the remaining liquid sewage waste is absorbed into the soil through the open bottom and porous sides of the cesspool.

Cesspools were used frequently in the past, but have been prohibited for new homes in Pennsylvania for over 40 years due to a high risk for groundwater contamination. Many of the natural processes that “clean up” wastewater in a modern septic system do not occur with a cesspool.

Of particular concern is the depth where wastewater seeps into the soil. Most cesspools were constructed without regard for soil limitations which may affect groundwater quality. These limitations commonly include a high groundwater table or fractured bedrock which may cause wastewater to flow through open channels directly to groundwater. Sewage which is discharged close to groundwater or fractured bedrock greatly increases the chance that groundwater may become contaminated. Sewage that seeps into the soil at the depths that are usually found in cesspools also does not get renovated by aerobic bacteria as much as would be the case with modern, shallower drain fields. Aerobic bacteria are naturally occurring microorganisms that live in an oxygen rich environment, and there’s much more oxygen in shallow soil than there is in deeper soil. The diagram on the following page shows the cross section of a typical cesspool installation.

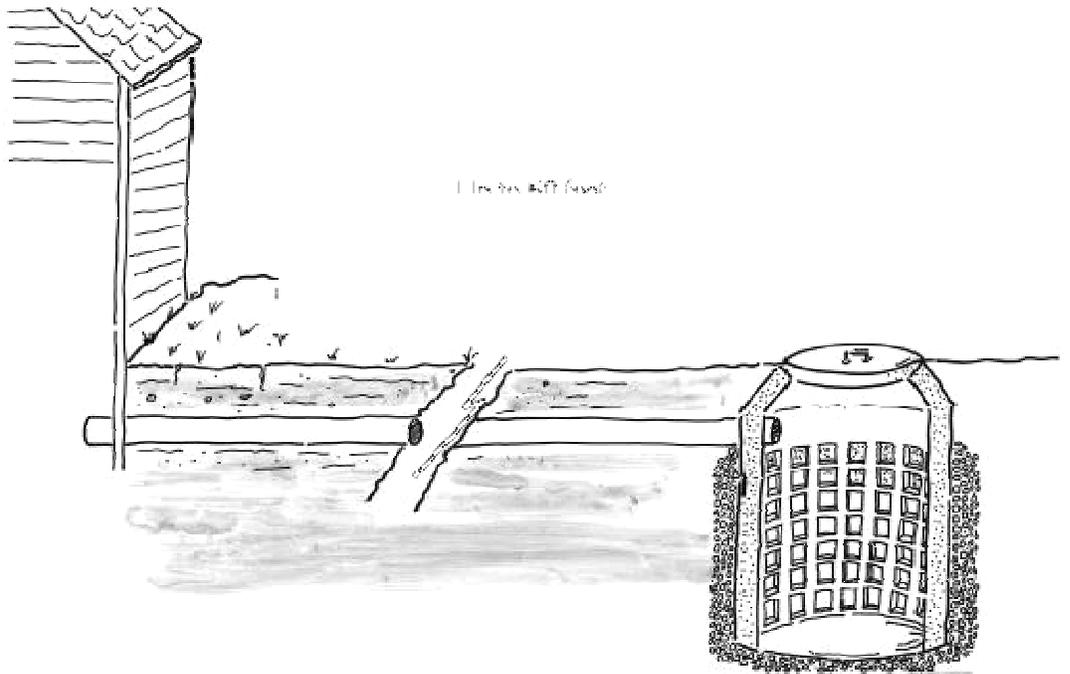


Diagram of Typical Cesspool

A seepage pit is very similar to a cesspool in design, but wastewater flows first into a septic tank, and then into the seepage pit, which is a porous block or stone lined pit like a cesspool. The addition of a septic tank improves the quality of the wastewater that seeps into the ground, since septic tanks are designed to filter out solids and scum, as well as provide some microbial decomposition of sewage wastes. From an environmental standpoint, this type of sewage system is an improvement over a cesspool but still deficient with regard to current criteria. A seepage pit still has much greater potential for groundwater contamination than a modern drain field, since the wastewater seeps into the soil at depths that don't support the beneficial aerobic bacteria and which may be too close to groundwater and/or rock.

As with any existing septic system, cesspools and seepage pits are generally “grandfathered” from a regulatory standpoint. As long as sewage does not appear on the ground surface or back up into a dwelling, their use may generally continue. However, should a property served by these technologies exhibit any of these problems, repair will usually entail replacing the cesspool or seepage pit with a new sewage system that meets all current standards.

Although these designs work a little differently than more modern sewage systems, a similar level of maintenance is still required to help them last longer and minimize the threat of groundwater pollution.

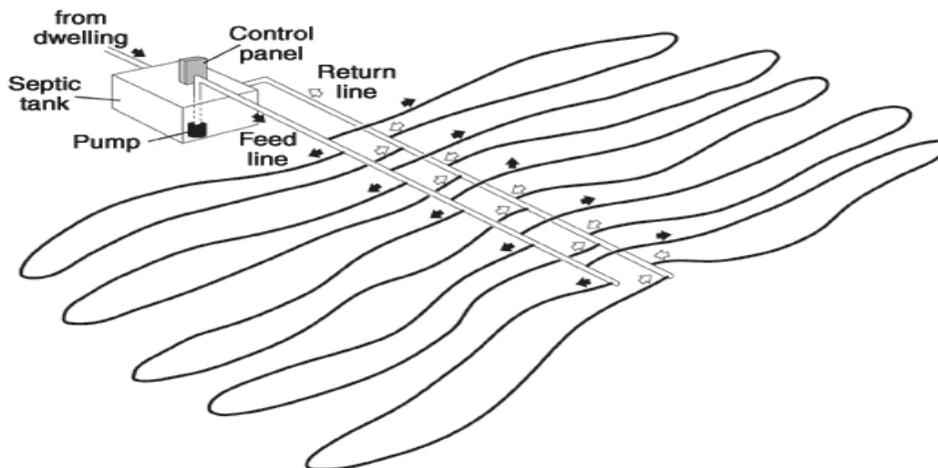
Alternate On-lot Sewage Systems

The information above describes the “conventional” type of on-lot system, the septic tank/drainfield system, as well as the older types of systems found in the Township – cesspools/seepage pits. Due to the varied environmental conditions in the Township, some on-lot systems have been installed which are classified as “alternate” systems by DEP. Alternate systems typically employ more sophisticated treatment components which are specially designed in order to overcome limitations such as poor soils, shallow bedrock, steep slopes, and limited space, among others. Many of these alternate systems require more intensive operation and maintenance efforts than a typical septic tank / drainfield system because of the more sophisticated technology, and regular oversight by a qualified maintenance contractor is needed in these cases.

DEP considers alternate systems as those which generally have a proven track record, but are not currently described in the regulations governing sewage treatment facilities. There is also a category for “experimental” systems, which are considered for the purpose of testing and observation. The use of any “experimental” system is highly regulated, and generally limited to the most severe situations, often in cases where no other feasible repair can be made for an existing house. A few of the more common alternate systems which have been approved for use in Pennsylvania are discussed below.

➤ Drip Irrigation

This technology employs the use of small diameter flexible tubing to distribute effluent into the upper 12 inches of the soil at a controlled rate. Its primary advantage is applicability for sites that may otherwise require an elevated sand mound. In these cases, many homeowners prefer the buried drip tubing for aesthetic reasons. Other advantages include use on steeper slopes with marginal soils, and increased soil oxygen (due to shallow tubing depth) for more efficient renovation.



Schematic of Typical Drip Field Installation

Drip irrigation typically requires more advanced treatment technologies than a conventional septic tank. The advanced treatment component(s) and the drip irrigation itself often require regular maintenance oversight by a qualified contractor.

➤ Leaching (“Graveless”) Chambers

Leaching chambers are semi-cylindrical plastic chambers installed with the open face on the bottom of a seepage bed or trench excavation. Multiple rows of chambers connected end-to-end may be installed in lieu of stone and pipe. Wastewater flows through the void space created by the chambers and is absorbed by the soil at the bottom of the absorption area excavation. DEP has approved a reduction of up to 40% in minimum absorption area square footage when using leaching chambers to repair an existing on-lot sewage system, which can facilitate installation where limited space is available. Although this area reduction can be beneficial in repairing on-lot systems, leaching chambers are also commonly used due to homeowner preference and site access concerns; it is much easier for an installer to transport plastic chambers than truckloads of stone to a site with difficult access. Unlike most other alternate sewage systems, the use of leaching chambers typically does not require any more maintenance activities than those associated with a conventional on-lot sewage system.



Typical Leaching Chambers

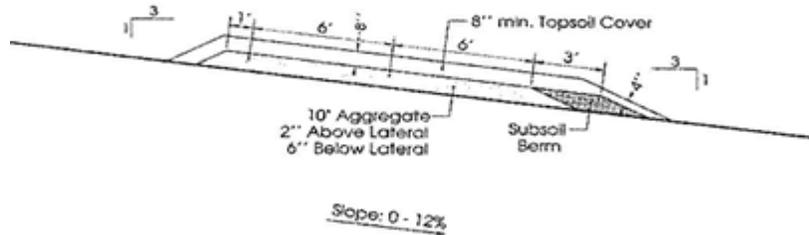
➤ Peat Filters

A peat filter is typically an enclosed unit which contains specially harvested peat. Peat is the byproduct of the partial decomposition of organic matter, in an oxygen-poor environment. It contains an abundance of carbon, and is very effective in wastewater treatment. Peat filters are large tanks typically installed downstream of a treatment tank, and before the disposal area, to “clean up” the wastewater more than a conventional system. Regular maintenance is crucial, as the peat typically must be replaced after a number of years for the filter to function correctly.

➤ At-Grade Absorption Areas

These are a variation on the conventional elevated sand mound system, whereby the use of a pre-treatment filter (such as a peat filter) can allow the elimination of the sand. Lowering the height of a sand mound by eliminating the sand can have both cost and aesthetic benefits.

A sloping at-grade, shown below, is a variation where the finished grade of the mound follows the existing grade.



Cross Section of Sloping At-grade

II. ON-LOT SEWAGE SYSTEM MAINTENANCE

Whatever type of on-lot system serves your business or home, routine maintenance and proper operation is needed to avoid environment and human health problems and to minimize costly repairs. Septic system maintenance is often compared to automobile maintenance because only a little effort on a regular basis can save a lot of money and significantly prolong the life of the system. Sound septic system operation and maintenance practices include conserving water, being careful that nothing harmful is disposed of through the system, and having the system pumped and inspected at prescribed intervals, as detailed below. The information below generally applies to all of the on-lot systems previously described; however, some systems may have additional or unique components that require special care. For example, all sand mounds are dosed with a pump which would require additional maintenance; drip irrigation tubing is generally near the ground surface and is especially vulnerable to disturbance and compaction; and many alternate sewage system technologies require more detailed oversight by a qualified contractor. Please consult with the Chester County Health Department or your sewage system contractor for any unique operation and maintenance issues that may apply to your system.

Pump Your Tank Regularly

The single most effective maintenance activity that can and should be performed on all on-lot sewage systems is the regular pumping of the treatment tank. This simple activity will remove the accumulated solids in the treatment tank, prevent solids from traveling out of the tank and damaging the drainfield, and allow the natural treatment processes in the tank to work as intended. Additional information regarding treatment tank pumping follows, to better explain why pumping your sewage system is usually a “win/win” situation for both the environment and your bank account.

How regular tank pumping helps

The treatment tank treats the wastewater naturally by holding it in the tank long enough for solids and liquids to separate. The wastewater forms three layers inside the tank. Solids lighter than water (such as fats, oils, and greases) float to the top forming a layer of scum. Solids heavier than water settle at the bottom of the tank, forming a layer of sludge. This leaves a middle layer of partially clarified wastewater. The layers of sludge and scum remain in the septic tank where bacteria found naturally in the wastewater continue to break the solids down. The sludge and scum that cannot be broken down are retained in the tank and build up until it is pumped.

It is very important to remove these solids as they will eventually build up to the point that the tank no longer has enough liquid area to allow for adequate microbial activity or the settling out of solids and scum. Once this point is reached, suspended solids will pass through the tank to the drainfield, and the wastewater will not stay in the tank long enough for bacterial activity which helps break down some solids. Both of these consequences can result greater risk for groundwater contamination and premature failure of the drainfield. Since repairing or replacing a failing drainfield will cost significantly more money than regular

treatment tank pumping, having your tank pumped regularly will save you money in the long run, and at the same time help protect the environment.

How often you should have your tank pumped

The rate at which solids accumulate varies significantly based upon such things as how many people live in the house, whether or not a garbage disposal is used, and the size of the tank. The general guideline for determining when a pump-out should be conducted is whenever the solids and scum layers accumulate to 1/3 of the liquid depth of the tank. In lieu of constant monitoring of the depth of the solids, a maximum three year pumping interval has become the accepted standard in Pennsylvania, and is also the basis for Westtown Township's program. If you have a very large family, an undersized tank, or use a garbage disposal, the 3 year interval may need to be decreased to a more frequent schedule to avoid excessive solids build-up.

What else you should consider when having your system pumped

All sewage pumpers/haulers in Chester County are required to be licensed by the Chester County Health Department. A list of licensed pumpers can be found on the County's web site at <http://webapps.chesco.org/septagereports/crviewer4.aspx>, or you may call the Health Department at (610) 344-5368 to obtain a copy.

You must use a pumper licensed by the Health Department (any who are not are operating illegally). Please keep the receipts for any sewage pumping – it's important for your records, and you must also submit a copy to the Township as proof of pumping.

There are several easy things a pumper can check while he's pumping your system which will help avoid problems in the future. When pumping occurs at the same time as a system inspection, these things would be included in the inspection. However, if you are having your system pumped at another time, you should ask your pumper to check the following:

- ✓ Tank baffles should be inspected and, if necessary, repaired or replaced whenever a pump-out is conducted. Tank baffles are a simple but essential component of proper septic tank function, and when broken or missing can cause premature drainfield failure.
- ✓ The tank and tank lid should be checked for visible cracks or other structural defects, and repaired if needed. Wastewater leaking out will risk groundwater contamination, and any stormwater getting in will cause your drainfield to be hydraulically overloaded.
- ✓ The pumper should note whether there was flow back into the tank from the outlet pipe going to the drainfield. This can indicate a hydraulically overloaded drainfield and follow-up investigation may be needed.
- ✓ You should also ask your pumper to note the depth of your tank lid. Current regulations require that it be no more than 12 inches deep so that it's easy to get to for regular pumping. If yours is deeper than this, you may want to consider adding a "riser", or manhole extension, to save extra digging every three years.

Use Water Wisely

Water conservation is very important for on-lot sewage systems because continual saturation of the soil in the drainfield can affect the quality of the soil and its ability to naturally remove toxins, bacteria, viruses, and other pollutants from the wastewater.

The most effective way to conserve water around the house is to first repair any leaking faucets or running toilets, and use washing machines and dishwashers only when full.

In a typical household, most of the water used indoors is used in the bathroom, and there are a lot of little things that can be done to conserve water there. For example, try to avoid letting water run while washing hands and brushing teeth. Avoid taking long showers and install water-saving features (aerators) on faucets and shower heads. These devices can reduce water use by up to 50 percent. Low-flush toilets use one to two gallons per flush compared to the three to five gallons used by conventional toilets. Even using a toilet dam or putting a container filled with rocks in the toilet tank can reduce water use by 25 percent.

It is also important to avoid overtaxing your system by using a lot of water in a short time period. Try to space out activities requiring heavy water use (like laundry) over several days.

Know What Not To Flush

What you put into your septic system greatly affects its ability to do its job. As a general rule of thumb, do not dispose of anything in your septic system that can just as easily be put in the trash. Remember that your system is not designed to be a garbage disposal, and that solids build up in the septic tank and eventually need to be pumped out.

In the kitchen, avoid washing food scraps, coffee grinds, and other food items down the drain. Grease and cooking oils contribute to the layer of scum in the tank and also should not be put down the drain. Garbage disposals generally increase the amount of solids in the tank, and as a result can require more frequent pump-outs.

The same common-sense approach used in the kitchen should be used in the bathroom. Don't use the toilet to dispose of plastics, paper towels, disposable diapers, non-biodegradable wipes, kitty litter, or any inorganic materials. The only things that should be flushed down the toilet are wastewater and toilet paper.

Avoid Hazardous Chemicals

To avoid disrupting or permanently damaging your septic system, do not use it to dispose of hazardous household chemicals. Even small amounts of paints, varnishes, thinners, waste oil, photographic solutions, pesticides, and other organic chemicals can destroy helpful bacteria and the biological digestion taking place within your system. These chemicals also pollute the groundwater. Some septic system additives that claim to help or clean your system also contain hazardous chemicals and should be avoided.

Household cleaners, such as bleach, disinfectants, and drain and toilet bowl cleaners should be used in moderation and only in accordance with product labels. Overuse of these products can harm your system. It makes sense to try to keep all toxic and hazardous chemicals out of your septic tank system when possible.

To help prevent groundwater pollution, be sure to dispose of leftover hazardous chemicals by taking them to an approved hazardous waste collection center.

Consider Septic System Additives Carefully

There are many septic tank additive products on the market today, most of which claim to accelerate the natural processes in a treatment tank or even rejuvenate a clogged soil absorption system. Of these, there are generally two categories of additives: 1) chemical, which includes inorganic and organic compounds and 2) biological, which includes yeast, bacteria, and enzymes. Over the past 40 years, there have been several studies conducted on septic tank additives; however, there is still some debate on their effectiveness. Part of the problem stems from the number of additives that are marketed and the lack of an established standard testing method for all additives.

It is important to understand that a homeowner does not need to add anything to a septic tank that is designed, operated, and properly maintained because naturally occurring bacteria are already present within the waste.

Chemical additives, such as caustic hydroxides and sulfuric acid, should never be added to a septic system. Adding these products will destroy the bacterial population in the septic tank, possibly affect the permeability of the drainfield, and may cause groundwater contamination. Often, manufacturers of biological additives market their use on a monthly basis to restore the bacterial balance in a septic tank, as part of a routine maintenance program. No additive is needed to maintain the bacterial balance in a properly operated and maintained sewage system.

Should you decide to use any additive, please be aware of these facts and check to see that the additive is not in conflict with the Township's On-lot Sewage Management Ordinance, which includes a list of substances which should not be discharged into any sewage system. Claims made on the effectiveness of additives to either eliminate pumping of a septic tank or restore permeability of the soil absorption system are unproven. ***No product can eliminate the need for regular sewage system pumping and prudent system maintenance.***

System Inspections

Regular sewage system inspections by a qualified contractor can help catch many small problems before they become big (and expensive) problems. An inspection can also help alert you to different or additional maintenance activities which could help prolong the life of your sewage system.

Inspections of all on-lot sewage systems are required in Westtown Township in order to determine accurate conditions and maintenance needs throughout the Township. There are two

types of inspections that are required: an initial, comprehensive inspection conducted within the first three years of the on-lot sewage management program, and simpler, routine inspections conducted every three years after the initial inspection. Please see Section IV of this guidance document for more discussion regarding inspection requirements.

Protect Your System

Finally, it is important to protect your septic system from potential damage. Don't plant anything but grass near your sewage system. Roots from large shrubs and trees can cause damage. Grass is the most appropriate groundcover for the drainfield.

Don't allow anyone to drive or operate heavy machinery over any part of the system, and do not build or construct anything over the drainfield – these activities can crush piping, crack tanks, and compact the soil so it won't absorb wastewater as effectively.

One of the most important ways to protect your sewage system is to divert roof drains, surface water, and sump pumps away from the drainfield or treatment tank lid. Your drainfield area is already being asked to absorb more water than the rest of the yard – adding an extra load on top of this will cause it to function poorly, or fail altogether. If water is directed over the tank lid, it can sometimes seep into a gap around the lid opening, and will then get into the tank and flow to the drainfield, again causing system malfunction or failure.

III. GUIDANCE ON ADDRESSING SYSTEM MALFUNCTIONS

Previous sections described the various types of on-lot systems and appropriate operation and maintenance techniques needed to minimize problems and maximize longevity. However, despite a homeowner's best efforts, there may still arise various situations where an on-lot system is not functioning satisfactorily. There can be a myriad of reasons for a sewage system problem, and consultation with a qualified contractor and/or the Chester County Health Department (CCHD) will be needed in most cases.

Two general principles are important to keep in mind when addressing any malfunction:

1. A problem involving sewage ponding on the surface of the ground is a serious environmental and human health hazard, as well as an illegal condition. Anytime a malfunction like this occurs the sewage system must be pumped out by a CCHD license sewage hauler and evaluated by a qualified contractor as soon as possible to protect the health of your family and your neighbors. Pumping and conserving water use should continue for as long as necessary to keep the problem under control.
2. Problems associated with the soil absorption area (aka drainfield) are typically the most difficult and expensive to correct, so try to be sure that simpler and less expensive things like a clogged or broken pipe, plumbing problem, tank problem, or unequal distribution from a distribution box (aka "d-box") are not causing the malfunction.

Steps to help guide a homeowner through the process of resolving a malfunction in more detail are presented below. Please note that these steps are just suggestions, and the process for addressing any particular problem will vary based upon the nature of the problem, homeowner knowledge of the sewage system, and timely consultation with a qualified contractor.

Step 1 – Identify the Problem

Most sewage system malfunctions can be described by one or more of several general symptoms. These symptoms, and some possible causes for each, are as follows:

Slow Drains or Wastewater Back-Up

- Plumbing problem inside house
- Clogged or crushed pipe in sewage system
- Clogged inlet baffle in treatment tank
- Treatment tank clogged with solids/scum build-up
- System hydraulically saturated

Odors

- Problem with house plumbing vent
- Tank or tank lid not structurally sound
- Broken piping
- System hydraulically saturated

Lush Green Grass Over Part of System

- Broken piping
- Tank leak or overflow
- Drainfield saturated

Wastewater Surfacing and/or Wet Spongy Area

- Broken piping
- Tank leak or overflow
- Drainfield saturated

Step 2 – Check Your Maintenance Records and Pump if Needed

If your sewage system has not been pumped regularly and recently, a simple call to a CCHD licensed sewage pumper to have your tank pumped out could help define the problem. When pumping a tank, most qualified contractors can easily check for poor flow into the tank (as may be caused by a clogged or damaged pipe or inlet baffle), excessive solids buildup which could be an indicator of possible drainfield problems, or even backflow into the tank in some extreme cases of drainfield saturation. Even if tank pumping and associated system checks fail to indicate the cause of a problem, in many cases pumping abates the immediate emergency by providing an empty tank as a storage reservoir for a few days until more investigation can be completed.

Step 3 – Locate the Problem

To determine what part of your sewage system may be causing the problem, it's often helpful to first confirm where the tank and drainfield are located on your property. In many cases, the permit that was issued by the CCHD for your sewage system can tell you where all the components are on your property, as well as the size and construction of each component. If you do not have this information in your records, permit copies for most newer systems (built in the last 20-30 years) can often be obtained directly from the CCHD for a fee. If no permit data is available for your property, you may need to contact a qualified sewage system contractor to help locate your sewage system components.

Once the location of your system components is known, you may be able to narrow down the possible causes of the problem. For example, if you have sewage ponding or surfacing, or an area of lush green grass over the drainfield or tank you will know that one of these components could be the problem. If sewage is surfacing between the tank and house, or between the tank and drainfield, you could have a broken pipe or damaged distribution box.

Step 4 – Evaluate Recent Changes or Events

Have you recently added a sump pump, diverted a roof drain, or changed the surface water runoff on your yard in any way? These things could lead to a saturated drainfield if surface water has been allowed to get into the treatment tank or flow over the drainfield area. Any changes like this that could add to the hydraulic load on your sewage system should be corrected.

Have you recently moved into a house that previously had a smaller family, or added to the number of people living in your home? If so, the additional water usage could lead to failure of an older or poorly maintained sewage system. Your sewage system may also have not been

designed to handle a particularly large family – a check of CCHD permit data can tell you the number of bedrooms (roughly equal to number of people) that your system was designed to accommodate. If your sewage system is undersized, you may want to discuss procedures for permitting a larger sewage system with the CCHD. Water conservation, fixing leaky fixtures, and installing low flow fixtures (always wise on-lot sewage system practices) may be crucial in dealing with an undersized system.

Have you had any work done recently that involved heavy equipment on your yard, or allowed anyone to drive a vehicle across your yard? Vehicles and heavy construction equipment can crack tanks, crush pipes, and damage a drainfield in some cases. Addressing these problems will almost always require the input of a qualified contractor and the CCHD.

Step 5 – Solve the Problem

Based upon the investigations conducted in the steps above, you should be able to identify or at least narrow down the cause of the malfunction. In many cases the experience of a qualified contractor may be needed to determine the precise cause, but in these cases the information a homeowner has gathered by considering the steps above could be helpful to securing a timely diagnosis.

If you haven't already done so, always consult with the CCHD prior to repairing or replacing any part of your sewage system. If your tank or drainfield is the cause of the malfunction and needs to be replaced, a permit from CCHD is always required. Simpler repairs may or may not require a permit – always verify permit requirements directly with the CCHD, or make sure that your contractor has done this, before beginning any type of repair work.

In the case of a drainfield replacement, a permit will usually involve CCHD personnel evaluating soils on your property to see if they are suitable for a new drainfield. This evaluation typically consists of back-hoe excavations and detailed percolation testing requirements, usually requiring the skills and equipment of a qualified contractor.

As previously noted, a drainfield replacement can be very costly, and there may also be cases where a property doesn't have enough suitable area to install a new drainfield. Depending upon the severity of the problem, increased pumping in conjunction with water conservation may be required in these cases.

For homeowners who find themselves with no feasible repair to a failing on-lot sewage system, frequent pumping and extreme water conservation may be the only solution. Homeowners in this condition may have to consider the installation of sewage holding tanks, which do not drain to a drainfield or absorption area but are instead designed to retain all sewage until it is pumped out. Holding tanks could provide longer intervals between pumping by providing larger storage capacity, mitigating costs and inconvenience in the long run, but this is generally the option of last resort in solving a sewage system malfunction.

Step 6 – Maintain Your Sewage System

After addressing a malfunction, and possibly incurring significant costs to do so, use and maintain your sewage system carefully so that the next malfunction can be avoided!

IV. PROPERTY OWNER RESPONSIBILITIES AND REQUIREMENTS

The information contained in this booklet is intended to provide a brief overview of the technical, environmental and operational aspects of on-lot sewage systems in Westtown Township. As mentioned earlier, as mandated by DEP, Westtown Township has adopted an On-Lot System Management Program Ordinance. Property owner requirements are summarized below. Please refer to previous sections of this guidance for detailed information relevant to each requirement.

Pumping

Every on-lot system must be pumped out by a Chester County Health Department licensed sewage pumper at least once every three years, or more frequently if needed to manage a failing sewage system. At a minimum, all sewage systems must have been properly pumped out within the three years before December 7, 2016. You must submit a receipt from your pumper to the Township within 30 days of pumping in order to meet the pumping requirements.

Initial Inspections

Initial detailed inspections of every on-lot sewage system are required to establish a base line of sewage system types, condition and maintenance needs. The inspector will need to evaluate all components of your sewage system, including all tanks and absorption areas, and may require your input for some information. In many cases, there will be no digging or disturbance to your property apart from accessing your tank lid, which should be done regularly anyway. Although not required, you are encouraged to consider having your sewage system pumped out at the same time the inspection is done – all sewage systems must be pumped out at least every three years, and having this done at the same time as the inspection can help your inspector review conditions more thoroughly.

The initial inspections must be reported on a form provided by the Township to ensure consistency. This form addresses sewage system inspection information that is familiar to qualified contractors who routinely perform this type of work. After the inspection is completed and the form submitted to the Township, the information will be reviewed to determine if any repairs, additional maintenance, or corrective measures (in the case of malfunctions) are needed. In these cases, the Township will send out a letter describing any additional requirements and/or recommendations based upon the information recorded by your sewage system inspector.

Additional initial inspection considerations are:

- **Timing** - The initial inspection of all sewage systems must be conducted by a qualified contractor hired by each property owner no later than December 7, 2016 (within the first three years of the on-lot sewage management program). Please note that this is the maximum time for completion of all inspections throughout the Township - the Westtown Board of Supervisors has established four (4) subsets of the Township, or phases, and you must have sewage system inspections completed within the schedule for your phase. Each phase has a nine-month duration, and the total duration for all four phases combined is three years.

Section V of this On-Lot Program Management Guidance publication includes Phasing Maps that illustrate the four phases for the initial inspections of each property. These inspections must be completed in accordance with the following schedule:

Phase	Start	End
1	December 9, 2013	September 7, 2014
2	September 8, 2014	June 7, 2015
3	June 8, 2015	March 7, 2016
4	March 8, 2016	December 7, 2016
Total	36 months (3 Years)	

NOTE: The initial phases are generally based on DEP’s selection of priority neighborhoods as referenced in their June 7, 2013 approval of Westtown’s *Act 537 Official Sewage Facilities Plan Special Study*.

Westtown requests that your sewage system inspection be completed as early as possible within the phasing schedule for your area.

- **Qualified Inspectors** - Qualified inspectors are those which are certified by the Pennsylvania Septage Management Association (PSMA) to inspect sewage systems. Most septic system contractors in the area have a PSMA certified inspector, and a complete listing can be found by searching on the PSMA web site at: http://www.pdma.net/find_service_provider_new.cfm.

If you do not have internet access or are otherwise unable to determine your options in selecting a qualified inspector, you may wish to consult with the contractor you typically use for sewage system pumping who could verify whether they have a certified inspector on staff and offer a recommendation if not.

- **Property Owner Responsibilities** – Each property owner with an on-lot sewage system must hire a qualified inspector and have their sewage system inspected within the schedule noted above. The inspection form and any needed attachments must be submitted to the Township by the property owner within 30 days of the date of inspection. Please remember to also keep a copy of the inspection form for your records.
- **Records Review** - You should review your records before the inspection to see if you have a copy of the permit for your sewage system or a record of the date it was last pumped. This information will be helpful for your inspector. If you do not have a copy of the permit for your sewage system, some records for sewage system permits issued since 1984 are available from the Township (610-692-1930) and the Chester County Health Department (610-344-6237). To research permit copies, you should first try to identify an approximate date your sewage system was installed. General guidelines are:

Before 1984 – No accurate permit information is likely available from the Township or the Health Department.

1984 to 2003 – The Health Department may be able to locate a copy of the permit. Records from this period are stored on microfilm, and you should allow extra time for the Health Department to search their records. For sewage systems installed to serve existing homes in this period, records are generally kept according to property owner name and date. In the case of a new home constructed in this period, records are categorized by date, subdivision, and lot number. The Township may be able to assist with the subdivision name and lot number if you do not know this information. If your sewage system was constructed after 1990, the Township may also be able to locate a copy of the Health Department permit.

2004 to date - The Health Department should be able to readily locate a permit copy. Most records in this period are stored electronically and listed by the property tax parcel number.

If permit copies are not available, your inspector will still be able to investigate your property to determine the type and location of your sewage system components.

Please note initial inspection requirements may be waived for the following conditions:

- A new system has been installed in accordance with all Chester County Health Department and DEP standards within one year prior to December 7th, 2013. Copies of all approved Chester County Health Department permit data, including plot plan, as-built plot plan, design specifications, and installation inspection reports must be submitted to the Township by the property owner to qualify for a waiver from the initial inspection requirements.
- A property owner has applied for a Chester County Health Department permit to repair a malfunctioning on-lot sewage system but no repair was deemed possible by the Health Department. Copies of all Chester County Health Department documentation, including the permit application form, soils testing field reports, and a written determination from the Health Department that no repair is possible must be submitted to the Township by the property owner to qualify for a waiver from the initial inspection requirements. Any such waiver will not absolve the property owner from the responsibility to maintain the on-lot sewage system in a manner to prevent malfunction, including frequent pumping, water conservation, or any other means deemed acceptable by the Township and the Chester County Health Department. The property owner must revisit options for repair of the on-lot sewage system with the Chester County Health Department at least annually in order to determine whether any new technologies may have approved by DEP which would allow for permit issuance to repair the On-Lot Sewage Disposal System.

Routine Inspections

Every three years after the initial inspection is completed on your property, a routine inspection is required. These routine inspections will be relatively simple, and are intended primarily as a follow-up to conditions noted in the initial inspection. Routine inspections must be completed by a qualified contractor hired by each homeowner. In many cases, the same firm that pumps your sewage system will be able to conduct the routine inspection at the same time the system is pumped.

Inspection forms will be provided by the Township prior to any required routine inspections. Each homeowner will be responsible for submitting completed forms to the Township within 30 days of the inspection.

Maintenance

Each homeowner must maintain their system to avoid malfunctions. In addition to the pumping requirement noted above, this includes completing any repairs as needed to keep the sewage system functioning properly, contracting with a qualified maintenance provider to oversee the more detailed maintenance required by certain advanced alternate system technologies and other activities as may be needed to avoid or manage a malfunction. Please note that specific conditions for which the Township will require maintenance or repair activities include the following:

- Missing or damaged treatment tank baffles
- Cracked or otherwise structurally unsound tanks or tank lids
- Surface water directed over a tank or drainfield
- Pumps, alarms, and electrical connections which are not working or otherwise deemed unsatisfactory by your sewage system inspector.
- Unequal distribution box outlet levels
- Greywater discharge to the ground surface
- Direct piped sewage discharge
- Evidence of sewage ponding or otherwise discharging to the ground surface
- A sewage system design or component which requires more intensive maintenance than a conventional sewage system (e.g. advanced treatment or disposal technologies which are recommended by DEP for additional routine maintenance).

Operation

Putting substances down the drain that may damage your system and the environment is prohibited. Please read all labels carefully, and if in doubt do not put anything down your drain that may damage your sewage system or the groundwater.

Township Fees

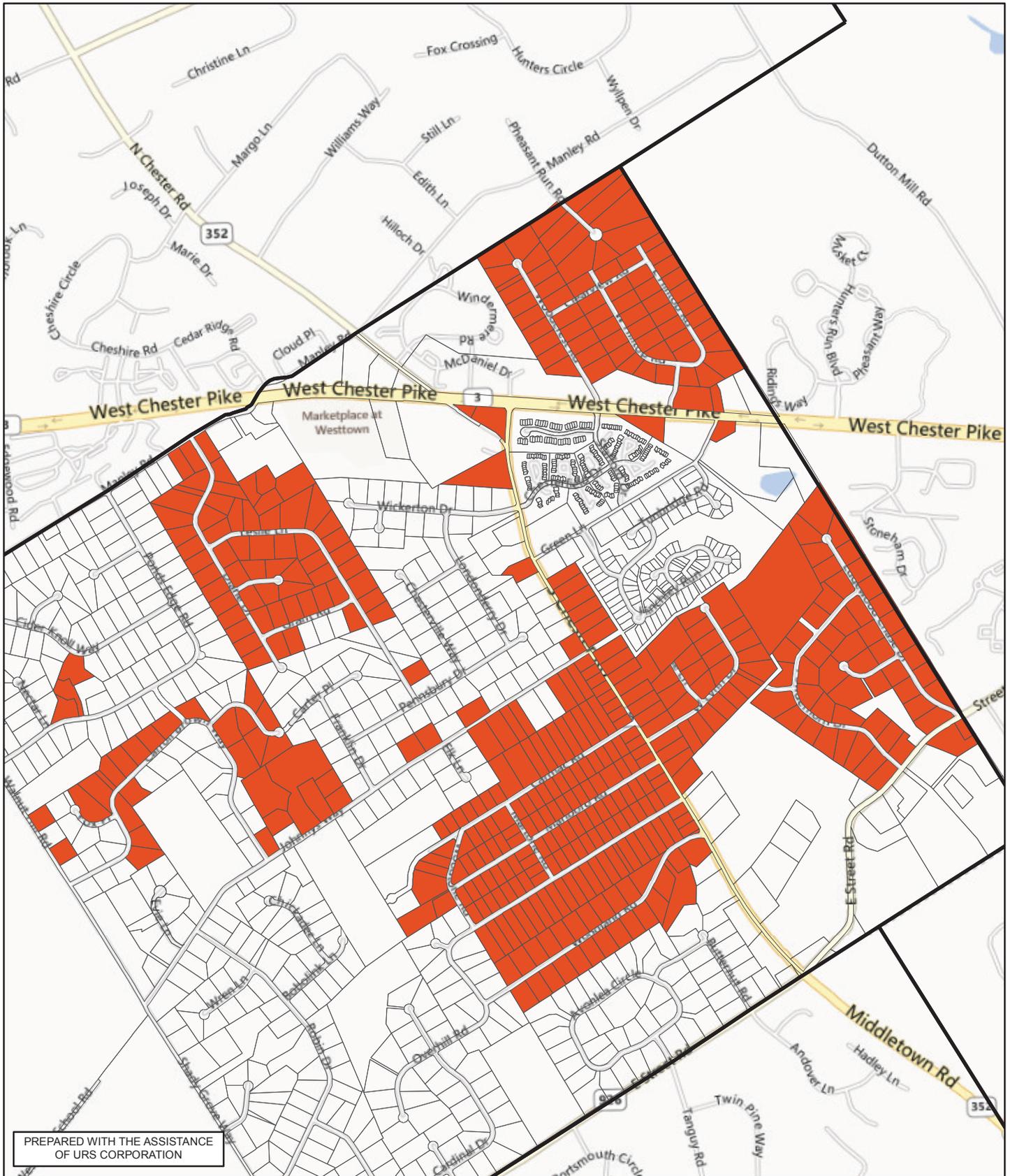
The SMP will require a significant amount of Township administrative resources. In lieu of financing the administrative costs through tax revenues, which would effectively require those connected to public sewer to shoulder a portion of the costs, Westtown requires that all property owners with an on-lot sewage system pay an annual fee. The amount of the fee will be established each year by the Board of Supervisors.

The Township must enforce all SMP requirements – please see Section VI for a discussion of enforcement processes that will be needed if a property owner fails to comply.

V. INITIAL INSPECTION PHASING MAPS

The **Phasing Maps** on the following pages illustrate the four inspection phases for the initial inspections of each property. Please review these maps to locate your property, and refer to the schedule from Section IV (replicated below) to determine when the initial inspection must be completed for your property.

Phase	Start	End
1	December 9, 2013	September 7, 2014
2	September 8, 2014	June 7, 2015
3	June 8, 2015	March 7, 2016
4	March 8, 2016	December 7, 2016



PREPARED WITH THE ASSISTANCE
OF URS CORPORATION



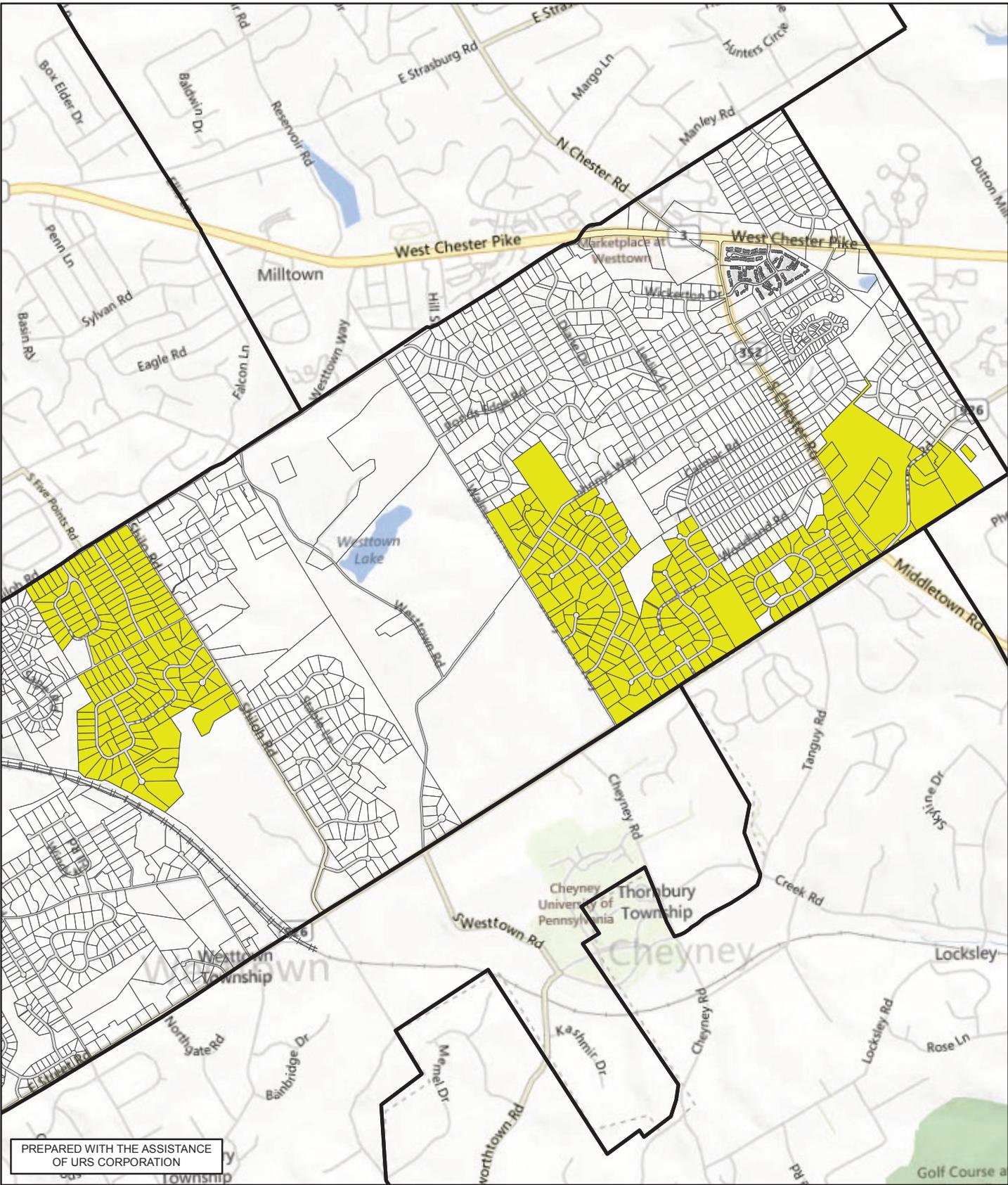
NOT TO SCALE

NOVEMBER 11, 2013



ON-LOT SEWAGE MANAGEMENT PROGRAM INITIAL INSPECTIONS **PHASE 1**

Westtown Township, Chester County, Pennsylvania



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OF URS CORPORATION



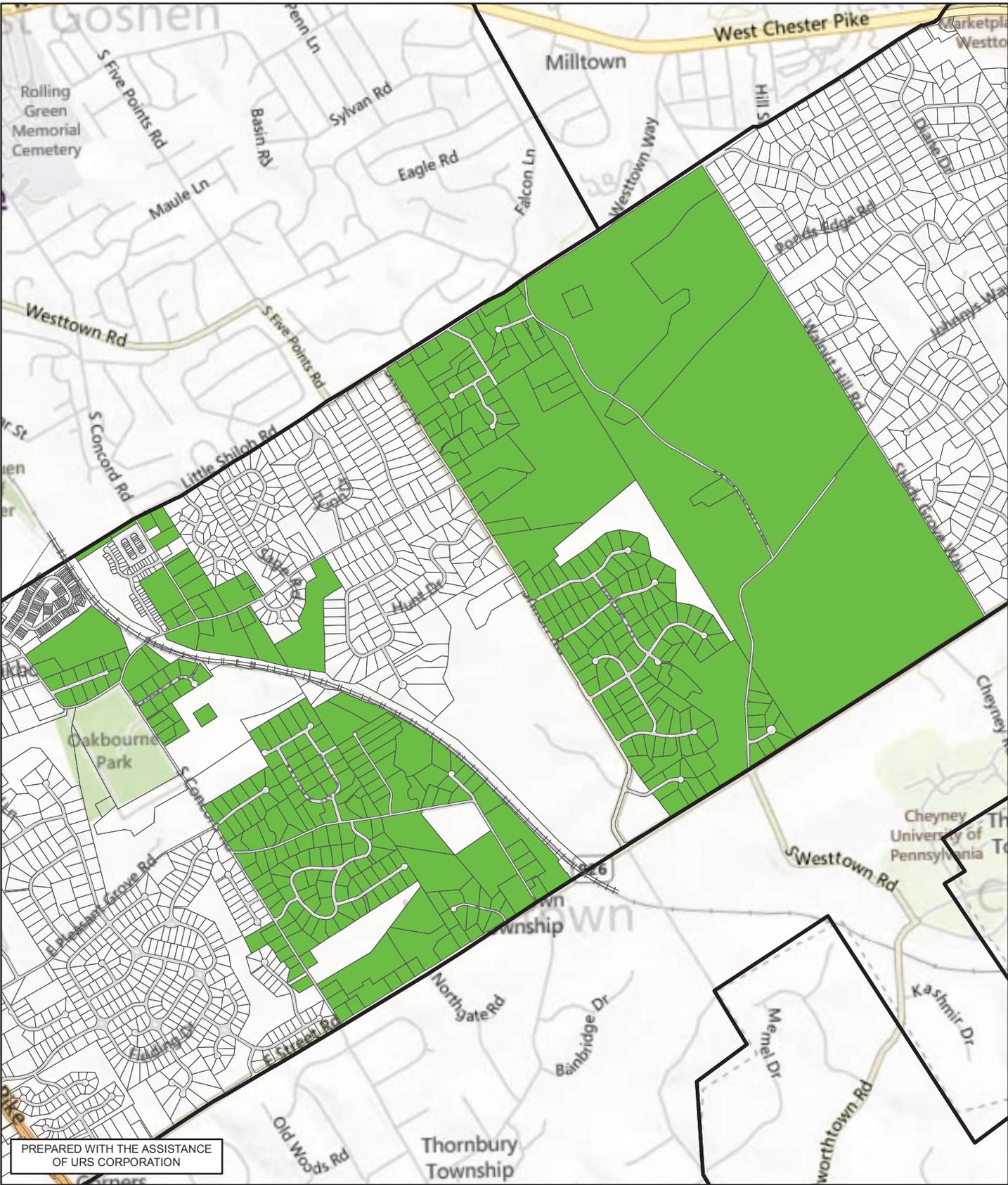
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NOVEMBER 11, 2013



ON-LOT SEWAGE MANAGEMENT PROGRAM INITIAL INSPECTIONS **PHASE 2**

Westtown Township, Chester County, Pennsylvania



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OF URS CORPORATION

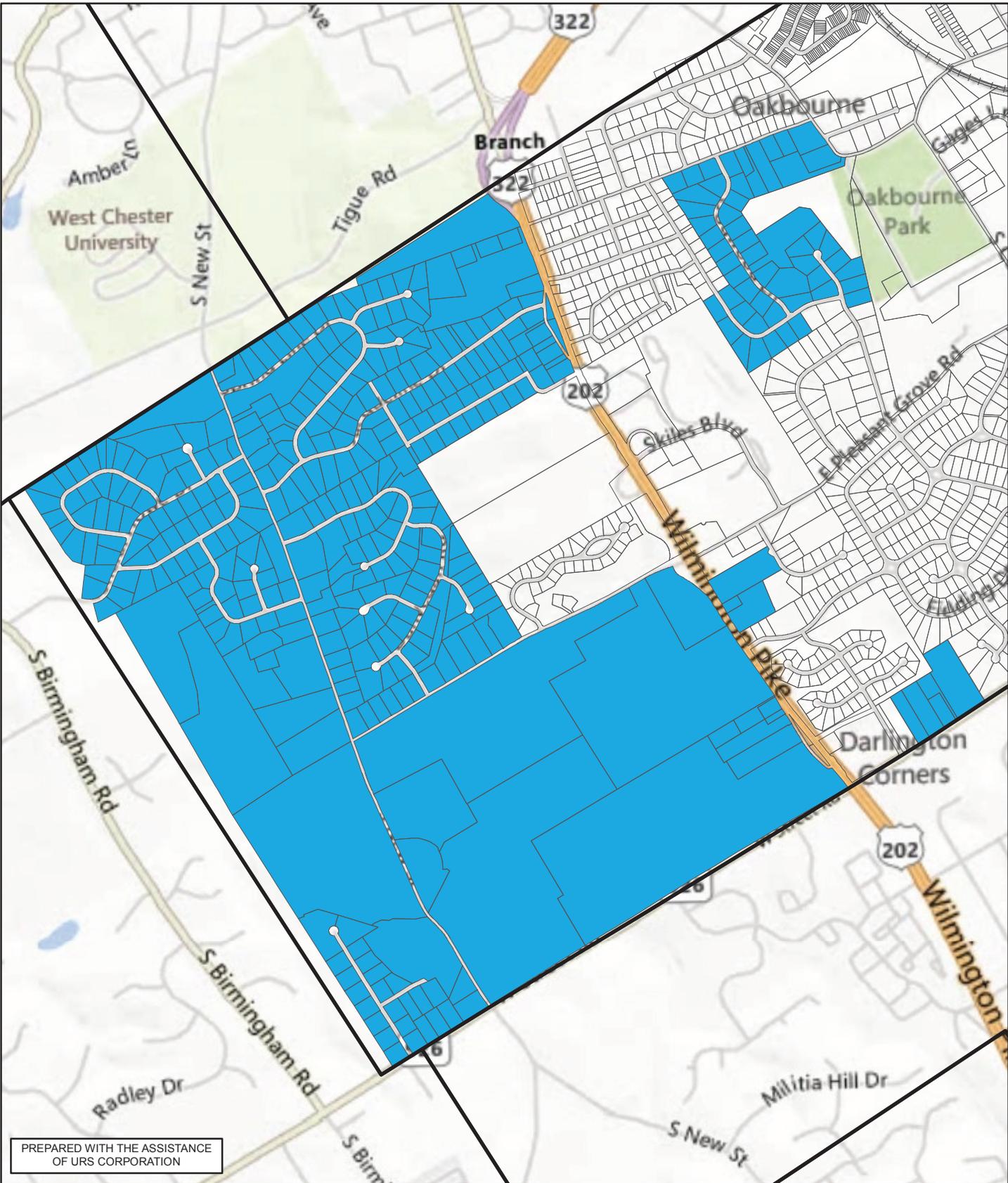


NOT TO SCALE
NOVEMBER 11, 2013



ON-LOT SEWAGE MANAGEMENT PROGRAM INITIAL INSPECTIONS **PHASE 3**

Westtown Township, Chester County, Pennsylvania



PREPARED WITH THE ASSISTANCE
OF URS CORPORATION



NOT TO SCALE
NOVEMBER 11, 2013



ON-LOT SEWAGE MANAGEMENT PROGRAM INITIAL INSPECTIONS **PHASE 4**

Westtown Township, Chester County, Pennsylvania

VI. WESTTOWN TOWNSHIP ENFORCEMENT RESPONSIBILITIES

As noted in the Section IV, the SMP requires certain actions by each property owner. It is hoped that once residents understand that the SMP consists of activities that will benefit each homeowner as well as our shared environment, there will be little or no need to enforce these requirements. The Township responsibilities do, however, require enforcement of the penalty provisions in the SMP Ordinance in the event a property owner does not comply with the SMP requirements.

The Township enforcement and penalty responsibilities are defined by Act 537. A summary of the enforcement steps which would be taken is presented below. This information is intended to help residents understand the general process; it is not intended to be legal advice.

1. Warning Letter

Once the Township receives an inspection report or other evidence suggesting a possible SMP Ordinance violation, the property owner will receive a letter from a representative of the Township advising the property owner of the Ordinance violations, noting possible remedies, and setting a deadline for correcting the Ordinance violation. Any such deadline may be modified if the property owner contacts the Township with adequate justification for doing so.

2. Enforcement and Assessment Hearing

If a property owner has not addressed an Ordinance violation through the warning letter process, civil penalties may be levied against the property owner after notice and a hearing by the Township. In these cases, a representative of the Township will issue a letter notifying the property owner of a proposed penalty, citing the specific Ordinance sections violated and setting a hearing date.

The assessment hearing will be held by a representative of the Township whether or not the property owner attends. The property owner may attend this hearing and present arguments against the proposed Township actions. If an Ordinance violation is affirmed at the hearing, a civil penalty will be assessed in an amount ranging from \$300 to \$2,500 for each violation, and the penalty may include the costs of damage caused by the violation and the cost of correcting the violation. In any case where the Township determines that damage resulting from the violation is of a continuing nature, it may impose a weekly assessment of not more than \$2500 per week for each violation that continues unabated.

The Township will issue a written decision following the assessment hearing advising the property owner of the hearing determinations, civil penalties assessed, the right to appeal to the Board of Supervisors and the requirement to post financial security for the amount of the civil penalty if appealing.

Upon receipt of the written decision following an assessment hearing, the property owner has 30 days to pay the civil penalty or to appeal the penalty or the fact of the violation. Failure to pay or submit a written appeal within 30 days constitutes a separate violation. If no appeal or payment is made by the property owner within 30 days, then after demand by the Township, the Township may enter the civil penalty, together with costs and interest, as a judgment in favor of the Township against the property of the violator in the Chester County Prothonotary's office.

3. Appeals

A property owner may appeal, in writing, the decision of an assessment hearing to the Township Board of Supervisors. If an appeal is taken, the property owner must forward the amount of the civil penalty to the Township within the 30 day appeal period to be held in escrow pending the appeals. The property owner may post a cash bond, an irrevocable letter of credit or an appeal bond to satisfy this requirement. If on appeal it is found that no violation occurred or that the amount of the penalty should be reduced, the Township will within 30 days return the appropriate amount to the property owner from escrow. Failure of the property owner to make the required deposit in escrow or submit an irrevocable letter of credit or a surety bond will result in a waiver of all legal rights to appeal the violation or the amount of the penalty.

Appeals are heard by the Board of Supervisors. A property owner may be represented by an attorney, but this is not required. At this hearing, the Board of Supervisors may affirm, modify, or reverse the decision which has been appealed. Following the appeal hearing, the Board of Supervisors will issue a written decision of its findings and assessment of civil penalties within 30 days. If no appeal or payment is made by the property owner within 30 days of this written decision, then after demand by the Township, the Township may enter the civil penalty, together with costs and interest, as a judgment in favor of the Township against the property of the violator in the Chester County Prothonotary's office.

Any subsequent appeals by the property owner must be to the Court of Common Pleas of Chester County.

In addition to the Township enforcement and penalty provisions, any property owner with a malfunctioning on-lot sewage system may also be subject to separate penalties imposed by the Chester County Health Department. A system is generally considered to be malfunctioning any time untreated or partially treated wastewater is discharged to the ground surface or to the waters of the Commonwealth.

VII. CONTACT INFORMATION

DEP may be contacted with any general questions regarding Pennsylvania Act 537 planning or on-lot sewage management programs.

Pennsylvania Department of Environmental Protection

Southeast Regional Office

2 East Main Street

Norristown, PA 19401

484-250-5970

http://www.depweb.state.pa.us/portal/server.pt/community/onlot_disposal_system/10583

The Chester County Health Department is charged with issuing all on-lot sewage system permits in Westtown Township, as well as investigation of sewage system malfunctions.

Chester County Health Department

Government Services Center

601 Westtown Road, Suite 288

West Chester, PA 19380-0990

610-344-6526

<http://www.chesco.org/index.aspx?nid=365>

Westtown Township should be contacted for any additional information regarding the Township's specific on-lot sewage management program.

Westtown Township (Physical Address)

1039 Wilmington Pike

West Chester, PA 19382

Westtown Township (Mailing Address)

P.O. Box 79

Westtown, PA 19395

Telephone: 610-692-1930

Web site: <http://www.westtownpa.org>

Email address for SMP questions: smp@westtown.org



**Westtown Township
1039 Wilmington Pike
West Chester, PA 19382
(610) 692-1930**