

**UPPER SALFORD TOWNSHIP
ACT 537 PLAN**

**PART A
PLAN PREPARATION**

I. PREVIOUS SEWAGE FACILITIES PLANNING

A. Identification and Analysis of All Existing Sewage Facilities Planning

1. Planning Process Re: Act 537 Requirements

The Pennsylvania Sewage Facilities Act requires that each municipality prepare and submit an official plan to assure the safe and sanitary treatment of sewage within its borders. The Sewage Facilities Plan must be updated when ordered by the Department of Environmental Protection or the Municipality may initiate their own update. Unless an exception or exemption applies, the Sewage Facilities Plan must be updated to address the sewage needs of each subdivision and land development within its borders.

2. Previous 537 Planning

In 1971, the Montgomery County Planning Commission prepared the Montgomery County Sewage Facilities Plan. This was the first Act 537 Plan for the county and its municipalities. The plan revealed no sewage facilities in Upper Salford Township, but did identify the villages of Woxall and Salfordville as 10-year growth areas. It proposed an interceptor between Woxall and Bergey, and an interceptor and force main between Bergey and Salfordville. (See Appendix A for Resolution of Adoption).

Between 1973 and 1976, an Act 537 Study was prepared for the municipalities in the East Branch Perkiomen Creek watershed. It proposed a 0.08 mgd sewage treatment plant to serve Woxall, located at the confluence of Vaughn Run and the East Branch. Woxall was to be connected by a gravity interceptor. All participating municipalities approved this plan by resolution in the fall of 1976; it further recommended that a 201 Facilities Plan (federal planning for EPA projects) be undertaken.

In a 1978 Information Update on the County Sewage Facilities Plan, the County Planning Commission noted Woxall, Salfordville, and Bergey as areas with existing on-site sewage problems. It also reported that a number of sand mounds had been installed along Bergey Road, due to poor soil conditions.

The County's 1979 Sewage Facilities Plan map continued to show Woxall, Salfordville, and Bergey as 10-year growth areas. This updated map showed all three locations connected by interceptor to a facility in Schwenksville on the Perkiomen Creek.

The 201 Study, begun in 1977, was completed in the early 1980s. Among its recommendations was the construction of a sewage treatment plant in Woxall.

In the intervening years, the plans to construct a sewage treatment plant and interceptors in Upper Salford have not been implemented. This seems attributable to a number of factors, including the relatively slow rate of growth in population and dwelling units, the continued predominance of single-family detached dwellings, and the costs associated with the installation of the facilities. Due to these factors, the Township has not constructed a sewage treatment plant or any other associated facilities.

3. Planning Modules

In 1977, the Township approved modules that amended the 537 Plan for a development at the Spring Mount Ski Area that created a subdivision with individual sewage systems. (See Appendix B for Resolution of Adoption).

The Township has approved eight (two municipally owned) Planning Modules for small flow treatment facilities (SFTF) with stream discharges. In the six non-municipal cases, the facility was to replace a failing on-lot septic system. In all cases, the SFTF system was chosen due to poor soil conditions on-site and the lack of any areas suitable for a replacement subsurface disposal system. The Township executed maintenance agreements for all non-municipally owned systems that require, among other things:

- a. Private ownership of the system.
- b. Operated by Owner or Contractor of Owner.
- c. Quarterly inspections in the first year and minimum semi-annual inspections thereafter.
- d. Reports to Township that system is operating properly.

- e. Inspection at any time by Township and ability of Township to require repairs or perform repairs if Owner fails to do so.
- f. Ability for Township to recoup repair costs from Owner.
- g. Escrow account on behalf of the Township.

4. Health Department

The Township requested that the Montgomery County Health Department provide documentation on several areas in which the Township had received complaints regarding on-site sewage systems. In its response letter of June 27, 1996, the Department identified four locations of concern, based on its records of failing or failed systems, the introduction of replacement systems, and the investigation of alternative systems:

- a. Woxall, including Old Skippack Road and Perkiomenville Road areas.
- b. Hickory Road, Bittersweet Drive, and Heather Drive areas.
- c. Salford Street and (potentially) Old Church Road.
- d. Salfordville, in the Old Skippack Road, Bergey Road, and Wolford Road areas.

According to the County Health Department letter, each of these areas is characterized by soils with limitations for residential use.

In 2006, a second request was made to the Health Department for a list of known malfunctions and their location. The Department did not issue a formal letter however, it did provide a list of properties by address where suspected malfunctions exist and some enforcement action has been taken. The list of properties includes the areas of concern from 1996, but also identifies some properties outside of the village areas in rather isolated numbers.

II. PHYSICAL AND DEMOGRAPHIC ANALYSIS

A. Base Line Mapping and Analysis of Environmental Characteristics

1. Sewage Facilities Planning Areas and Municipal Boundaries

For purposes of this plan update, Upper Salford Township will be divided into four sewage facilities planning areas, as shown on Map Figure 13. These planning areas will be the basis for carrying out several essential aspects of the planning process: (i) analysis of specific wastewater problems; (ii) establishment of policies for areas of similar wastewater facility needs; and (iii) as appropriate, development of strategies for managing existing or proposed facilities.

Three of the planning areas are based on the Montgomery County Health Department's identification of concentrated problems with individual on-site systems, small lot sizes, and a high percentage of pre-regulatory systems. Those areas are:

- a. Woxall Area - including Bittersweet, Burton, Barndt, Old Skippack, Hickory, Heather, and Perkiomenville Roads.
- b. Salford Area – including Salford Street, Baghurst Alley, Hendricks and Old Church Roads.
- c. Salfordville Area - including Old Skippack, Bergey, Wolford and Woessner Road areas.
- d. Rural Balance – This will include any area not identified within the three village study areas. Here, individual on-site systems will predominate; central or community systems are possible under the Conservation Design Option of the Zoning Ordinance.

2. Identification of Physical Characteristics

The land in Upper Salford lies within three separate drainage basins: Ridge Valley Creek, East Branch Perkiomen Creek, and Main Branch Perkiomen Creek. These three streams, along with Unami Creek and Vaughn Run, constitute the main watercourses within the Township. (See Map Figure 6)

The Township's network of floodplain areas are shown on Map Figure 3. This map and the topography map (see Map Figure 2) depict the significant number of smaller subcatchment areas and

their respective streams that are tributary to the main creeks identified previously in this section. There are no other significant surface waters within the Township.

3. Soils

As already noted, Upper Salford's soils include considerable areas with severe limitations for on-site (including community subsurface) sewage disposal. Several of these limitations are documented in the Comprehensive Plan; constraints related to sewage disposal also are presented in the Soil Survey of Montgomery County (U.S.D.A., Soil Conservation Service, 1967) and in the Pennsylvania Department of Environmental Protection's Technical Manual for Sewage Enforcement Officers.

The Comprehensive Plan discusses and maps several features of the Township's soils that pose problems from a sewage standpoint. These include hydric soils and alluvial soils; most of these reflect the Township's stream corridor network, although several relatively extensive swaths of hydric soil exist apart from flood plains. None of these soils should be developed nor used for land application or subsurface sewage disposal. (See Map Figures 3 and 6)

Map Figure 9 also shows soils with depth to bedrock less than four (4) feet. These soil classifications cover the majority of the Township. Shallow bedrock soils generally require sand mounds for subsurface disposal of effluent. Shallow bedrock soils do not preclude the use of spray/drip irrigation disposal of effluent if designed and maintained properly. A spray/drip irrigation system could be designed, but lagoon storage is very expensive in rock. Seasonal stream discharge during the winter and spring months when the lagoons are usually used for storage would be an alternative. Shallow bedrock also poses challenges for spray irrigation rates. However, depending on specific site conditions, application rates could be designed so that the majority of the effluent could be absorbed through evapotranspiration and cover crop uptake. Table II-1 lists the soils with depth to bedrock less than four feet for Montgomery County.

Table II-1
Soils with Depth to Bedrock Less than Four (4) Feet
Montgomery County

Soil Series	Soil Symbol
Lansdale	LaE3
Legore	LgC3
Legore	LgD3
Lehigh	LhB3
Lehigh	LhC3
Penn	PaB3
Penn	PaC3
Reaville	RsA2
Reaville	RsB2
Reaville	RsB3
Reaville	RsC3

Source: Montgomery County Planning Commission

Map Figure 4 depicts Prime Agricultural Soils within Upper Salford Township. Generally, prime agricultural soils are thought to be suitable for subsurface disposal of effluent. However, as shown in Table II-2, the prime agricultural soils for Montgomery County and the suitability for inground sewage disposal do not match well. Only 6 out of 32 soils listed as prime agricultural soils have potential for in-ground disposal. The rest of the soils have potential for either sand mound systems and/or limited or no potential for on-lot disposal. As with shallow depth to bedrocks soils, these prime agricultural soils with sewage disposal limitations should not be eliminated from consideration for spray/drip irrigation disposal of effluent.

Table II-2
Prime Agricultural Soils and Sewage Suitability
Montgomery County

Soil Series	Soil Symbol	Sewage Suitability
Beltsville	BIB2	L/MND
Bermudian	Bm	L
Birdsboro	BnA	C/MND
Birdsboro	BnB2	C/MND
Brecknock	BsB2	MND
Chester	CgAZ	C
Chester	CgB2	C
Codorous	Ch	L
Duffield	DuB2	MND
Edgemont	EcB2	MND
Glenelg	GnB2	C
Glenville	GsA	L/MND
Glenville	GsB2	L/MND
Lansdale	LdA2	MND
Lansdale	LdB2	MND
Lawrenceville	LeA	L/MND
Lawrenceville	LeB2	L/MND
Lehigh	LhA2	L/MND
Manor	Mhb2	C
Mount Lucas	MoA	L/MND
Mount Lucas	MoB2	L/MND
Neshaminy	NhB2	MND
Penn	PeA2	MND
Penn	PeB2	MND
Penn-Lansdale	P1B3	MND
Raritan	RaA	L/MND
Raritan	RaB2	L/MND
Readington	ReA	L/MND
Rowland	Rt	L
Rowland	Ru	L
Rowland	RwA	L/MND
Rowland	RwB	L/MND

Sewage Suitability: C = Potential for In-Ground; MND = Potential for Sand;
Mound L = Limited or No Potential for On-Lot Disposal
Source: Montgomery County Planning Commission

4. Geologic Features

The Comprehensive Plan describes the three geological units underlying Upper Salford Township: Diabase, Lockatong Formation, and Brunswick Formation. These underlying geologic formations, and their relative locations within the Township, can be seen on Map Figure 14. Of these, the Brunswick Formation is most prevalent, both within the Township and in this sector of Montgomery County. It is sedimentary and consists primarily of reddish brown shale, mudstone and siltstone. This Formation exhibits moderate porosity and infiltration characteristics and, in general, can be counted on for moderate groundwater yields approaching 60 gpm. Highest yields for this Formation can be found in wells exceeding 200 feet in depth and/or in the sandstone and conglomerate portions of the formation.

The two areas of Diabase, an igneous unit, are in the vicinity of Spring Mountain and along Ridge Valley Creek. These areas exhibit features typical of the Diabase formation: steeply sloped, resistant to erosion, and very low porosity resulting in poor infiltration and subsequently low ground water yields. The median yields for this formation are approximately 5 gpm and varying groundwater levels show signs of strong seasonal influence.

The Lockatong Formation occurs in several large arcs in the northern portion of Upper Salford. It is sedimentary formation consisting primarily of siltstone and claystone. It too lacks the porosity necessary to allow high levels of infiltration, which leads to reduced yields. The median yield for wells developed in the Lockatong formation is 35 gpm.

The Township's geology and soils combine to offer serious limitations to future development activities. Much of the soil is not conducive to on-site, subsurface sewage solutions, while the supply of groundwater is substantially constrained within the Township.

5. Topographic Features

Steep slopes (i.e., in excess of 15%) in Upper Salford are found most prominently in association with stream corridors. As shown on Map Figure 2 and Figure 6, this is particularly evident along the Perkiomen and East Branch Perkiomen corridors. Spring Mountain and its immediate environs is the other area where steep slopes are prevalent.

These sloped areas are ill-suited for development activities or disturbance of any kind. Their retention in a vegetative condition will benefit water quality, both locally and downstream, and protect scenic resources. This is, in fact, the Township's land use policy for areas of steep slope.

6. Potable Water Supplies

With the exception of the Shelly Square Shopping Center, which is currently served by North Penn Water Authority, groundwater drawn from on-site wells is the sole water source in Upper Salford. The North Penn water supply line was extended west along SR 63 from the municipal border of Lower Salford, and the service area is currently restricted to the commercial shopping center. The constraints posed by the Township's geology and soils, however, have resulted in septic and/or well problems in several areas of the Township, most notably Woxall, Salford and Salfordville.

7. Wetlands

Upper Salford has not attempted to field delineate and map jurisdictional wetland areas. The Township's subdivision/land development ordinance requires that all wetlands and surface water features be identified and field delineated as part of the required "Existing Features and Site Analysis Map" and submitted by each applicant when developing his/her property (Section 401.B.2). The Map Figure 6 depicts the wetlands that have been determined by the National Wetland Inventory (NWI). In addition to these wetlands, the map depicts the soil series that have been classified as hydric. Hydric soils are soils that are periodically wet, remaining in an undrained condition and often support the growth of wetland vegetation. Soils with hydric components are often an indication of wetlands. Soils with hydric components and/or inclusions often border surface waters; however they can also be found throughout the Township in depressions, bottomlands, swales, drainage ways and alluvial soils. Actual regulation of wetlands is left to the appropriate state and federal authorities.

III. EXISTING SEWAGE FACILITIES AND IDENTIFYING EXISTING NEEDS IN PLANNING AREA

A. Identify, Map And Describe Existing Seweage Facilities Within The Planning Areas

1. The Township currently owns two Small Flow Treatment Facilities (SFTF's) located on Township property. The first serves the Township administration building, maintenance building and a single family residence co-located with the municipal buildings and is located off Salford Station Road. This SFTF is permitted for a maximum daily flow of 800 gpd and discharges to the Perkiomen Creek. The other treats the wastewater generated by the restrooms and concession stand of the Upper Salford Park located at the intersection of Schwenksville and Salford Station Roads. This SFTF is permitted for 1,500 gpd and discharges into a natural drainage swale that bisects the property. Aside from these two SFTF's there are currently no municipally owned sewer facilities within Upper Salford Township. There is a privately owned Sewage Treatment Plant (STP) located on the southern end of the Shelly Square Commercial property. This commercial property is located at the south eastern corner of the intersection of Shelly Road and Sumneytown Pike (SR63). This plant currently serves the needs of the commercial uses located on the property and is permitted to discharge 12,446 gpd. The STP discharges to the East Branch of the Perkiomen Creek which borders the southern portion of the property. The Township has entered into an agreement with the owner that would allow the municipality the option to purchase the plant at a later date, if it so desired. There are six (6) additional SFTF's located in the Township that were permitted to replace failing on-lot septic systems. In each case, the soils were not conducive to conventional soil based disposal methods. The balance of the Township is served by either Community On-Lot Disposal Systems (COLDS) or Individual On-Lot Disposal Systems (OLDS).
2. There are currently no known problems with any of the Small Flow Treatment Facilities currently permitted to operate within Upper Salford Township.
3. The Township requires all privately owned Small Flow Treatment Facilities to enter into an Operation and Maintenance agreement with the municipality. A sample O&M Agreement can be reviewed in Appendix C.

B. Evaluation of COLDS and OLDS and Identifying Needs within the Planning Areas

1. In August 2006, a well sampling and field septic survey plan was initiated in the planning areas. The focus was on the village areas of Woxall, Salfordville and Salford. Several properties outside the village study areas were surveyed and their wells sampled, however the emphasis was placed on the villages to assess the conditions of septic systems. These Study Areas, as identified in Chapter II, were selected because they were previously identified as on-site problem areas by the Montgomery County Health Department (MCHD) in a letter dated June 27, 1996. In addition to the MCHD concerns, these areas were most likely to have needs due to the age of the systems. Most of the OLDS found in the Village study areas are in excess of 35 years in age and predate regulatory requirements of Title 25, Chapters 72 and 73. Many of the lots within the villages are less than one acre. Small lots often possess wells sited too close to absorption areas resulting in contamination of the potable water source. Conventional OLDS repairs become difficult on these smaller parcels due to unavailability of suitable replacement sites for failing absorption areas. The surveys and well sampling was conducted over a three month period ending in October 2006. All well sampling and septic surveys were completed by a Certified Sewage Enforcement Officer (SEO) or performed under his direct supervision. Any septic survey that resulted in a suspected malfunction was field verified by the SEO. All properties were solicited in a random manner within the village study areas. Well sampling was performed with care to avoid contamination of samples and strict chains of custody were maintained on every sample. All samples were tested for the following contaminants:

Total Coliforms
Fecal Coliforms
Nitrate-Nitrogen

All samples were stored in iced coolers during collection and were submitted to the Laboratory within six hours of sampling. M.J. Reider Associates, Inc., a state certified test laboratory, was utilized for all analysis of the well samples. The documentation of the septic survey, well sample test results and the chain of custody forms for each property are available at the Upper Salford Township administration building for public review. The summary of results of the surveys and well samples are as follows:

Woxall Area

There are a total of 172 properties within the Woxall study area. Field surveys and well samples were obtained on 99 properties. There were 45 wells that tested positive for Total Coliform. There were 7 wells that tested positive for Fecal Coliform. There were 6 wells that tested positive for the presence of nitrate-nitrogen levels in excess of 5 mg/l. There were 15 properties identified with suspected surface malfunctions. There were 3 properties identified within the study area currently being served by either a stream discharge or holding tank. If we eliminate the wells that tested positive for the presence of Total Coliforms and total the number of properties that tested positive for fecal coliform and elevated nitrates(>5mg/l), we have 13 suspected subsurface malfunctions. If we add this figure to the 15 suspected surface malfunctions, we have a total of **28** properties with suspected malfunctions. While the surveys and well sampling were performed by, or under the direct supervision of a certified SEO; we will defer the confirmation of the malfunctions to the MCHD.

MCHD has identified a total of 7 confirmed malfunctions within the study area. Six of which were in addition to the 28 suspected malfunctions identified during the field survey/well sampling process.

When applying the criteria set forth in the PADEP Technical Guidance Manual "ACT 537 Sewage Disposal Needs Identification" for determining potential malfunctions, all 172 properties identified within the study area meet the criteria for potential malfunctions.

Salfordville Area

There are a total of 66 properties within the Salfordville study area. Field surveys and well samples were obtained on 33 properties. There were 17 wells that tested positive for Total Coliform. There were 8 wells that tested positive for Fecal Coliform. There were 14 wells that tested positive for the presence of nitrate-nitrogen levels in excess of 5 mg/l. There were 9 properties identified with suspected surface malfunctions. There were 2 properties identified within the study area currently being served by Cesspool. If we eliminate the wells that tested positive for the presence of Total Coliforms and total the number of properties that tested positive for fecal coliform and elevated nitrates(>5 mg/l); we have 17 suspected subsurface malfunctions. There were 5 properties that tested positive for both Fecal Coliform and elevated Nitrates, therefore they were only counted once. If we add this figure to the 7

suspected surface malfunctions (2 were omitted because they were already identified as having subsurface malfunctions), we have a total of **24** properties with suspected malfunctions. While the surveys and well sampling were performed by, or under the direct supervision of a certified SEO, we will defer the confirmation of the malfunctions to the MCHD.

MCHD has identified a total of 8 confirmed malfunctions within the study area. Five of which were in addition to the 24 suspected malfunctions identified during the field survey/well sampling process.

When applying the criteria set forth in the PADEP Technical Guidance Manual "ACT 537 Sewage Disposal Needs Identification" for determining potential malfunctions, all 66 properties identified within the study area meet the criteria for potential malfunctions.

Salford Area

There are a total of 99 properties within the Salford study area. Field surveys and well samples were obtained on 28 properties. There were 14 wells that tested positive for Total Coliform. There were 3 wells that tested positive for Fecal Coliform. There were no wells that tested positive for the presence of nitrate-nitrogen levels in excess of 5 mg/l. There was 1 property identified with suspected surface malfunction. There were 2 properties identified within the evaluated study area currently being served by Cesspools. If we eliminate the wells that tested positive for the presence of Total Coliforms and total the number of properties that tested positive for fecal coliform and elevated nitrates(>5 mg/l), we have 3 suspected subsurface malfunctions. If we add this figure to the 3 suspected surface malfunctions (2 cesspools were added due to the small lot sizes and relatively high density of the village area), we have a total of **6** properties with suspected malfunctions. While the surveys and well sampling were performed by, or under the direct supervision of a certified SEO; we will defer the confirmation of the malfunctions to the MCHD.

MCHD has identified all properties fronting Baghurst Alley as malfunctioning. This results in **24** confirmed malfunctions. Twenty-three of which were in addition to the 6 suspected malfunctions identified during the field survey/well sampling process.

When applying the criteria set forth in the PADEP Technical Guidance Manual "ACT 537 Sewage Disposal Needs Identification"

for determining potential malfunctions, all 99 properties identified within the study area meet the criteria for potential malfunctions.

Rural Balance of the Township

The primary focus of the field survey and well sampling was the three village areas. This was for the reasons outlined earlier in Article II. These villages have the highest potential for malfunctions. However, there were 16 properties tested on the periphery of the Woxall study area. Fourteen properties were surveyed in the recently created Vaughn Run Subdivision. The OLDS serving the community are all less than 10 years old. The results are as follows:

There were 4 wells that tested positive for Total Coliforms. There were no wells that tested positive for Fecal Coliforms. There were 4 wells that tested positive for elevated Nitrates (>5 mg/l). There were 3 properties identified with suspected surface malfunctions. That results in 7 of the 14 tested properties with suspected malfunctions. MCHD has provided us with no record of malfunctions within this subdivision. We will defer confirmation of these suspected malfunctions to the Health Department.

The MCHD has provided us with a list that has identified 21 confirmed malfunctions within the rural balance of the Township. Unfortunately, there is no true pattern to the malfunctions that would show a systemic problem in any one area. The soils are generally unsuitable throughout the Township for purposes of sewage disposal and any preregulatory OLDS would possess the potential for malfunction. The extent of testing can be more clearly seen on Map Figure 8. A summary of the results of the field septic surveys and well tests can be found in Appendix D. The individual well test results and surveys are available for review at the Township Building. The MCHD list of confirmed malfunctions can also be found in this Appendix.

2. On-Lot Management Program

The Township has not adopted an OLDS or COLDS Management Ordinance. A model Ordinance has been proposed as part of this Act 537 Plan Update. This Ordinance can be reviewed in Appendix E. This ordinance outlines the operation and maintenance requirements for OLDS and small volume COLDS.

C. Identification Of Holding Tanks Within The Township

1. The Township currently defers the regulation and enforcement of holding tanks to the Montgomery County Health Department.

IV. IDENTIFICATION OF FUTURE DEVELOPMENT AND GROWTH AREAS

A. Identification and Description of all Municipal/County Planning Documents

1. Existing Planning Documents

a. Montgomery County Comprehensive Plan

In September 2005 the County adopted a revised County Comprehensive Plan titled "Shaping Our Future: A Comprehensive Plan for Montgomery County." The two primary land uses identified for Upper Salford Township are "Rural" and "Open Space" with the goal to preserve existing woodlands and farmlands to the maximum extent possible.

b. Indian Valley Regional Comprehensive Plan

This is a multi-municipal regional comprehensive plan that includes Franconia, Lower Salford, Salford, Souderton, Telford and Upper Salford Townships. The Regional Comprehensive Plan was adopted in July 2005, as amended in July 2007. The future land use goals for Upper Salford Township are consistent with the County's goals. The plan identifies Upper Salford into two land use categories. The first being a "Rural Resource Area" and the second being a "Village Conservation Area." No growth areas are identified within Upper Salford Township as part of this plan.

c. Upper Salford Township Comprehensive Plan Update

This plan update was adopted in 1995 and is now superseded by the Indian Valley Regional Comprehensive Plan. The future land uses identified in this plan no longer apply to the municipality for planning purposes.

d. Joint Open Space and Environmental Resource Protection Plan

This was a joint municipal planning effort that involved Upper Salford Township and Schwenksville Borough. This plan was adopted by Upper Salford Township in May 2006. The goals of this plan were to maintain the rural character of the Township and to identify, preserve and protect the environment and natural features of the area. This plan and its goals are consistent with the goals and land use policies

of both the County and Regional Comprehensive plans.

2. **Zoning and Subdivision Ordinances**

a. **Existing Zoning Ordinance**

The current Upper Salford Township Zoning Ordinance was adopted in July 2005. It replaced the Ordinance 99-1 adopted January 1999. There is general similarity in the zoning classifications in the old and new Ordinances, however there were some significant changes made to the use districts to remain consistent with the goals and objectives of the County and Regional Comprehensive plans. The current Ordinance eliminated the 20% bonus density when utilizing the Conservation Design Option, but still offers increased flexibility in lot size, setbacks and lot coverage in “conservation subdivisions” in most residential zoning classifications. In addition to three overlay districts (floodplain, steep slope, and riparian corridor) the ordinance contains eight separate use districts. Three of these are residential, and they represent a great majority of the land in the Township. It should be noted that the current Official Zoning Map for the Township has also been revised to reflect the amended use districts and to remain consistent with other planning documents currently adopted. (See Appendix F, Upper Salford Official Zoning Map)

The **RA-5 Residential Agricultural District** requires the largest minimum lot size for single-family detached dwellings in the Township at five acres. Uses are limited essentially to residential and agricultural; the district is currently mapped only in the far northern corner of the Township. Conservation Subdivisions are not permitted in this district.

The **RA-2 Rural Residential District** also is primarily a single-family residential and agricultural district, with a number of non-residential uses available by Conditional Use. Minimum lot size is four acres in Rural Subdivisions and the method of sewage disposal is individual on-lot. Residential conversions also are permitted, with standards designed to assure the adequacy or expansion of existing sewage facilities. This use district is the largest of all districts and applies to the majority of the Township. The Conservation Design Option is available in this District. Yield plans are required when developing under this option to ensure a density neutral plan is being offered. This yield plan requires

conceptual design utilizing 80,000 square foot lot configurations to determine maximum density on a tract. Once the density is determined, the applicant can reduce lot sizes to 15,000 square feet. This reduced lot size implies community sewer system; however individual on-lot systems are encouraged when practical.

The **R-30 Village Commercial/Rural Residential District** is the highest density single-family district in the Township, with a minimum lot size of 60,000 square feet. It is mapped within the villages of Woxall, Salford and Salfordville. Conservation Subdivisions require the submission of a yield plan to insure a “density neutral” proposal as described previously in the R-2 District. The applicant can then propose a reduction in lot size for single family detached of 12,000 square feet. Non-residential uses are also permitted on lots that front on Old Skippack Road under certain conditions. Rural Subdivisions are permitted with individual on-lot systems only. Conservation Subdivisions permit individual, central or community systems.

Upper Salford’s five non-residential zoning districts currently occupy relatively little land and offer few implications for sewage facilities planning. The **IN Institutional District** addresses five scattered locations of existing institutions. The **CB Commercial Business District** provides for primarily neighborhood-scale commercial uses; most of the land zoned CB falls within the villages of Vernfield, Salfordville, and Woxall. The exception to this is Shelly Square Shopping Center. Shelly Square has its own package treatment plant that was discussed briefly in Article III and will be discussed in greater length later in the document. The **REC Recreational District** is designed for the Spring Mountain area and the Township park properties. Infrastructure demands on these properties are minimal and future development is not contemplated.

The ordinance contains two industrial districts: the **LLI Light Limited Industrial** and the **LI Limited Industrial**. The **LLI District** allows a range of industrial uses and supplemental service-oriented commercial uses consistent with the rural character of the Township. The minimum lot size is two acres and each applicant must demonstrate to the Board that either the existing or proposed OLDS is suitable for the proposed use. The zoning map contains two small areas of **LLI** along Sumneytown Pike.

The **LI District** provides for a full range of industrial uses with the more intensive uses permitted as conditional uses. Any applicant, as a condition of approval, must demonstrate to the Board that either the existing or proposed OLDS is capable of supporting the proposed use. The **LI District** is confined to an area bounded by Sumneytown Pike, the Franconia Township line, and the East Branch Perkiomen Creek.

b. Subdivision and Land Development Ordinance

The Upper Salford Township Subdivision and Land Development Ordinance, originally enacted in 1963 was most recently amended in October, 2004. Consistent with the Pennsylvania Municipalities Planning Code, it governs the process of developing land for uses permitted through zoning. The following sections regulate sewage facility planning and design requirements:

Section 402.D.3 – Preliminary Plan Submission

Requirements: This section requires an infrastructure plan as part of the preliminary plan submission. It requires the location and test results of all on-site soil testing, the submission of the Sewage Planning Module where appropriate and all collection, conveyance and treatment systems to be shown on the plan with associated construction details.

Section 403 – Final Plan Submission Requirements: This section requires proof of PADEP Sewage Facilities Planning Module approval.

Section 607.B – Wastewater Disposal: This section establishes general standards for the design of both OLDS and COLDS septic systems. It requires review and approval by both MCHD and PADEP where applicable and requires all individual on-lot disposal systems be designed in accordance with Title 25, Chapter 73 standards.

c. Limitation Areas

Upper Salford affords some protection to sensitive lands within the Township through its Zoning and Subdivision/Land Development Ordinances. The Zoning Ordinance provides for three overlay districts to protect floodplains, steep slopes and riparian corridors respectively. The Subdivision/Land

Development Ordinance also has special floodproofing provisions for any existing or proposed sanitary facilities located in close proximity to the Floodplain. Section 609.G

The Flood Plain Conservation District, Article XVI, provides protection to floodplain areas consistent with federal and state statutes and flood insurance programs. On-site sewage disposal systems are prohibited in the floodplain and sewage treatment plants are permitted as special exceptions.

The Steep Slope Conservation District, Article XVII, is an overlay zone which affords varying degrees of protection to slopes greater than ten (10) percent. The percentage of allowable disturbance decreases as the slope categories increase in percentage by stepped categories. The four categories are 10-14.99%, 15-19.99%, 20-24.99% and $\geq 25\%$. Disturbance is prohibited on any slopes in excess of 25 percent. The Zoning Ordinance promotes steep slope areas to be set aside as conservation areas.

The Riparian Corridor Overlay District, Article XVIII, is established in the Zoning Ordinance around perennial and intermittent streams, wetlands and watercourses bounded by alluvial soils. The ordinance establishes a Zone 1 (25 foot buffer) and Zone 2 (an additional 50 foot buffer) around the above-mentioned resources to comprise the riparian corridor. Zone 1 may be expanded to include contiguous steep slopes, but the maximum distance of both zones combined is 75 feet. Zone 1 only permits, by right, natural resource related activities, stream bank stabilization and driveways. In addition to the types of uses permitted in Zone 1, Zone 2 also requires that $\frac{1}{2}$ of the building setback line for the applicable zoning district is applied from the Zone 2 boundary. Central sewer lines are permitted in both Zones 1 and 2 as conditional uses. Subsurface sewage disposal systems are prohibited in the Riparian Corridor Overlay District.

The Upper Salford Subdivision/Land Development Ordinance, Section 607, seeks to protect groundwater quality by requiring that development plans delineate a circular clear space around each existing or proposed well, within which no sewage system will be located.

In Article 6 of its Subdivision/Land Development Ordinance, Upper Salford administers a thorough set of regulations to assure proper management of stormwater during land development and disturbance activities. Through design standards and permit requirements, these regulations augment groundwater recharge, protect floodplains and stream channels from flooding impacts, and limit surface water degradation from runoff-borne sediment.

Any residential subdivision of five lots or more, or any nonresidential land development plan is required to prepare a Water Resources Impact Study in accordance with the requirements of Section 619 of the Subdivision and Land Development Ordinance. This study insures adequate yields and potable water supply for the intended use and also protects adjacent wells and surface waters from adverse impacts.

Within the Township's two industrial zoning districts, applicants are required to document, through an approved geologic study, that sufficient groundwater will be available to serve the proposed use without impacting neighboring properties.

The Township defers regulation of wetlands to the appropriate state and federal authorities.

d. Water Quality Designations

In 1937, Pennsylvania passed the Clean Streams Law (Act 394), which enabled the State, through its agencies, to protect the quality of water. With amendments in 1972 to the Federal Water Pollution Control Act, which established uniform standards on effluent limitations for "point sources" of water pollution, came amendments to Act 394 to regulate discharges into State waters.

The Clean Streams Law is administered by the Pennsylvania Department of Environmental Protection. The various rules and regulations which DEP is required to follow are contained in chapters which specify the procedures to be utilized. Chapter 93, Water Quality Standards, contain designations for most of the State waterways plus standards that place limitations on the amount of dissolved solids that can be discharged into the various waterway segments. The waterway designations, contained in Chapter 93, are based

on uses to be protected such as aquatic habitats, water supplies, and recreational activities. There are also special designation categories for waters of special quality or environmental importance, called high quality (HQ) or exceptional value (EV).

The classification system is divided into four separate categories based on continued support of aquatic life and biological processes unique to water composition. They are (1) Cold Water Fishery (CWF), (2) Warm Water Fishery (WWF), (3) Migratory Fishery (MF), and (4) Trout Stocked Fishery (TSF). These classifications require that the temperature and dissolved oxygen levels be maintained at levels adequate to support the various fish species indigenous to these waters, as well as, the flora and fauna necessary to support these species. Chapter 93 also contains a list of allowable loading levels of various pollutants for the designation categories. Not all potential pollutants are listed, but the Act states that unlisted substances, which are harmful to the designated use, will be regulated by the DEP.

For the waterway segments identified as high quality or exceptional value, special protection measures are taken including, the requirement to submit a Social and Economic Justification Report to demonstrate why the benefits of a new discharge would outweigh the potential problems as a result of these additional loadings.

As mentioned above, the regulation of new or expanded stream discharges is controlled by the DEP through the Clean Streams Law. It is, however, important for local municipalities to be actively involved in review of these permit applications or renewals, as provided by Act 394. Through this participation, local governments can help ensure that these resources are not degraded due to contamination problems, as a result of system malfunction or overloading of contaminants.

Table IV-1 lists the designations for the appropriate river and stream segments in Upper Salford Township. For the most current pollutant loading criteria and other requirements, a copy of Chapter 93 standards can be obtained from the DEP office in Norristown.

Table IV-1
Upper Salford Township Water Quality Designations

Waterway	Segment	Chapter 93 Designation ¹
Perkiomen (Main Stream)	Green Lane Reservoir Dam to Mouth	WWF, MF
East Branch Perkiomen	Entire Basin	TSF
Unami Creek	Entire Basin	HQ, TSF
Indian Creek	Entire Basin	WWF

1. Designations: WWF- Warm Water Fishery
MF - Migratory Fishery
TSF - Trout Stocked Fishery
HQ - High Quality

B. Existing Land Use and Future Growth Projections

1. Existing Developments or Plotted Subdivisions

Existing subdivisions are clearly shown on the Existing Land Use Map Figure 7. A list of active subdivisions and the associated dwelling units is provided in Table IV-3.

2. Existing Land Use

The predominant use is residential (37.2% of the acreage in the Township), with 22.9% of this being single-family detached dwellings. Relative concentrations occur in the Villages of Woxall, Salfordville, and Salford.

In combination, the Township's commercial, industrial, and institutional uses occupy only 6.4% of the land area. Undeveloped and vacant land, including farmland, accounts for 56.4%.

3. Future Growth Areas and Population Projections

The Indian Valley Regional Comprehensive Plan does not designate any part of Upper Salford Township as a Growth Area. The plan identifies the future land use of the Township in two categories. The Rural Resource Area is the first area. This area proposes preservation of woodlands and farmland through low density development. This is not a growth area and proposals must be supported with on-site sewer and water. The second area is Village Conservation. This land use is designated for the existing villages of Woxall, Salford and Salfordville. The preservation of the

existing villages through flexibility in use is the focus of this land use area. Any proposed development within this area is to be served with on-site sewer and water. Public sewer and water services may only be permitted when they are used to abate a public health nuisance.

Residential lands are developed predominantly at low densities with single-family detached dwellings. Upper Salford's population density in 2000 was 341 persons per square mile; this compared to 1,555 for Montgomery County as a whole. In terms of dwelling types, the Township's housing mix in 1990 and 2000 are as shown in Table IV-2.

Table IV-2

	1990	2000
Single-family detached	842 (90.8%)	978 (93.5%)
Single-family attached	22 (2.4%)	22 (2.1%)
Multi-family	32 (3.5%)	32 (3.1%)
Mobile homes/other	31 (3.3%)	14 (1.3%)
Total units	927	1046

(Source: Indian Valley Regional Comprehensive Plan 2005)

Table IV-3
Existing Subdivision

Development	Approved Units	Built Units*
1. Heather Drive Area	90	90
2. Lawrence Drake	13	13
3. Campus Hill	10	10
4. Fallowfield Extension	10	10
5. Salford Ridge	24	24
6. ShadyLane	11	11
7. Schwendt	10	10
8. Cuppy	11	11
9. Benner	10	10
10. Hunsberger	14	14
11. Hickory Estates	13	13
12. Larson	18	18
13. Harpers Farm	11	0
14. Covenant Community Church LD	1 (institutional)	0
15. Spring Run Farm	24	0
16. Damiani	4	4
17. Weller Tract	2	1

Development	Approved Units	Built Units*
18. Westfield Estates	13	6
19. Vaughn Run Phase 1	20	20
20. Vaughn Run Phase 2	7	0
21. 1754 Woford Rd.	1	0
22. New Life Youth Family Services LD	16 (dormitories)	0
23. Hershey Meadows	2	0
24. Bunton Tract	1	0

*as of March 2009

The population projections for the Township are based on the information supplied in the Demographics Section of the Indian Valley Regional Comprehensive Plan 2005. The population of the Township increased by 11% from 1990 to 2000 and continued growth is forecasted to continue. The Township population in 1990 was 2,719 and 3,024 in 2000. The County population also increased by 11% from 1990 to 2000. On a regional basis, the Indian Valley saw an increase of 24% during the same time period.

As part of the Comprehensive plan preparation, the Delaware Valley Regional Planning Commission (DVRPC) conducted population forecasts for the region. The forecast considered the census data of year 2000 and applied population trend assumptions to all areas of the region through 2025. For Upper Salford, a forecasted percent increase of 56% (or approximately 1700 residents) is shown from 2000 – 2025. This percentage increase is the second highest in the Indian Valley Region (Franconia 73%).

Given the current zoning regulations and presence of environmentally sensitive features throughout the Township, it would seem that this estimation may be high and probably occur in moderate to low density areas of the Township currently served with on-lot sewage and water facilities. However, with the forecasted increase in population for the region, the Township should make considerations for maintaining the functionality of existing systems and addressing ones that are already substandard or deficient.