

Preliminary Report
Sewage Needs
Windolph Knoll Study Area
West Pikeland Township, Chester County
July 2009

180 property owners (72%) of the approximate 250 properties in the study area responded to a mail-in survey regarding their individual onsite sewage disposal systems. The study area was subdivided into seven (7) areas, Pickering Estates, Bridlewood, Spring View, Fox Ridge, Skyline Drive, Conestoga Road, Windolph Knoll (Upper Pine Creek Road & McKinley Lane).

A walking survey of portions of these areas was performed by the Chester County Health Department's Sewage Enforcement Office and a Consulting Engineer on June 23 and 24, 2009.

Part One: Areas part of the walking survey with the County Health Department.

Pickering Estates: The average age home is 46.8 years. These homes are mostly four (4) bedrooms and have less than three (3) persons residing per home. The homes appear to have been originally served with onsite sewage disposal systems consisting of a single compartment septic tank and a seepage pit (cesspool). This type of disposal system is no longer permitted under PaDEP regulations. Seepage pits and cesspools generally do not allow for the proper renovation of the sewage before the liquid is returned to the groundwater. This can cause problems for drinking water wells, particularly for the older type of shallow wells likely the type that serve many of the homes in this neighborhood.

During the walking survey it was observed that most of the sewage systems are in the middle of the front yards of the homes, the drinking water wells in a back side yard.

Homes along Fox Lane and the 800's section of Hunt Club Lane had very wet yards compared to the yards of the other homes in the neighborhood. Many homes along Fox Lane have downspout extension pipes directing roof water away from the building foundation and several of these homes appear to have multiple sump pump discharge lines. The properties along Kimberton Pike (Rt 113) were not field surveyed. Homes along Davis and Stirrup were field surveyed with no problems or concerns noted. No surfacing of untreated or partially treated sewage was observed, however given the wetness of the soil and the type absorption systems along Fox Lane there are likely several systems meeting the definition of a malfunction, that is untreated or partially treated sewage discharged into waters of the commonwealth (entering the groundwater.)

According to the mail-in this area has the highest percentage of possible hydraulic load problems and repairs to the soil adsorption area and the greatest percentage of homes with concerns with their sewage system. 66% of the property owners who responded to the mail-in survey indicated they are unsatisfied or know they have problems and would like to be connected to public sewers and 66% of the property owners indicated they are not currently having problem but would still like to be connected to public sewers. As indicate in the table below the street with the greatest concern is Fox Lane.

Street	# of homeowners who responded to the mail-in survey	# of homeowners who indicated they are unsatisfied or know they have problems and would like to be connected to public sewers	# of homeowners who indicated they are not currently having problem but would still like to be connected to public sewers
Fox Lane	15	13 – 87%	12 – 80%
Hunt Club Lane	16	10 – 63%	9 – 56%
Stirrup Lane	4	3 – 75%	3 – 75%
Kimberton Rd (Rt 113)	7	4 – 57%	3 – 43%
Davis Road	5	1 - 20%	2 – 40%
Total	47	31- 66%	29 – 62%

Replacement systems – based on field observations (soil wetness), lot size, distance from existing drinking water wells and a review of health department records, standard replacement systems those meeting current regulations would be difficult to permit. There are several alternative systems that may be permissible, but these systems can be quite expensive to install and operate. Homes may need to have wells relocated or wavers to the property deed for the 100 foot isolation distance.

At a minimum, public sewers should be considered for all the homes along Fox Lane, 800's section of Hunt Club Lane, and possibly the homes along Kimberton Road the backup to Fox Lane.

Bridlewood: The average age home is 24 years. All the homes are served with public water and for the most part the sewage disposal systems are located in the back of the home. The homes are mostly 4 bedrooms with less than 4 persons per home. A four bedroom home would have an onsite sewage system permitted for a peak flow 500 gallons per day. The typical average flow per person is about 50 gallons per day. The homes should have 1,250 gallon dual compartment septic tanks and based on an average of 4 persons per home, the septic tank should be pumped out once every 10 years when inspected once every three years. One item of concern – since most of septic tanks are located directly behind the house with the drain field in close proximity it is recommended that the septic system be field located prior to constructing a building addition, swimming pool, patio, or deck.

During the walking survey no problems or other concerns were noted.

44 homeowners of the 63 lots responded to the mail-in survey, 38 or 86% homeowners who responded indicated they are satisfied with their present sewage disposal system. 6 homeowners or 14% indicated they are either unsatisfied or know they have problems and would like to be connected to public sewers. 10 or 23% are not having any problems but would like to be connected to public sewers anyway.

Replacement systems: By observation the lots appear to be large enough for replacement systems should one ever be needed in addition since this neighborhood is served with public water there are less isolation restrictions.

Public sewers do not appear to be warranted.

Spring View: The average age home is 37 years, mostly 4 bedroom homes with an average of less than 3 persons per home. All the homes are served with individual drinking water wells.

A review of Health Department septic tank pump out records between May of 2004 and July of 2008 indicated three homes with a high number of pump outs, 20 Sycamore Lane, 510 Stonecroft Lane, and the home at Newcomen and Conestoga. The properties along Sycamore and Stonecroft along with the home at Newcomen and Conestoga, where subject to the walking survey.

The septic system of property on Sycamore Lane is located between the house and an inground swimming pool. It appears that additional soil was added on top of the absorption area. This additional soil on top of the absorption area will make it more difficult for oxygen to be in contact with the septic tank effluent and reduce the treatment capacity of the absorption area. The owner of this property did not respond to the mail-in survey. A second property on Stonecroft Lane also with a high number of reported pump outs has reported problems with the Health Department. Observation of the property indicates possible soil compaction, poor surface permeability and drainage issues, (lots of tire ruts from 4 by 4 trucks and SUV's). This property owner has been consulting with the Health Department to resolve issues with their sewage system. The home at Newcomen and Conestoga did not indicate anything unusual during the walking survey of the property.

Only one homeowner of the 26 who responded to the mail-in survey indicated any problems with their existing system, only 3 or 12% indicated they are either unsatisfied or know they have problems and would like to be connected to public sewers and 5 or 19% are not having any problems but would like to be connected to public sewers anyway.

Replacement systems: By observation the lots appear to be large enough for replacement systems should one ever be needed. However, since the homes are served with individual drinking wells there is less area available before of isolation restrictions.

Public sewers do not appear to be warranted.

Fox Ridge: The average age home is 32 years, mostly four bedroom homes with an average of less than three persons per home. All the homes are served with individual drinking water wells.

Of the 26 homeowners who responded to the mail-in surveyed, none of the property owners any indication of a need or desire to be connected to public sewer. Only two property owners indicated any concerns regarding their existing sewer system and 22 or 85% property owners indicated that are generally satisfied with their existing sewage system. The walking survey did not observe any problems.

Replacement systems: By observation the lots appear to be large enough for replacement systems should one ever be needed.

Public sewers do not appear to be warranted.

Part Two: Skyline Drive, Conestoga Road, Upper Pine Creek Road and McKinley Lane: These areas were not part of the field walking survey. These properties are quite large, spread apart and served with individual drinking water wells.

Skyline Drive: The average age home is 47 years. Six to eight homes are part of this study area, two homes may actually have Conestoga Road addresses. Only four (4) homeowners responded to the mail-in survey. Only one of these properties may have problems, however after reviewing the mail-in survey this home typically has 2 people living in the home and “for a short while 6”, correspondingly the number of loads of laundry per week, “4 typically (for a short while 20)”. This was the only home who wanted public sewers.

Conestoga Road: The average age home is 57 years but range from 8 to 200 years. 23 homeowners responded to the mail-in survey 23 or 91% are generally satisfied with their existing sewer system 4 or 17% having some concerns would like public sewers, however 7 or 30% would pay to connect if public sewers where an option.

Upper Pine Creek Road: The average age home is 55 years, with range from 11 to 200 years. 7 homeowners responded to the mail-in survey 4 or 57% are generally satisfied with their existing sewer system, the other 3 or 43% are having some concerns and would like public sewers.

McKinley Lane: The average age home is 13.7 years, but one home is 20 years old and the other two homes are 10 and 11 years old. All of these homeowners are satisfied with their existing sewer system and none of them want public sewers.

The properties on Skyline Drive, Conestoga Road, Upper Pine Creek Road and McKinley Lane generally have large enough lots for a replacement system. There is limited dissatisfaction regarding the existing sewer systems serving these homes. Public sewers do not appear to be warranted.

Conclusions and Recommendations:

Based upon a review of the mail-in surveys the Pickering Estates area has the greatest concern regarding their individual sewage systems and the greatest desire for public sewers. Based on the walking survey, observations the properties along Fox Lane and the 800 section of Hunt Club Lane of the Pickering Estates area would support the need for a public or community sewage collection system. The soils in this area appeared to be very wet and poorly drained.

A public sewer system for the properties along Fox Lane and the 800 section of Hunt Club Lane is recommended. Public sewers for the entire Pickering Estates area should be highly considered.

Reviewing the mail-in surveys of the remaining areas indicate less concern regarding their individual sewage systems and the less desire for public sewers. Based on the walking survey, with limited exception, there was nothing noted to support the need for public sewers; most of the lots are large enough for replacement systems.

An additional recommendation, the Township should consider is to require property owners to have components of their sewage disposal system field located prior to planning for any building addition, swimming pool, deck or patio. Many of the systems particularly in the Bridlewood area and on Sycamore Lane are located directly behind the house.

**West Pikeland Township
Sewage Needs Survey**

1. Property Owner's Name: _____
2. Property Address: _____
3. Approx. Age of home: _____ Any major additions to the original home: Y/N
4. No. of Bedrooms when home was originally built _____ and current No of BR's _____
5. How many people typically live in at home _____
6. Approx. how many loads of laundry are done at the home each week? _____
7. Are there any "In-Laws-Quarters" or any other separate living spaces, attached or detached to main home, like above a garage or in an outbuilding: Y/N
8. Has sewage ever backed up into the house, are there slow running drains, bubbling or gurgling sounds from toilets, sinks, showers or tubs, that couldn't be corrected or indentified as a problem from with inside the house? Y/N
9. Often homeowners discharge laundry, dishwasher, or sink water to a separate pipe that leads outside the house across the lawn or into a drainage ditch; does all laundry, dishwasher and sink water go to the sewage system? Y/N
10. Other than routine service and tank pump outs, have there been any repairs to the drain field or soil absorption area? Y/N If yes, approximately when was this work done? _____
11. Green grass over the drain field or soil absorption area is not uncommon, but is there excessive spongyness or wetness anywhere near the sewage system? Y/N
12. Odors from the sewage system should vent through the plumbing stack on the roof of the house, are there any foul odors observed near the system, drain field or soil absorption area? Y/N

General Questions

13. Are you having any problems with your present sewage disposal system? Y/N
14. Are you satisfied with your present sewage disposal system? Y/N
15. If you are either unsatisfied or know you have problems would you like to be connected to a Public Sewer System? Y/N
16. If you are currently not having any problems would you like to be connected to a Public Sewers Systems anyway? Y/N
17. If connecting to Public Sewers were an option would you connect? Y/N
18. If Public Sewers were an option would you be willing to pay a portion of the common costs of the sewer project and deferring the balance of cost when or if you actually connect to the sewer system? Y/N

Area	Pickering Estates		Bridlewood		Fox Ridge		Spring View	
Number of Homes Reported	47		44		26		26	
Average Age	46.8		24.0		31.8		37.2	
Average No. of BR's	3.9		3.8		4.1		3.8	
Average No. Persons per home	3.0		3.7		3.0		2.4	
Average loads of laundry/wk	5.3		5.3		5.3		4.1	
Homes with extra living quarters	2	4.3%	0	0.0%	2	7.7%	1	3.8%
Possible hydraulic load problems	16	34.0%	0	0.0%	2	7.7%	1	3.8%
Possible Grey Water Discharges	4	8.5%	1	2.3%	2	7.7%	3	11.5%
Reported repairs to SAS	18	38.3%	5	11.4%	2	7.7%	7	26.9%
Possible concerns with SAS	11	23.4%	4	9.1%	0	0.0%	1	3.8%
Odors	14	29.8%	3	6.8%	1	3.8%	2	7.7%
Homes with general concerns	12	25.5%	2	4.5%	2	7.7%	1	3.8%
Homes satisfied with existing system	17	36.2%	38	86.4%	22	84.6%	24	92.3%
With concerns want public sewers	31	66.0%	6	13.6%	0	0.0%	3	11.5%
With No concerns but want public sewers	29	61.7%	10	22.7%	0	0.0%	5	19.2%
Would connect if an option	31	66.0%	9	20.5%	0	0.0%	6	23.1%
Would pay up front costs	28	59.6%	12	27.3%	0	0.0%	4	15.4%
Additional comments	30	63.8%	12	27.3%	5	19.2%	5	19.2%
Area	Skyline Drive		Conestoga Road		Windolph Knoll			
Number of Homes Reported	4		23		10			
Average Age	47.3		57.4		42.4			
Average No. of BR's	4.8		3.7		3.3			
Average No. Persons per home	4.0		2.3		3.3			
Average loads of laundry/wk	9.2		3.0		5.8			
Homes with extra living quarters	0	0.0%	3	13.0%	0	0.0%		
Possible hydraulic load problems	1	25.0%	0	0.0%	0	0.0%		
Possible Grey Water Discharges	0	0.0%	5	21.7%	2	20.0%		
Reported repairs to SAS	2	50.0%	6	26.1%	0	0.0%		
Possible concerns with SAS	0	0.0%	2	8.7%	1	10.0%		
Odors	0	0.0%	1	4.3%	1	10.0%		
Homes with general concerns	0	0.0%	1	4.3%	1	10.0%		
Homes satisfied with existing system	3	75.0%	21	91.3%	7	70.0%		
With concerns want public sewers	1	25.0%	4	17.4%	3	30.0%		
With No concerns but want public sewers	2	50.0%	6	26.1%	1	10.0%		
Would connect if an option	2	50.0%	7	30.4%	1	10.0%		
Would pay up front costs	1	25.0%	6	26.1%	1	10.0%		
Additional comments	0	0.0%	9	39.1%	6	60.0%		